Confidential Draft Submission Amendment No. 1 submitted to the Securities and Exchange Commission on April 4, 2014.
This draft registration statement has not been filed publicly with the Securities and Exchange Commission and all information contained herein remains confidential.

Registration No. 333-

UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549

AMENDMENT NO. 1 TO
FORM S-1
REGISTRATION STATEMENT
UNDER
THE SECURITIES ACT OF 1933

Mirna Therapeutics, Inc.
(Exact name of Registrant as specified in its charter)

Delaware	**2834**	**26-1824804**
(State or other jurisdiction of incorporation or organization)	(Primary Standard Industrial Classification Code Number)	(I.R.S. Employer Identification Number)

2150 Woodward Street, Suite 100
Austin, TX 78744
(512) 901-0900
(Address, including zip code, and telephone number, including area code, of Registrant's principal executive offices)

Paul Lammers, M.D., M.Sc.
President & Chief Executive Officer
Mirna Therapeutics, Inc.
2150 Woodward Street, Suite 100
Austin, TX 78744
(512) 901-0900
(Name, address, including zip code, and telephone number, including area code, of agent for service)

Copies to:

Alan C. Mendelson, Esq.	**Scott D. Elliott, Esq.**
Mark V. Roeder, Esq.	**Patrick O'Brien, Esq.**
Latham & Watkins LLP	**Ropes & Gray LLP**
140 Scott Drive	**3 Embarcadero Center**
Menlo Park, CA 94025	**San Francisco, CA 94111**
Telephone: (650) 328-4600	**Telephone: (415) 315-6300**
Facsimile: (650) 463-2600	**Facsimile: (415) 315-6350**

Approximate date of commencement of proposed sale to the public:
As soon as practicable after the effective date of this Registration Statement.

If any of the securities being registered on this Form are to be offered on a delayed or continuous basis pursuant to Rule 415 under the Securities Act of 1933, check the following box. o

If this Form is filed to register additional securities for an offering pursuant to Rule 462(b) under the Securities Act, please check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering. o

If this Form is a post-effective amendment filed pursuant to Rule 462(c) under the Securities Act, check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering. o

If this Form is a post-effective amendment filed pursuant to Rule 462(d) under the Securities Act, check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering. o

Indicate by check mark whether the Registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, or a smaller reporting company. See the definitions of "large accelerated filer," "accelerated filer" and "smaller reporting company" in Rule 12b-2 of the Exchange Act.

Large accelerated filer o	Accelerated filer o	Non-accelerated filer ☒ (Do not check if a smaller reporting company)	Smaller reporting company o

CALCULATION OF REGISTRATION FEE

Title of each class of securities to be registered	Proposed maximum aggregate offering price(1)	Amount of registration fee(1)
Common Stock, $0.001 par value per share	$	$

(1) Estimated solely for the purpose of calculating the amount of the registration fee in accordance with Rule 457(o) under the Securities Act of 1933, as amended. Includes shares that the underwriters have the option to purchase.

The Registrant hereby amends this Registration Statement on such date or dates as may be necessary to delay its effective date until the Registrant shall file a further amendment which specifically states that this Registration Statement shall thereafter become effective in accordance with Section 8(a) of the Securities Act of 1933 or until the Registration Statement shall become effective on such date as the Commission, acting pursuant to said Section 8(a), may determine.

EXPLANATORY NOTE

This Amendment No. 1 to Form S-1 Registration Statement of Mirna Therapeutics, Inc. is being filed solely to include exhibits to the Registration Statement. Accordingly, Part I, the form of prospectus, has been omitted from this filing.

PART II

Information Not Required in Prospectus

Item 13. Other Expenses of Issuance and Distribution.

The following table sets forth the costs and expenses, other than the underwriting discounts and commissions, payable by the registrant in connection with the sale of Common Stock being registered. All amounts are estimates except for the Securities and Exchange Commission, or SEC, registration fee, the FINRA filing fee and The NASDAQ Global Market listing fee.

Item	Amount to be paid
SEC registration fee	$ *
FINRA filing fee	*
The NASDAQ Global Market listing fee	*
Printing and engraving expenses	*
Legal fees and expenses	*
Accounting fees and expenses	*
Blue Sky, qualification fees and expenses	*
Transfer Agent fees and expenses	*
Miscellaneous expenses	*
Total	$ *

* To be completed by amendment

Item 14. Indemnification of Directors and Officers.

As permitted by Section 102 of the Delaware General Corporation Law, we have adopted provisions in our amended and restated certificate of incorporation and bylaws that limit or eliminate the personal liability of our directors for a breach of their fiduciary duty of care as a director. The duty of care generally requires that, when acting on behalf of the corporation, directors exercise an informed business judgment based on all material information reasonably available to them. Consequently, a director will not be personally liable to us or our stockholders for monetary damages for breach of fiduciary duty as a director, except for liability for:

- any breach of the director's duty of loyalty to us or our stockholders;
- any act or omission not in good faith or that involves intentional misconduct or a knowing violation of law;
- any act related to unlawful stock repurchases, redemptions or other distributions or payment of dividends; or
- any transaction from which the director derived an improper personal benefit.

These limitations of liability do not affect the availability of equitable remedies such as injunctive relief or rescission. Our amended and restated certificate of incorporation also authorizes us to indemnify our officers, directors and other agents to the fullest extent permitted under Delaware law.

As permitted by Section 145 of the Delaware General Corporation Law, our amended and restated bylaws provide that:

- we may indemnify our directors, officers, and employees to the fullest extent permitted by the Delaware General Corporation Law, subject to limited exceptions;

- we may advance expenses to our directors, officers and employees in connection with a legal proceeding to the fullest extent permitted by the Delaware General Corporation Law, subject to limited exceptions; and

- the rights provided in our amended and restated bylaws are not exclusive.

Our amended and restated certificate of incorporation, to be attached as Exhibit 3.3 hereto, and our amended and restated bylaws, to be attached as Exhibit 3.5 hereto, provide for the indemnification provisions described above and elsewhere herein. We intend to enter into separate indemnification agreements with our directors and officers which may be broader than the specific indemnification provisions contained in the Delaware General Corporation Law. These indemnification agreements generally require us, among other things, to indemnify our officers and directors against liabilities that may arise by reason of their status or service as directors or officers, other than liabilities arising from willful misconduct. These indemnification agreements also generally require us to advance any expenses incurred by the directors or officers as a result of any proceeding against them as to which they could be indemnified. In addition, we have purchased a policy of directors' and officers' liability insurance that insures our directors and officers against the cost of defense, settlement or payment of a judgment in some circumstances. These indemnification provisions and the indemnification agreements may be sufficiently broad to permit indemnification of our officers and directors for liabilities, including reimbursement of expenses incurred, arising under the Securities Act of 1933, as amended, or the Securities Act.

The form of Underwriting Agreement, to be attached as Exhibit 1.1 hereto, provides for indemnification by the underwriters of us and our officers who sign this Registration Statement and directors for specified liabilities, including matters arising under the Securities Act.

Item 15. Recent Sales of Unregistered Securities.

The following list sets forth information as to all securities we have sold since January 1, 2011, which were not registered under the Securities Act.

1. In August 2011, we issued an aggregate of 540,341 shares of our Series B convertible preferred stock, which gives effect to the 10-for-1 reverse stock split in October 2012, at a price per share of $2.776 per share for aggregate gross consideration of $1.5 million to nine accredited investors.

2. In August 2011, we issued 2,243,330 shares of our Series B convertible preferred stock, which gives effect to the 10-for-1 reverse stock split in October 2012, upon the cashless exercise of a warrant.

3. In October 2012, we issued 10,914,647 shares of Series B-1 convertible preferred stock for 2,243,330 shares of Series B Preferred Stock, which gives effect to the 10-for-1 reverse stock split in October 2012, and the extinguishment of a note payable.

4. In October 2012 and December 2013, we issued 33,889,971 and 33,889,971 shares of Series C convertible preferred stock, respectively, at a price per share of $0.509 per share for aggregate gross consideration of approximately $34.50 million to 18 accredited investors.

5. In October 2012, we issued 1,573,753 shares of Series C convertible preferred shares as a dividend to the holders of our Series A convertible preferred stock and Series B convertible preferred stock.

6. We granted stock options and stock awards to employees, directors and consultants under our 2008 Long Term Incentive Plan, as amended, covering an aggregate of 8,197,105 shares of common stock, at a weighted-average average exercise price of $0.29 per share. Of these, options covering an aggregate of 29,441 shares were cancelled without being exercised.

7. We sold an aggregate of 906,623 shares of common stock to employees, directors and consultants for cash consideration in the aggregate amount of $160,133.76 upon the exercise of stock options and stock awards.

We claimed exemption from registration under the Securities Act for the sale and issuance of securities in the transactions described in paragraphs (1) through (5) above by virtue of Section 4(2) and/or Regulation D promulgated thereunder as transactions not involving any public offering. All of the purchasers of unregistered securities for which we relied on Section 4(2) and/or Regulation D represented that they were accredited investors as defined under the Securities Act. We claimed such exemption on the basis that (a) the purchasers in each case represented that they intended to acquire the securities for investment only and not with a view to the distribution thereof and that they either received adequate information about the registrant or had access, through employment or other relationships, to such information and (b) appropriate legends were affixed to the stock certificates issued in such transactions.

We claimed exemption from registration under the Securities Act for the sales and issuances of securities in the transactions described in paragraphs (6) and (7) above under Section 4(2) of the Securities Act, in that such sales and issuances did not involve a public offering, or under Rule 701 promulgated under the Securities Act, in that they were offered and sold either pursuant to written compensatory plans or pursuant to a written contract relating to compensation, as provided by Rule 701.

Item 16. Exhibits and Financial Statement Schedules.

(a) Exhibits. See the Exhibit Index attached to this Registration Statement, which is incorporated by reference herein.

(b) Financial Statement Schedules. Schedules not listed above have been omitted because the information required to be set forth therein is not applicable or is shown in the financial statements or notes thereto.

Item 17. Undertakings.

Insofar as indemnification for liabilities arising under the Securities Act may be permitted to directors, officers and controlling persons of the Registrant pursuant to the foregoing provisions, or otherwise, the Registrant has been advised that in the opinion of the SEC such indemnification is against public policy as expressed in the Securities Act, and is, therefore, unenforceable. In the event that a claim for indemnification against such liabilities (other than the payment by the Registrant of expenses incurred or paid by a director, officer, or controlling person of the Registrant in the successful defense of any action, suit or proceeding) is asserted by such director, officer or controlling person in connection with the securities being registered, the Registrant will, unless in the opinion of its counsel the matter has been settled by controlling precedent, submit to a court of appropriate jurisdiction the question of whether such indemnification by it is against public policy as expressed in the Securities Act and will be governed by the final adjudication of such issue.

The undersigned Registrant hereby undertakes that:

1. For purposes of determining any liability under the Securities Act, the information omitted from the form of prospectus filed as part of this Registration Statement in reliance upon Rule 430A and contained in a form of prospectus filed by the Registrant pursuant to Rule 424(b)(1) or (4) or 497(h) under the Securities Act shall be deemed to be part of this Registration Statement as of the time it was declared effective.

2. For the purpose of determining any liability under the Securities Act, each post-effective amendment that contains a form of prospectus shall be deemed to be a new registration

statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial bona fide offering thereof.

The undersigned Registrant hereby undertakes to provide to the underwriters at the closing specified in the underwriting agreement certificates in such denominations and registered in such names as required by the underwriters to permit prompt delivery to each purchaser.

The undersigned Registrant undertakes that in a primary offering of securities of the undersigned registrant pursuant to this registration statement, regardless of the underwriting method used to sell the securities to the purchaser, if the securities are offered or sold to such purchaser by means of any of the following communications, the undersigned Registrant will be a seller to the purchaser and will be considered to offer or sell such securities to such purchaser:

1. Any preliminary prospectus or prospectus of the undersigned Registrant relating to the offering required to be filed pursuant to Rule 424;

2. Any free writing prospectus relating to the offering prepared by or on behalf of the undersigned Registrant or used or referred to by the undersigned Registrant;

3. The portion of any other free writing prospectus relating to the offering containing material information about the undersigned Registrant or its securities provided by or on behalf of the undersigned Registrant; and

4. Any other communication that is an offer in the offering made by the undersigned Registrant to the purchaser.

Signatures

Pursuant to the requirements of the Securities Act of 1933, as amended, the Registrant has duly caused this Amendment to Registration Statement on Form S-1 to be signed on its behalf by the undersigned, thereunto duly authorized, in Austin, Texas, on , 2014.

MIRNA THERAPEUTICS, INC.

By: _____

Paul Lammers, M.D., M.Sc.
President and Chief Executive Officer

Power of Attorney

KNOW ALL PERSONS BY THESE PRESENTS, that each person whose signature appears below hereby constitutes and appoints Paul Lammers and Jon Irvin, and each of them acting individually, as his or her true and lawful attorneys-in-fact and agents, each with full power of substitution, for him or her in any and all capacities, to sign any and all amendments to this Registration Statement, including post-effective amendments or any abbreviated registration statement and any amendments thereto filed pursuant to Rule 462(b) increasing the number of securities for which registration is sought, and to file the same, with all exhibits thereto and other documents in connection therewith, with the SEC, granting unto said attorneys-in-fact and agents, with full power of each to act alone, full power and authority to do and perform each and every act and thing requisite and necessary to be done in connection therewith, as fully for all intents and purposes as he or she might or could do in person, hereby ratifying and confirming all that said attorneys-in-fact and agents, or his, her or their substitute or substitutes, may lawfully do or cause to be done by virtue hereof.

Pursuant to the requirements of the Securities Act, this Amendment to Registration Statement has been signed by the following persons in the capacities and on the dates indicated.

Signature	Title	Date
_____ Paul Lammers, M.D., M.Sc.	Director, President and Chief Executive Officer (Principal Executive Officer)	, 2014
_____ Jon Irvin	Chief Financial Officer (Principal Financial and Accounting Officer)	, 2014
_____ Michael Powell, Ph.D.	Chairman of the Board	, 2014
_____ Corey Goodman, Ph.D.	Director	, 2014

Signature	Title	Date
Elaine V. Jones, Ph.D.	Director	, 2014
Ed Mathers	Director	, 2014
Clay Siegall, Ph.D.	Director	, 2014
Matthew Winkler, Ph.D.	Director	, 2014

Exhibit Index

Exhibit Number	Description
1.1*	Form of Underwriting Agreement.
3.1	Fifth Amended and Restated Certificate of Incorporation, currently in effect.
3.2*	Form of Sixth Amended and Restated Certificate of Incorporation, effecting a reverse stock split, to be in effect prior to the consummation of this offering.
3.3*	Form of Amended and Restated Certificate of Incorporation, to be in effect immediately prior to the consummation of this offering.
3.4	Bylaws, currently in effect.
3.5*	Form of Amended and Restated Bylaws, to be in effect immediately prior to the consummation of this offering.
4.1	Reference is made to Exhibits 3.1 through 3.5.
4.2*	Form of Common Stock Certificate.
4.3	Second Amended and Restated Investor Rights Agreement, dated as of October 22, 2012, among Mirna Therapeutics, Inc. and certain of its stockholders, as amended.
5.1*	Opinion of Latham & Watkins LLP.
10.1*	Services Agreement, dated January 1, 2013, by and between Mirna Therapeutics, Inc. and Asuragen, Inc.
10.2(A)†	Cross License Agreement, dated November 3, 2009, by and between Mirna Therapeutics, Inc. and Asuragen, Inc.
10.2(B)†	First Amendment to the Cross License Agreement, dated September 28, 2012, by and between Mirna Therapeutics, Inc. and Asuragen, Inc.
10.3(A)†	License Agreement, dated December 22, 2011, by and between Mirna Therapeutics, Inc. and Marina Biotech, Inc.
10.3(B)†	Side Letter to License Agreement, dated December 22, 2011, by and between Mirna Therapeutics, Inc. and Marina Biotech, Inc.
10.3(C)†	Side Letter to License Agreement, dated November 16, 2012, by and between Mirna Therapeutics, Inc. and Marina Biotech, Inc.
10.3(D)†	Amendment No. 1 to License Agreement, dated December 27, 2013, by and between Mirna Therapeutics, Inc. and Marina Biotech, Inc.
10.3(E)†	Side Letter to License Agreement, dated January 9, 2014, by and between Mirna Therapeutics, Inc. and Marina Biotech, Inc.
10.4†	Amended and Restated Agreement, dated February 6, 2014, by and between Mirna Therapeutics, Inc. and Yale University.
10.5†	License Agreement, dated March 10, 2013, by and between Mirna Therapeutics, Inc. and University of Zurich.
10.6†	Cancer Research Grant Contract, dated August 31, 2010, by and between Mirna Therapeutics, Inc. and the Cancer Prevention and Research Institute of Texas.
10.7(A)#	2008 Long Term Incentive Plan, as amended.
10.7(B)#	Form of Notice of Stock Option Grant under 2008 Long Term Incentive Plan.
10.7(C)#	Form of Stock Option Agreement under 2008 Long Term Incentive Plan.

Exhibit Number	Description
10.8#*	2014 Equity Incentive Award Plan.
10.9#*	Form of Indemnity Agreement for directors and officers.
23.1*	Consent of independent registered public accounting firm.
23.2*	Consent of Latham & Watkins LLP (included in Exhibit 5.1).
24.1*	Power of Attorney. Reference is made to the signature page to the Registration Statement.

* To be filed by amendment.

† Portions of this exhibit (indicated by asterisks) have been omitted pursuant to a request for confidential treatment and this exhibit has been filed separately with the SEC.

# Indicates management contract or compensatory plan.

QuickLinks

FIFTH AMENDED AND RESTATED
CERTIFICATE OF INCORPORATION
OF
MIRNA THERAPEUTICS, INC.
(a Delaware corporation)

(Pursuant to Sections 228, 242 and 245 of the
General Corporation Law of the State of Delaware)

Mirna Therapeutics, Inc. (the "***Company***"), a corporation organized and existing under the General Corporation Law of the State of Delaware as set forth in Title 8 of the Delaware Code (the "***DGCL***"), hereby certifies as follows:

1. The Company was originally incorporated on December 20, 2007 pursuant to the DGCL. A Second Amended and Restated Certificate of Incorporation of the Company was filed with the Secretary of State of Delaware on December 4, 2009. A Third Amended and Restated Certificate of Incorporation of the Company was filed with the Secretary of State of Delaware on August 10, 2011. A Fourth Amended and Restated Certificate of Incorporation of the Company was filed with the Secretary of State of Delaware on October 22, 2012 (the "***Original Certificate***").

2. Pursuant to Sections 228, 242 and 245 of the DGCL, this Fifth Amended and Restated Certificate of Incorporation (this "***Restated Certificate***") restates and integrates and further amends the provisions of the Original Certificate.

3. The text of the Original Certificate is hereby amended and restated in its entirety to read as follows:

ARTICLE ONE

The name of this corporation is Mirna Therapeutics, Inc. (the "***Company***").

ARTICLE TWO

The address of the registered office of the Company in the State of Delaware is Corporation Trust Center, 1209 Orange Street, in the City of Wilmington, County of New Castle, Delaware 19801. The name of its registered agent at such address is The Corporation Trust Company.

ARTICLE THREE

The purpose of the Company is to engage in any lawful act or activity for which a corporation may be organized under the DGCL.

ARTICLE FOUR

A. The Company is authorized to issue two classes of stock to be designated, respectively, Common Stock and Preferred Stock. The total number of shares that the Company is authorized to issue is 179,000,783 shares, 95,000,000 shares of which shall be Common Stock (the "***Common Stock***"), and 84,000,783 shares of which shall be Preferred Stock (the "***Preferred Stock***"). The Common Stock shall have a par value of $0.001 per share and the Preferred Stock shall have a par value of $0.001 per share.

B. [Reserved.]

C. Subject to the provisions of this Restated Certificate, the Company may purchase, directly or indirectly, its own shares to the extent that may be allowed by law.

D. 3,192,083 of the authorized shares of Preferred Stock are hereby designated Series A Preferred Stock (the "***Series A Preferred Stock***"), 540,341 of the authorized shares of Preferred Stock are hereby designated Series B Preferred Stock (the "***Series B Preferred Stock***" and together with the Series A Preferred Stock, the "***Junior Preferred Stock***"), 10,914,647 of the authorized shares of Preferred Stock are hereby designated Series B-1 Preferred Stock (the "***Series B-1 Preferred Stock***") and 69,353,712 of the authorized shares of Preferred Stock are hereby designated Series C Preferred Stock (the "***Series C Preferred Stock***" and collectively with the Junior Preferred Stock and Series B-1 Preferred Stock, the "***Series Preferred***").

E. The "***Effective Time***" means the time upon which this Restated Certificate becomes effective pursuant to the DGCL.

F. The "***Original Issue Price***" means, collectively, the Series A Original Issue Price, Series B Original Issue Price, Series B-1 Original Issue Price and Series C Original Issue Price.

G. The "***Series A Original Issue Price***" means $2.00 per share, as adjusted for any stock dividends, combinations, splits, recapitalizations and the like with respect to the Series A Preferred Stock after the Effective Time.

H. The "***Series B Original Issue Price***" means $2.776 per share, as adjusted for any stock dividends, combinations, splits, recapitalizations and the like with respect to the Series B Preferred Stock after the Effective Time.

I. The "***Series B-1 Original Issue Price***" means $0.458 per share, as adjusted for any stock dividends, combinations, splits, recapitalizations and the like with respect to the Series B-1 Preferred Stock after the Effective Time.

J. The "***Series C Original Issue Price***" means $0.509 per share, as adjusted for any stock dividends, combinations, splits, recapitalizations and the like with respect to the Series C Preferred Stock after the Effective Time.

K. The rights, preferences, privileges, restrictions and other matters relating to the Series Preferred are as follows:

1. Dividend Rights.

(a) From and after the applicable date of the issuance of any share of Series C Preferred Stock, dividends at the rate per annum of eight percent (8%) of the Series C Original Issue Price shall accrue on such share of Series C Preferred Stock (the "***Series C Accruing Dividends***"), payable in cash or in kind, at the written election of the Majority Series C Holders (as defined in Section 6 hereof), on a pari passu basis among the holders of shares of Series C Preferred Stock and prior and in preference to any payment of any dividend on shares of Series B-1 Preferred Stock, Junior Preferred Stock and Common Stock, when, as and if declared by the Company's board of directors (the "***Board***") but in no event later than upon the earliest to occur of (i) any Liquidation Event (as defined below), (ii) any conversion of shares of Series C Preferred Stock into shares of Common Stock in accordance with Section 5 and (iii) any redemption of the Series C Preferred Stock in accordance with Section 6 (each, a "***Series C Accruing Dividend Event***"); *provided, however*, that, notwithstanding anything herein to the contrary, payment of Series C Accruing Dividends in connection with the conversion of shares of Series C Preferred Stock into shares of Common Stock in accordance with Section 5 shall be governed by the operation of Section 5(d) below. The Series C Accruing Dividends shall accrue from day to day, whether or not declared, and shall be cumulative; *provided, however*, that except as set forth in this Section 1(a), Section 3, Section 5 and Section 6, the Series C Accruing Dividends shall be payable only when, as and if declared by the Board and the Company shall otherwise be under no obligation to pay the Series C Accruing Dividends; *provided, further*, that payment of Series C Accruing Dividends in connection with a Series C Accruing Dividend Event is subject to an Accrual End Date as determined by the Board pursuant to Section 1(g) below. From and after the Effective Time, the Company shall not declare, pay or set aside any dividends on shares of any other class or series of capital stock of the Company (other than dividends on shares of Common Stock payable in shares of Common Stock) unless (in addition to the obtaining of any consents required elsewhere in this Restated Certificate) the holders of shares of Series C Preferred Stock shall first receive a dividend on each outstanding share of Series C Preferred Stock in an amount at least equal to the sum of (i) the amount of the aggregate Series C Accruing Dividends then accrued on such share of Series C Preferred Stock and not previously paid plus (ii) (A) in the case of a dividend on Common Stock or any class or series that is convertible into Common Stock, that dividend per share of Series C Preferred Stock as would equal the product of (1) the dividend payable on each share of such class or series determined, if applicable, as if all shares of such class or series had been converted into Common Stock and (2) the number of shares of Common Stock issuable upon conversion of a share of Series C Preferred Stock, in each case calculated on the record date for determination of holders entitled to receive such dividend or (B) in the case of a dividend on any class or series that is not convertible into Common Stock, at a rate per share of Series C Preferred Stock determined by (1) dividing the amount of the dividend payable on each share of such class or series of capital stock by the original issuance price of such class or series of capital stock (as adjusted for any stock dividends, combinations, splits, recapitalizations and the like with respect to such class or series after the Effective Time) and (2) multiplying such fraction by an amount equal to the Series C Original Issue Price; provided that if the Company declares, pays or sets aside, on the same date, a dividend on

shares of more than one class or series of capital stock of the Company, the dividend payable to the holders of Series C Preferred Stock pursuant to this Section 1(a) shall be calculated based upon the dividend on the class or series of capital stock that would result in the highest Series C Preferred Stock dividend.

(b) From and after the Effective Time, holders of shares of Series B-1 Preferred Stock, in preference to the holders of shares of Junior Preferred Stock and Common Stock, shall be entitled to receive, when, as and if declared by the Board, but only out of funds that are legally available therefor, dividends on each outstanding share of Series B-1 Preferred Stock. Such dividends shall be payable only when, as and if declared by the Board and shall be non-cumulative.

(c) From and after the Effective Time, holders of shares of Junior Preferred Stock, in preference to the holders of shares of Common Stock, shall be entitled to receive, when, as and if declared by the Board, but only out of funds that are legally available therefor, dividends on each outstanding share of Junior Preferred Stock. Such dividends shall be payable only when, as and if declared by the Board and shall be non-cumulative.

(d) So long as any shares of Series Preferred are outstanding, the Company shall not pay or declare any dividend, whether in cash or property, or make any other distribution on the Common Stock, or purchase, redeem or otherwise acquire for value any shares of Common Stock until all dividends as set forth in Sections 1(a), 1(b) and 1(c) above on the Series Preferred have been paid or declared and set apart, except for:

(i) acquisitions of shares of Common Stock by the Company pursuant to agreements that permit the Company to repurchase such shares at cost (or the lesser of cost or fair market value) upon termination of services to the Company; or

(ii) acquisitions of shares of Common Stock in exercise of the Company's right of first refusal to repurchase such shares.

(e) If dividends are paid on any share of Common Stock, the Company shall, subject to the dividend rights of Series C Preferred Stock under Section 1(a) above, pay an additional dividend on each outstanding share of Series B-1 Preferred Stock and Junior Preferred Stock in a per share amount (on an as-if-converted-to-Common Stock basis) equal to the amount paid or set aside for each share of Common Stock

(f) The provisions of Section 1(d) and 1(e) shall not apply to a dividend payable in Common Stock (in which case the provisions of Section 5(f) shall apply), or any redemption or repurchase of any outstanding securities of the Company pursuant to this Restated Certificate or otherwise unanimously approved by the Board.

(g) Notwithstanding anything herein to the contrary, on or prior to a Series C Accruing Dividend Event, the Board may designate a date by which

the Series C Accruing Dividend shall no longer accrue pursuant to Section 1(a); *provided*, that such date shall be no greater than 14 days prior to the effectiveness of such Series C Accruing Dividend Event (the "***Accrual End Date***"). In the event that the Series C Accruing Dividend Event does not occur within 14 days of the Accrual End Date determined by the Board, the determination of such Accrual End Date shall terminate and be of no further force or effect and the Board may determine a new Accrual End Date pursuant to this Section 1(g) or the Series C Accruing Dividends will continue to accrue pursuant to Section 1(a) above as if no Accrual End Date had been designated.

2. VOTING RIGHTS.

(a) General Rights. In addition to any class or series voting right provided under this Restated Certificate, applicable law or otherwise, on any matter presented to the stockholders of the Company for their action or consideration at any meeting of stockholders of the Company (or by written consent of stockholders in lieu of a meeting), each holder of shares of Series Preferred shall be entitled to the number of votes equal to the number of shares of Common Stock into which such shares of Series Preferred could be converted pursuant to Section 5 hereof immediately after the close of business on the record date fixed for such meeting, or the effective date of such written consent, and shall have voting rights and powers equal to the voting rights and powers of the Common Stock and shall be entitled to notice of any stockholders' meeting in accordance with the bylaws of the Company, as amended from time to time (the "***Bylaws***"). Except as otherwise provided herein or as required by law, the holders of shares of Series Preferred and the holders of shares of Common Stock shall vote together, and not as separate classes, on all matters to come before the stockholders. The number of authorized shares of Common Stock may be increased or decreased (but not below the number of shares of Common Stock then outstanding and the number of shares of Common Stock issuable upon conversion of shares of Preferred Stock that are then outstanding) by the affirmative vote of the holders of a majority of the then-outstanding shares of capital stock of the Company, voting together as a single class on an as-if-converted basis, irrespective of the provisions of Section 242(b)(2) of the DGCL.

(b) Election of Directors. Subject to the provisions of this Section 1(g)(b), (i) the holders of record of the shares of Series C Preferred Stock, voting together as a separate class, shall be entitled to elect three (3) directors of the Company (the "***Series C Directors***"), (ii) the holders of record of the shares of Junior Preferred Stock, voting together as a single class on an as-if converted basis, shall be entitled to elect one (1) director of the Company (the "***Junior Preferred Director***" and together with the Series C Directors, the "***Preferred Directors***") and (iii) the holders of record of the shares of Common Stock and Series Preferred, voting together as a single class on an as-if-converted basis, shall be entitled to elect three (3) directors of the Company. Any director elected as provided in the preceding sentence may be removed without cause by, and only by, the affirmative vote of the holders of the shares of the class or series of capital stock entitled to elect such director or directors, given either at a special meeting of such stockholders duly called for that purpose or pursuant to a written consent of stockholders. If the holders of shares of Series C Preferred Stock, Junior Preferred Stock or Common Stock and Series Preferred, as the case may be, fail to elect a sufficient

number of directors to fill all directorships for which they are entitled to elect directors, voting exclusively and as a separate class, pursuant to the first sentence of this Section 1(g)(b), then any directorship not so filled shall remain vacant until such time as the holders of the Series C Preferred Stock, Junior Preferred Stock or Common Stock and Series Preferred, as the case may be, elect a person to fill such directorship by vote or written consent in lieu of a meeting; and no such directorship may be filled by stockholders of the Company other than by the stockholders of the Company that are entitled to elect a person to fill such directorship, voting exclusively and as a separate class. At any meeting held for the purpose of electing a director, the presence in person or by proxy of the holders of a majority of the outstanding shares of the class or series of capital stock entitled to elect such director shall constitute a quorum for the purpose of electing such director. A vacancy in any directorship filled by the holders of any class or series of capital stock shall be filled only by vote or written consent in lieu of a meeting of the holders of such class or series of capital stock or by any remaining director or directors elected by the holders of such class or series pursuant to this Section 1(g)(b).

(c) Separate Vote of the Series Preferred.

(i) In addition to any other vote or consent required herein or by law, from and after the Effective Time, the Company shall not, and shall not permit its subsidiaries to, in either case directly or indirectly by amendment, merger, reorganization, consolidation or otherwise, do any of the following without (in addition to any other vote required by law or this Restated Certificate) the written consent or affirmative vote of the holders of at least a majority of the then-outstanding shares of Series Preferred, voting together as a single class on an as-if-converted basis (the "***Required Holders***"), given in writing or by vote at a meeting, and any such act or transaction entered into without such consent or vote shall be null and void ab initio, and of no force or effect:

(A) amend, alter or repeal any provision of this Restated Certificate or the Bylaws;

(B) reclassify, alter or amend any outstanding shares of securities of the Company into shares having rights, preferences or privileges senior to or on a parity with any Series Preferred;

(C) create, authorize the creation of or issue, or obligate itself to create, authorize the creation of or issue, any capital stock or other security of any class or series, including, without limitation, any other security convertible into or exercisable or exchangeable for any equity security of any class or series, having rights, preferences or privileges senior to or on a parity with any Series Preferred;

(D) authorize or effect any merger, consolidation or reorganization of the Company or any Deemed Liquidation Event;

(E) authorize or effect any acquisition of another entity or all or substantially all of the assets of any entity, or permit any subsidiary of the Company to do so;

(F) liquidate, dissolve or wind up the Company;

(G) increase or decrease the authorized number of members of the Board;

(H) declare or pay any dividends or make any other distribution, directly or indirectly, with respect to any shares of Common Stock or Series Preferred now or hereafter outstanding; *provided, however*, that this restriction shall not apply to the Series C Accruing Dividends; or

(I) repurchase, redeem or otherwise acquire any of the Company's equity securities (including, without limitation, warrants, options, and other rights to acquire equity securities); *provided, however,* that this restriction shall not apply to (i) the repurchase of shares of Common Stock by the Company at cost (or the lesser of cost or the then-current fair market value thereof) from directors or employees of, or consultants or advisers to, the Company or any subsidiary pursuant to agreements in effect as of the Effective Time or agreements approved by the Board, including a majority of the Preferred Directors, after the Effective Time under which the Company has the option to repurchase such shares upon the termination of employment with or service to the Company or any subsidiary of the Company, (ii) the purchase of shares of Common Stock upon exercise by the Company of its right of first refusal with respect to such shares and (iii) a redemption pursuant to Section 6.

(ii) Without limiting the foregoing, the Company shall not, and shall not permit its subsidiaries to, in either case directly or indirectly by amendment, merger, reorganization, consolidation or otherwise, alter or change the powers, preferences or special rights of one or more series of the Series Preferred so as to affect them adversely, but not so affect the entire class of Series Preferred, without (in addition to any other vote required by law or this Restated Certificate) the written consent or affirmative vote of the holders of at least a majority of the then-outstanding shares of the series of Series Preferred so affected, voting together as a single class on an as-if-converted basis, given in writing or by vote at a meeting, and any such act or transaction entered into without such consent or vote shall be null and void ab initio, and of no force or effect; *provided, however*, that, for the avoidance of doubt, the creation of a new class or series of equity security having a preference senior to, or on parity with, a series of Series Preferred, including, but not limited to, with respect to dividend rights, liquidation preferences or redemption rights, shall not be deemed to adversely alter or change the powers, preferences or special rights of such series of Series Preferred.

3. LIQUIDATION RIGHTS.

(a) Upon any liquidation, dissolution, or winding up of the Company, whether voluntary or involuntary, or any Deemed Liquidation Event (as defined below) (each a "***Liquidation Event***"), before any distribution or payment may be made to the holders of any shares of Series B-1 Preferred Stock, Junior Preferred Stock or Common Stock, the holders of shares of Series C Preferred Stock then outstanding, by reason of their ownership of such stock, shall be entitled to be paid out of the assets of the

Company legally available for distribution to its stockholders an amount per share equal to the Series C Original Issue Price, plus any Series C Accruing Dividends accrued but unpaid thereon, whether or not declared, together with any other dividends declared but unpaid thereon (the "***Series C Liquidation Preference***"). If upon any Liquidation Event, the assets of the Company legally available for distribution to its stockholders shall be insufficient to make payment in full to the holders of shares of Series C Preferred Stock of the Series C Liquidation Preference, then such assets shall be distributed among the holders of shares of Series C Preferred Stock at the time outstanding, ratably in proportion to the full amounts to which they would otherwise be respectively entitled under this Section 3(a).

(b) Upon any Liquidation Event, after the payment in full of the Series C Liquidation Preference as set forth in Section 3(a) above and before any distribution or payment may be made to the holders of any shares of Junior Preferred Stock or Common Stock, the holders of shares of Series B-1 Preferred Stock then outstanding, by reason of their ownership of such stock, shall be entitled to be paid out of the assets of the Company legally available for distribution to its stockholders an amount per share equal to the product of (i) the Series B-1 Original Issue Price multiplied by (ii) 1.5 (the "***Series B-1 Base Liquidation Amount***"), plus any dividends declared but unpaid thereon (the "***Series B-1 Liquidation Preference***"). If upon any Liquidation Event, the remaining assets of the Company legally available for distribution to its stockholders (after payment in full of the Series C Liquidation Preference pursuant to Section 3(a)) shall be insufficient to make payment in full to the holders of shares of Series B-1 Preferred Stock of the Series B-1 Liquidation Preference, then such remaining assets shall be distributed among the holders of shares of Series B-1 Preferred Stock at the time outstanding, ratably in proportion to the full amounts to which they would be respectively entitled under this Section 3(b).

(c) Upon any Liquidation Event, after payment in full of the Series C Liquidation Preference as set forth in Section 3(a) above and the Series B-1 Liquidation Preference as set forth in Section 3(b) above and before any distribution or payment may be made to the holders of any shares of Common Stock, the holders of Junior Preferred Stock then outstanding, by reason of their ownership of such stock, shall be entitled to be paid out of the assets of the Company legally available for distribution to its stockholders, on a pari passu basis, an amount per share equal to (i) with respect to the Series B Preferred Stock, (x) the Series B Original Issue Price if the shares of Series B-1 Preferred Stock have been converted or, pursuant to Section 3(e), been deemed to be converted into shares of Common Stock immediately prior to the Liquidation Event, plus any dividends declared but unpaid thereon, or (y) $2.106, as adjusted for any stock dividends, combinations, splits, recapitalizations and the like with respect to the Series B Preferred Stock, plus any dividends declared but unpaid thereon ((x) or (y), as the case may be, the "***Series B Liquidation Preference***"), and (ii) with respect to the Series A Preferred Stock, (A) the Series A Original Issue Price if the shares of Series B-1 Preferred Stock have been converted or, pursuant to Section 3(e), been deemed to be converted into shares of Common Stock immediately prior to the Liquidation Event, plus any dividends declared but unpaid thereon, or (B) $1.330, as adjusted for any stock dividends, combinations, splits, recapitalizations and the like with respect to the Series A

Preferred Stock, plus any dividends declared but unpaid thereon ((A) or (B), as the case may be, the "***Series A Liquidation Preference***" and collectively with the Series B Liquidation Preference, the Series B-1 Liquidation Preference and the Series C Liquidation Preference, the "***Liquidation Preferences***"). If upon any Liquidation Event, the remaining assets of the Company legally available for distribution to its stockholders (after payment in full of the Series C Liquidation Preference pursuant to Section 3(a) and the Series B-1 Liquidation Preference pursuant to Section 3(b)) shall be insufficient to make payment in full to the holders of Junior Preferred Stock of the Series B Liquidation Preference and Series A Liquidation Preference, then such remaining assets shall be distributed among the holders of shares of Junior Preferred Stock at the time outstanding, ratably in proportion to the full amounts to which they would be respectively entitled under this Section 3(c).

(d) Upon any Liquidation Event, after payment in full of the aggregate Liquidation Preferences pursuant to Sections 3(a), (b) and (c) above, the remaining assets of the Company legally available for distribution or payment to its stockholders shall be distributed ratably among the holders of shares of Common Stock, the holders of shares of Series B Preferred Stock and the holders of shares of Series C Preferred Stock, on a pari passu and as-if-converted basis.

(e) Notwithstanding Sections 3(a) through (d) above, solely for purposes of determining the amount each holder of shares of Series Preferred is entitled to receive with respect to a Liquidation Event, each series of Series Preferred shall be treated as if such holder of Series Preferred had converted such holder's shares of Series Preferred into shares of Common Stock immediately prior to the Liquidation Event if, as a result of an actual conversion of such Series Preferred (including taking into account the operation of this Section 3(e)), such holder of such Series Preferred would receive (with respect to such Series Preferred), in the aggregate, an amount greater than the amount that would be distributed to such holder of such Series Preferred if such holder had not converted such Series Preferred into shares of Common Stock. If any holder of any Series Preferred shall be treated as if such holder had converted shares of Series Preferred into shares of Common Stock pursuant to this Section 3(e), then such holder shall not be entitled to receive any distribution pursuant to Section 3(a), (b) or (c) that would otherwise be made to such holder of Series Preferred.

4. DEEMED LIQUIDATION EVENTS.

(a) The Company shall not have the power to effect a Deemed Liquidation Event unless the consideration payable to the stockholders of the Company or the Company in such Deemed Liquidation Event shall be allocated among the holders of capital stock of the Company pursuant to Section 3 above.

(b) For the purposes of this Restated Certificate, a "***Deemed Liquidation Event***" means (i) any consolidation or merger of the Company or a subsidiary of the Company with or into any other corporation or other entity or person, or any other corporate reorganization, in which the stockholders of the Company immediately prior to such consolidation, merger or reorganization own, immediately after

such consolidation, merger or reorganization, less than fifty percent (50%) of the voting power of the surviving or resulting entity or, if the surviving or resulting entity is a wholly owned subsidiary of another corporation, the parent corporation of the surviving or resulting entity (excluding any consolidation, merger or reorganization effected exclusively to change the domicile of the Company), (ii) any transfer, whether by merger, consolidation or otherwise, in a single transaction or series of related transactions to which the Company is a party, and in which all of the proceeds from such transaction or series of related transactions are received by the Company in cash, of the Company's voting securities to a person or group of affiliated persons (as defined in Rule 13d-5(b) of the Securities Exchange Act of 1934, as amended) if, after such transfer, such person or group of affiliated persons would hold fifty percent (50%) or more of the outstanding voting securities of the Company (excluding any transaction or series of transactions for bona fide equity financing purposes in which cash proceeds are received by the Company or indebtedness of the Company is cancelled or converted or a combination thereof), or (iii) a sale, exclusive license, lease or other disposition of, in a single transaction or series of related transactions, all or substantially all of the assets, technology or intellectual property of the Company and its subsidiaries taken as a whole, or the sale or disposition, whether by merger or otherwise, of one or more subsidiaries of the Company if substantially all of the assets of the Company and its subsidiaries taken as a whole are held by such subsidiary or subsidiaries, except where such sale, exclusive license, lease or disposition is to a wholly-owned subsidiary of the Company.

(c) In any Deemed Liquidation Event, if the consideration to be received is securities of a corporation or other property other than cash, its value will be deemed its fair market value as determined in good faith by the Board on the date such determination is made (taking into account, if applicable, any restrictions on the free marketability of such assets, securities or other property, arising under applicable securities laws or otherwise).

(d) Notwithstanding any other provision set forth in Section 3 or this Section 4, in the event that any consideration payable to the Company or its stockholders in connection with any Deemed Liquidation Event is contingent upon the occurrence of any event or the passage of time (including, without limitation, any deferred purchase price payments, installment payments, payments made in respect of any promissory note issued in such transaction, payments from escrow, purchase price adjustment payments or payments in respect of "earnouts" or holdbacks), (i) such consideration shall not be deemed received by the Company or its stockholders or available for distribution to such stockholders unless and until such consideration is indefeasibly received by the Company or its stockholders in accordance with the terms of such Deemed Liquidation Event, (ii) the portion of such consideration that is not subject to any contingencies (the "***Initial Consideration***") shall be allocated among the holders of capital stock of the Company in accordance with Section 3 as if the Initial Consideration were the only consideration payable in connection with such Deemed Liquidation Event, and (iii) any additional consideration which becomes payable to the stockholders of the Company upon satisfaction of contingencies shall be allocated among the holders of capital stock of the Company in accordance with Section 3 after taking into account the previous payment of the Initial Consideration as part of the same transaction.

5. CONVERSION RIGHTS.

The holders of Series Preferred shall have the following rights with respect to the conversion of such Series Preferred into shares of Common Stock (the "***Conversion Rights***"):

(a) Optional Conversion. Subject to and in compliance with the provisions of this Section 5, each share of Series Preferred may be converted, at the option of the holder thereof, at any time after the issuance of such share and without the payment of additional consideration by the holder thereof, into fully paid and nonassessable shares of Common Stock. The number of shares of Common Stock to which a holder of shares of Series Preferred shall be entitled upon conversion of such shares of Series Preferred shall be the product obtained by multiplying the Series A Conversion Rate, Series B Conversion Rate, Series B-1 Conversion Rate or Series C Conversion Rate, as applicable (each as defined and determined as provided in Section 5(b)), by the number of shares of Series A Preferred Stock, Series B Preferred Stock, Series B-1 Preferred Stock or Series C Preferred Stock, as applicable, being converted.

(b) Conversion Rate. The conversion rate in effect at any time for conversion of shares of Series A Preferred Stock (the "***Series A Conversion Rate***") shall be the quotient obtained by dividing the Series A Original Issue Price by the Series A Conversion Price, calculated as provided in Section 5(c). The conversion rate in effect at any time for conversion of shares of Series B Preferred Stock (the "***Series B Conversion Rate***") shall be the quotient obtained by dividing the Series B Original Issue Price by the Series B Conversion Price, calculated as provided in Section 5(c). The conversion rate in effect at any time for conversion of shares of Series B-1 Preferred Stock (the "***Series B-1 Conversion Rate***") shall be the quotient obtained by dividing the Series B-1 Original Issue Price by the Series B-1 Conversion Price, calculated as provided in Section 5(c). The conversion rate in effect at any time for conversion of shares of Series C Preferred Stock (the "***Series C Conversion Rate***") shall be the quotient obtained by dividing the Series C Original Issue Price by the Series C Conversion Price, calculated as provided in Section 5(c).

(c) Conversion Price. The conversion price for the Series A Preferred Stock shall initially be the Series A Original Issue Price (the "***Series A Conversion Price***"), the conversion price for the Series B Preferred Stock shall initially be the Series B Original Issue Price (the "***Series B Conversion Price***"), the conversion price for the Series B-1 Preferred Stock shall initially be the Series B-1 Original Issue Price (the "***Series B-1 Conversion Price***") and the conversion price for the Series C Preferred Stock shall initially be the Series C Original Issue Price (the "***Series C Conversion Price***"). The Series A Conversion Price, the Series B Conversion Price, the Series B-1 Conversion Price and the Series C Conversion Price, in each case, shall be adjusted from time to time in accordance with this Section 5. All references to "***Conversion Price***" herein shall mean the Series A Conversion Price, the Series B Conversion Price, Series B-1 Conversion Price or the Series C Conversion Price as applicable, in each case as so adjusted.

(d) Mechanics of Conversion.

(i) Conversion into Common Stock. Each holder of shares of Series Preferred who desires to convert the same into shares of Common Stock pursuant to Section 5(a) shall surrender the certificate or certificates therefor, duly endorsed, at the office of the Company or any transfer agent for the Series Preferred, and shall give written notice to the Company at such office that such holder elects to convert the same. Such notice shall state the number of shares of Series Preferred being converted. Thereupon, subject to the restrictions of Section 5(d)(ii) below, the Company shall promptly (i) issue and deliver at such office to such holder a certificate or certificates for the number of shares of Common Stock to which such holder is entitled upon conversion in accordance with the provisions hereof and a certificate for the number (if any) of the shares of Series Preferred represented by the surrendered certificate or certificates that were not converted into Common Stock, (ii) pay all declared but unpaid dividends on the shares of Series Preferred being converted in accordance with Section 1 and all Series C Accruing Dividends accrued and unpaid thereon, whether or not declared, and (iii) pay in cash, at the fair market value of shares of Common Stock determined in good faith by the Board as of the date of conversion, the value of any fractional share of Common Stock otherwise issuable to any holder of shares of the Series Preferred as provided in Section 5(l). Such conversion shall be deemed to have been made at the close of business on the date of such surrender by such holder of the certificate of certificates representing the shares of Series Preferred to be converted, and the person entitled to receive the shares of Common Stock issuable upon such conversion shall be treated for all purposes as the record holder of such shares of Common Stock on such date.

(ii) Payment of Series C Accruing Dividends in Connection with an Initial Public Offering. Notwithstanding anything herein to the contrary, in the event that the Company shall make any payment of Series C Accruing Dividends in connection with the conversion of shares of Series C Preferred Stock into shares of Common Stock in accordance with this Section 5, and if such conversion is conditioned upon and/or effective immediately prior to the occurrence of an Initial Public Offering (as defined below), (i) the payment of any Series C Accruing Dividends in connection with such Initial Public Offering shall be paid in kind, effective immediately prior to the consummation of such Initial Public Offering, in the form of the issuance of shares of Common Stock and not involve the payment of any cash; (ii) the fair market value of each share of Common Stock to be used when determining the number of shares to be issued as a result of such Series C Accruing Dividends shall be as reflected on the cover of the final prospectus filed with the Securities and Exchange Commission in connection with such Initial Public Offering as the price being offered to the public per share of Common Stock; and (iii) no fractional shares shall be issued or cash shall be paid by the Company in connection with the unconverted portion of any Series C Accruing Dividends as a result of the Company rounding down to the nearest whole share.

(e) Adjustment for Stock Splits and Combinations. If at any time or from time to time after the Effective Time the Company effects a subdivision of the outstanding shares of Common Stock without a corresponding subdivision of the

Preferred Stock, then the Conversion Price for each series of Series Preferred in effect immediately before that subdivision shall be proportionately decreased so that the number of shares of Common Stock issuable upon conversion of each share of such series shall be increased in proportion to such increase in the aggregate number of shares of Common Stock outstanding. Conversely, if at any time or from time to time after the Effective Time the Company combines the outstanding shares of Common Stock into a smaller number of shares without a corresponding combination of the Preferred Stock, the Conversion Price for each series of Series Preferred in effect immediately before the combination shall be proportionately increased so that the number of shares of Common Stock issuable upon conversion of each share of such series shall be decreased in proportion to such decrease in the aggregate number of shares of Common Stock outstanding. Any adjustment under this Section 5(ii) shall become effective at the close of business on the date the subdivision or combination becomes effective.

(f) Adjustment for Common Stock Dividends and Distributions. If at any time or from time to time after the Effective Time the Company pays to holders of shares of Common Stock a dividend or other distribution in additional shares of Common Stock without a corresponding dividend or other distribution to holders of Series Preferred, then the Conversion Price for each series of Series Preferred in effect immediately before such event shall be decreased as of the time of such issuance as provided below:

(i) The Conversion Price for each series of Series Preferred shall be adjusted by multiplying the Conversion Price then in effect for such series by a fraction equal to:

(A) the numerator of which is the total number of shares of Common Stock issued and outstanding immediately prior to the time of such issuance, and

(B) the denominator of which is the total number of shares of Common Stock issued and outstanding immediately prior to the time of such issuance plus the number of shares of Common Stock issuable in payment of such dividend or distribution.

(ii) If the Company fixes a record date to determine which holders of shares of Common Stock are entitled to receive such dividend or other distribution, then the Conversion Price shall be fixed as of the close of business on such record date and the number of shares of Common Stock shall be calculated immediately prior to the close of business on such record date; and

(iii) Notwithstanding the foregoing, (A) if such record date is fixed and such dividend is not fully paid or if such distribution is not fully made on the date fixed therefor, then the Conversion Price for each series of Series Preferred shall be recomputed accordingly as of the close of business on such record date and thereafter the Conversion Price shall be adjusted pursuant to this Section 5(f) to reflect the actual payment of such dividend or distribution; and (B) no such adjustment shall be

made if the holders of Series C Preferred Stock, Series B-1 Preferred Stock, Series B Preferred Stock or Series A Preferred Stock, as applicable, simultaneously receive a dividend or other distribution of shares of Common Stock in a number equal to the number of shares of Common Stock as they would have received if all outstanding shares of Series C Preferred Stock, Series B-1 Preferred Stock, Series B Preferred Stock or Series A Preferred Stock, as applicable, had been converted into Common Stock on the date of such event.

(g) Adjustment for Reclassification, Exchange, Substitution, Reorganization, Merger or Consolidation. Subject to the provisions of Section 2(c), if at any time or from time to time after the Effective Time, the shares of Common Stock issuable upon the conversion of the Series Preferred are converted or exchanged into the same or a different number of shares of any class or classes of securities, cash or other property, whether by recapitalization, reclassification, merger, consolidation or otherwise (other than a Deemed Liquidation Event as defined in Section 4 or a subdivision or combination of shares or stock dividend or a reorganization, merger, consolidation or sale of assets provided for elsewhere in this Section 5), in any such event each holder of shares of Series Preferred shall then have the right to convert such shares into the kind and amount of securities, cash or other property receivable upon such recapitalization, reclassification, merger, consolidation or other change by holders of the maximum number of shares of Common Stock into which such shares of Series Preferred could have been converted immediately prior to such recapitalization, reclassification, merger, consolidation or other change, all subject to further adjustment as provided herein or with respect to such other securities or property by the terms thereof. In any such case, appropriate adjustment shall be made in the application of the provisions of this Section 5 with respect to the rights of the holders of shares of Series Preferred after such recapitalization, reclassification, merger, consolidation or other change to the end that the provisions of this Section 5 (including adjustment of the applicable Conversion Price then in effect and the number of shares issuable upon conversion of the shares of Series Preferred) shall be applicable, after that event and as nearly equivalent as practicable, in relation to any securities or other property thereafter deliverable upon conversion of the shares of Series Preferred.

(h) Sale of Shares Below Conversion Price.

(i) If at any time or from time to time after the Effective Time, the Company issues or sells, or is deemed by the express provisions of this Section 5(h) to have issued or sold, Additional Shares of Common Stock (as defined below), other than as provided in Section 5(f) or 5(g) above, without consideration or for an Effective Price (as defined below) less than the Series C Conversion Price in effect immediately prior to such issuance or sale (a "***Qualifying Dilutive Issuance***"), then and in each such case, the Conversion Price for each series of Series Preferred in effect immediately prior to such issuance or sale shall be reduced, as of the opening of business on the date of such issuance or sale, to a price determined by multiplying the Conversion Price for such series of Series Preferred in effect immediately prior to such issuance or sale by a fraction equal to:

(A) the numerator of which shall be (1) the number of shares of Common Stock deemed outstanding (as determined below) immediately prior to such issuance or sale, plus (2) the number of shares of Common Stock that the Aggregate Consideration (as defined below) received by the Company for the total number of Additional Shares of Common Stock so issued would purchase at the Conversion Price in effect immediately prior to such issuance or sale; and

(B) the denominator of which shall be the number of shares of Common Stock deemed outstanding (as determined below) immediately prior to such issue or sale plus the total number of Additional Shares of Common Stock so issued.

For the purposes of the preceding sentence, the number of shares of Common Stock deemed to be outstanding as of a given date shall be the sum of (1) the number of shares of Common Stock outstanding, (2) the number of shares of Common Stock issuable upon conversion of shares of Series Preferred outstanding immediately prior to such issuance or sale, and (3) the number of shares of Common Stock issuable upon exercise, exchange or conversion of all Options and Convertible Securities (each as defined below) outstanding immediately prior to such issuance or sale.

(ii) No adjustment in any Conversion Price shall be made in an amount less than one hundredth (1/100th) of one cent per share. Any adjustment otherwise required by this Section 5(h) that is not required to be made to a Conversion Price due to the preceding sentence shall be included in any subsequent adjustment to such Conversion Price. In addition, no adjustment to the Conversion Price of a series of Series Preferred shall be made if the Effective Price is greater than the Conversion Price of such series in effect immediately prior to such issuance or sale of Additional Shares of Common Stock.

(iii) For the purpose of making any adjustment required under this Section 5(h), the aggregate consideration received by the Company for any issue or sale of securities (the "***Aggregate Consideration***") is defined as: (A) to the extent it consists of cash, it is computed at the net amount of cash received by the Company after deduction of any underwriting or similar commissions, compensation or concessions paid or allowed by the Company in connection with such issue or sale but without deduction of any expenses payable by the Company, (B) to the extent it consists of property other than cash, it is computed at the fair value of that property as determined in good faith by the Board, and (C) if Additional Shares of Common Stock, Convertible Securities or Options are issued or sold together with other stock or securities or other assets of the Company for a consideration that covers both, it is computed as the portion of the consideration so received that may be reasonably determined in good faith by the Board to be allocable to such Additional Shares of Common Stock, Convertible Securities or Options.

(iv) For the purpose of the adjustment required under this Section 5(h), if the Company at any time or from time to time on or after the Effective Time issues or sells, or fixes a record date for the determination of holders of

any class of securities entitled to receive, (A) any Preferred Stock or other stock, evidence of indebtedness, warrants, purchase rights or other securities convertible into or exchangeable for Additional Shares of Common Stock, but excluding Options (such convertible stock or securities being herein referred to as "***Convertible Securities***") or (B) any rights, warrants or options to subscribe for, purchase or otherwise acquire Additional Shares of Common Stock or Convertible Securities (collectively, the "***Options***"), in each case the Company shall be deemed (x) to have issued, at the time of the issuance of such Options or Convertible Securities or, in case such a record date shall have been fixed, as of the close of business on such record date, the maximum number of Additional Shares of Common Stock (as set forth in the instrument relating thereto, assuming the satisfaction of any conditions to exercisability, convertibility or exchangeability but without regard to any provision contained therein for a subsequent adjustment of such number) issuable upon exercise, exchange or conversion thereof and (y) to have received as Aggregate Consideration for the issuance of such shares an amount equal to the total amount of the consideration, if any, received by the Company for the issuance of such Options or Convertible Securities plus:

(A) in the case of Options, the minimum amounts of consideration (as set forth in the instrument relating thereto, without regard to any provision contained therein for a subsequent adjustment of such consideration), if any, payable to the Company upon the exercise of such Options; and

(B) in the case of Convertible Securities, the minimum amounts of consideration (as set forth in the instrument relating thereto, without regard to any provision contained therein for a subsequent adjustment of such consideration), if any, payable to the Company upon the conversion thereof (other than by cancellation of liabilities or obligations evidenced by such Convertible Securities); *provided* that if the minimum amounts of such consideration cannot be ascertained, but are a function of antidilution or similar protective clauses, the Company shall be deemed to have received the minimum amounts of consideration without reference to such clauses.

(v) If the terms of any Option or Convertible Security, the issuance of which resulted in an adjustment to the Conversion Price for any series of Series Preferred pursuant to the terms of Section 5(h)(i) above, are revised as a result of an amendment to such terms or any other adjustment pursuant to the provisions of such Option or Convertible Security to provide for either (1) any increase or decrease in the number of shares of Common Stock issuable upon the exercise, exchange or conversion of any such Option or Convertible Security or (2) any increase or decrease in the consideration payable to the Company upon such exercise, exchange or conversion, then, effective upon such increase or decrease becoming effective, such Conversion Price computed upon the original issue of such Option or Convertible Security (or upon the occurrence of a record date with respect thereto) shall be readjusted to the Conversion Price as would have obtained had such revised terms been in effect upon the original date of issuance of such Option or Convertible Security. Notwithstanding the foregoing, no readjustment pursuant to this clause (v) shall have the effect of increasing the applicable Conversion Price to an amount which exceeds the lower of (i) such applicable

Conversion Price in effect immediately prior to the original adjustment made as a result of the issuance of such Option or Convertible Security, or (ii) the applicable Conversion Price that would have resulted from any issuances of Additional Shares of Common Stock (other than deemed issuances of Additional Shares of Common Stock as a result of the issuance of such Option or Convertible Security) between the original adjustment date and such readjustment date.

(vi) If the terms of any Option or Convertible Security (excluding Options or Convertible Securities which are themselves Exempted Securities (as defined below)), the issuance of which did not result in an adjustment to any applicable Conversion Price pursuant to the terms of Section 5(h)(i) (either because the consideration per share, determined pursuant to Section 5(h)(iv), of the Additional Shares of Common Stock subject thereto was equal to or greater than the applicable Conversion Price then in effect, or because such Option or Convertible Security was issued before the Effective Time), are revised after the Effective Time as a result of an amendment to such terms or any other adjustment pursuant to the provisions of such Option or Convertible Security to provide for either (1) any increase or decrease in the number of shares of Common Stock issuable upon the exercise, exchange or conversion of any such Option or Convertible Security or (2) any increase or decrease in the consideration payable to the Company upon such exercise, exchange or conversion, then such Option or Convertible Security, as so amended or adjusted, and the Additional Shares of Common Stock subject thereto (determined in the manner provided in Section 5(h)(iv)) shall be deemed to have been issued effective upon such increase or decrease becoming effective.

(vii) No further adjustment of any applicable Conversion Price, as adjusted upon the issuance of such Options or Convertible Securities, shall be made as a result of the actual issuance of Additional Shares of Common Stock or the exercise of any such Options or the exchange or conversion of any such Convertible Securities. If any such Options or the conversion privilege represented by any such

Convertible Securities shall expire without having been exercised, the applicable Conversion Price as adjusted upon the issuance of such Options or Convertible Securities shall be readjusted to a Conversion Price that would have been in effect had an adjustment been made on the basis that the only Additional Shares of Common Stock so issued were the Additional Shares of Common Stock, if any, actually issued or sold on the exercise, exchange or conversion of such Options or Convertible Securities, and such Additional Shares of Common Stock, if any, were issued or sold for the consideration actually received by the Company upon such exercise, exchange or conversion, plus the consideration, if any, actually received by the Company for the granting of all such Options, whether or not exercised, plus the consideration received for issuing or selling the Convertible Securities actually exchanged or converted, plus the consideration, if any, actually received by the Company (other than by cancellation of liabilities or obligations evidenced by such Convertible Securities) on the exchange or conversion of such Convertible Securities, *provided* that such readjustment shall not apply to prior conversions of Preferred Stock.

(viii) For the purpose of making any adjustment to a Conversion Price of a series of Series Preferred required under this Section 5(h),

"***Additional Shares of Common Stock***" means all shares of Common Stock issued by the Company or deemed to be issued pursuant to this Section 5(h) (including shares of Common Stock subsequently reacquired or retired by the Company), other than:

(A) shares of Common Stock, Options or Convertible Securities issued upon conversion of the Series Preferred or as a dividend or distribution on the Series Preferred;

(B) shares of Common Stock, Options or Convertible Securities issued after the Effective Time to employees, officers or directors of, or consultants or advisors to, the Company or any subsidiary of the Company pursuant to stock purchase or stock option plans or other arrangements that are approved by the Board;

(C) shares of Common Stock issued upon exercise of Options or shares of Common Stock issued upon conversion or exchange of Convertible Securities, in each case provided that such Options or Convertible Securities are outstanding as of the Effective Time and such issuance is pursuant to the terms of such Options or Convertible Securities;

(D) shares of Common Stock or Convertible Securities issued for consideration other than cash pursuant to a merger, consolidation, acquisition, or similar business combination approved by the Board (including a majority of the Preferred Directors);

(E) shares of Common Stock, Options or Convertible Securities issued pursuant to any equipment loan or leasing arrangement, real property leasing arrangement, credit agreement, debt financing from a bank or similar financial or lending institution or other commercial transactions approved by the Board (including a majority of the Preferred Directors);

(F) shares of Common Stock issued in a registered public offering of Common Stock by the Company; or

(G) shares of Common Stock, Options or Convertible Securities issued by reason of a dividend, stock split, combination or other recapitalization by the Company on shares of Common Stock as provided in Sections 5(d)(ii), (f) and (g) ((A) through (F) above collectively, the "***Exempted Securities***").

References to the Common Stock in the subsections of this clause (viii) above mean all shares of Common Stock issued by the Company or deemed to be issued pursuant to this Section 5(h). The "***Effective Price***" of Additional Shares of Common Stock means the quotient determined by dividing the total number of Additional Shares of Common Stock issued or sold, or deemed to have been issued or sold by the Company under this Section 5(h), into the Aggregate Consideration received, or deemed to have been received by the Company for such issue under this Section 5(h), for such Additional Shares of Common Stock.

(ix) No adjustment in any Conversion Price shall be made as a result of the issuance or deemed issuance of Additional Shares of Common Stock if the Company receives written notice from the Required Holders specifically stating that no such adjustment shall be made as a result of the issuance or deemed issuance of Additional Shares of Common Stock.

(x) If the Company issues or sells, or is deemed to have issued or sold, Additional shares of Common Stock in a Qualifying Dilutive Issuance (the "***First Dilutive Issuance***"), then if the Company issues or sells, or is deemed to have issued or sold, Additional Shares of Common Stock in a Qualifying Dilutive Issuance other than the First Dilutive Issuance as part of one transaction or a series of related transactions (a "***Subsequent Dilutive Issuance***"), then and in each such case upon a Subsequent Dilutive Issuance the Conversion Price of a series of Series Preferred shall be reduced to the Conversion Price that would have been in effect for such series had the First Dilutive Issuance and each Subsequent Dilutive Issuance all occurred on the closing date of the First Dilutive Issuance (and without giving effect to any additional adjustments as a result of any such subsequent issuances within such period).

(i) Certificate of Adjustment. In each case of an adjustment or readjustment of the Conversion Price of a series of Series Preferred for the number of shares of Common Stock or other securities issuable upon conversion of such series of Series Preferred, if the Series Preferred is then convertible pursuant to this Section 5, the Company, at its expense and as promptly as reasonably practicable, shall compute such adjustment or readjustment in accordance with the provisions hereof and prepare a certificate showing such adjustment or readjustment, and shall mail such certificate, by first class mail, postage prepaid, to each registered holder of shares of Series Preferred at the holder's address as shown in the Company's books. The certificate shall set forth such adjustment or readjustment, showing in detail the facts upon which such adjustment or readjustment is based, including a statement of (i) the consideration received or deemed to be received by the Company for any Additional Shares of Common Stock issued or sold or deemed to have been issued or sold, (ii) the Conversion Price at the time in effect for each series of

Series Preferred, (iii) the number of Additional Shares of Common Stock and (iv) the type and amount, if any, of other property that at the time would be received upon conversion of the Series Preferred.

(j) Notices of Record Date. Upon (i) any taking by the Company of a record of the holders of any class of securities for the purpose of determining the holders thereof who are entitled to receive any dividend or other distribution, or (ii) any Deemed Liquidation Event or other capital reorganization of the Company, any reclassification or recapitalization of the capital stock of the Company, any merger or consolidation of the Company with or into any other corporation, or any voluntary or involuntary dissolution, liquidation or winding up of the Company, the Company shall mail to each holder of shares of Series Preferred at least ten (10) days prior to the record date specified therein (or such shorter period approved by the Required Holders) a notice specifying (A) the date on which any such record is to be taken for the purpose of such dividend or distribution and a description of such dividend or distribution, (B) the date on which any such Deemed Liquidation Event, reorganization,

reclassification, transfer, consolidation, merger, dissolution, liquidation or winding up is expected to become effective, and (C) the date, if any, that is to be fixed as to when the holders of record of shares of Common Stock (or other securities) shall be entitled to exchange their shares of Common Stock (or other securities) for securities or other property deliverable upon such Deemed Liquidation Event, reorganization, reclassification, transfer, consolidation, merger, dissolution, liquidation or winding up.

(k) Automatic Conversion.

(i) Each share of Series Preferred shall automatically be converted into shares of Common Stock, based on the Conversion Price then in effect for such series of Series Preferred, immediately upon the closing of the Company's initial firmly underwritten public offering pursuant to an effective registration statement under the Securities Act of 1933, as amended, covering the offer and sale of shares of Common Stock for the account of the Company (an "***Initial Public Offering***") in which (A) the per share price is at least $1.527 (as adjusted for stock splits, stock dividends, stock combinations and similar events after the Effective Time), and (B) the gross cash proceeds to the Company (before underwriting discounts, commissions and fees) are at least $40,000,000 (a "***Qualified IPO***"). In addition, each share of Series Preferred shall automatically be converted into shares of Common Stock, based on the Conversion Price then in effect for such series, at any time upon the affirmative vote or written consent of the Required Holders, voting together as a single class on an as-if-converted basis. The time of the closing of such firmly underwritten public offering or the date and time specified in such vote or written consent shall be referred to herein as the "***Mandatory Conversion Time***." Upon any such automatic conversion, any declared and unpaid dividends on shares of Series Preferred and all Series C Accruing Dividends accrued and unpaid thereon, whether or not declared, shall be paid in accordance with the provisions of Section 5(d).

(ii) Upon the occurrence of either of the events specified in Section 5(k)(i) above, the outstanding shares of Series Preferred shall be converted, at the Mandatory Conversion Time, automatically without any further action by the holders of such shares and whether or not the certificates representing such shares are surrendered to the Company or its transfer agent; *provided* that the Company shall not be obligated to issue certificates evidencing the shares of Common Stock issuable upon such conversion unless the certificates evidencing such shares of Series Preferred are either delivered to the Company or its transfer agent as provided below, or the holder notifies the Company or its transfer agent that such certificates have been lost, stolen or destroyed and executes an agreement satisfactory to the Company to indemnify the Company from any loss incurred by it in connection with such certificates. All holders of record of shares of Series Preferred shall be sent written notice of the Mandatory Conversion Time and the place designated for mandatory conversion of all such shares of Series Preferred pursuant to this Section 5(k). Upon receipt of such notice, the holders of shares of Series Preferred shall surrender the certificates representing such shares at the office of the Company or any transfer agent for the Series Preferred. Thereupon, there shall be issued and delivered to such holder promptly at such office and in its name as shown on such surrendered certificate or certificates, a certificate or certificates for the

number of shares of Common Stock into which the shares of Series Preferred surrendered were convertible on the date on which such automatic conversion occurred, and the Company shall pay such holder (x) in cash such amount as provided in Section 5(l) in lieu of any fraction of a share of Common Stock otherwise issuable upon such conversion and (y) all declared and unpaid dividends on such shares of Series Preferred and all Series C Accruing Dividends accrued and unpaid thereon, whether or not declared.

(l) Fractional Shares. No fractional shares of Common Stock shall be issued upon conversion of shares of Series Preferred. All shares of Common Stock (including fractions thereof) issuable upon conversion of more than one share of Series Preferred by a holder thereof shall be aggregated for purposes of determining whether the conversion would result in the issuance of any fractional share. If, after the aforementioned aggregation, the conversion would result in the issuance of any fractional share, the Company shall, in lieu of issuing any fractional share, pay cash equal to the product of such fraction multiplied by the fair market value of a share of Common Stock as determined in good faith by the Board on the date of conversion.

(m) Reservation of Stock Issuable Upon Conversion. The Company shall at all times reserve and keep available out of its authorized but unissued shares of Common Stock, solely for the purpose of effecting the conversion of the shares of Series Preferred, such number of its shares of Common Stock as shall from time to time be sufficient to effect the conversion of all outstanding shares of Series Preferred. If at any time the number of authorized but unissued shares of Common Stock shall not be sufficient to effect the conversion of all then outstanding shares of Series Preferred, the Company shall take such corporate action as may, in the opinion of its counsel, be necessary to increase its authorized but unissued shares of Common Stock to such number of shares as shall be sufficient for such purpose, including, without limitation, engaging in best efforts to obtain the requisite stockholder approval of any necessary amendment to this Restated Certificate.

(n) Notices. Any notice required by the provisions of this Section 5 shall be in writing and shall be deemed effectively given: (i) upon personal delivery to the party to be notified, (ii) when sent by confirmed electronic mail or facsimile if sent during normal business hours of the recipient; if not, then on the next business day, (iii) three days after having been sent by registered or certified mail, return receipt requested, postage prepaid, or (iv) one day after deposit with a nationally recognized overnight courier, specifying next day delivery, with

verification of receipt. All notices shall be addressed to each holder of record at the address of such holder last shown on the records of the Company.

(o) Payment of Taxes. The Company shall pay all taxes (other than taxes based upon income) and other governmental charges that may be imposed with respect to the issue or delivery of shares of Common Stock upon conversion of shares of Series Preferred, excluding any tax or other charge imposed in connection with any transfer involved in the issue and delivery of shares of Common Stock in a name other than that in which the shares of Series Preferred so converted were registered.

(p) Termination of Conversion Rights. In the event of a notice of redemption of any shares of Series C Preferred Stock or Series B-1 Preferred Stock pursuant to Section 6, the Conversion Rights of the shares designated for redemption shall terminate at the close of business on the last full day preceding the date fixed for redemption, unless the redemption price is not fully paid on such redemption date, in which case the Conversion Rights for such shares shall continue until such price is paid in full. In the event of a Liquidation Event, the Conversion Rights shall, subject to Section 3(e), terminate at the close of business on the last full day preceding the date fixed for the payment of any such amounts distributable on such event to the holders of Preferred Stock.

6. REDEMPTION

(a) Redemption upon Request by Majority Series C Holders. Shares of Series C Preferred Stock shall be redeemed by the Company out of funds legally available therefor at a per share price equal to the Series C Original Issue Price, plus any Series C Accruing Dividends accrued but unpaid thereon, whether or not declared, together with any other dividends declared but unpaid thereon (the "***Series C Redemption Price***"), in three (3) equal annual installments commencing sixty (60) days after receipt by the Company at any time on or after October 22, 2017, of written notice from the holders of at least a majority of then then-outstanding shares of Series C Preferred Stock, voting together as a separate class (the "***Majority Series C Holders***"), requesting redemption of all shares of Series C Preferred Stock (the date of each such installment being referred to as a "***Series C Redemption Date***"). On each Series C Redemption Date, the Company shall redeem on a pro rata basis in accordance with the number of shares of Series C Preferred Stock owned by each holder of Series C Preferred Stock, that number of outstanding shares of Series C Preferred Stock determined by dividing (i) the total number of shares of Series C Preferred Stock outstanding immediately prior to such Series C Redemption Date by (ii) the number of remaining Series C Redemption Dates (including the Series C Redemption Date to which such calculation applies). If the Company does not have sufficient funds legally available to redeem on any Series C Redemption Date all shares of Series C Preferred Stock to be redeemed on such Series C Redemption Date, the Company shall redeem a pro rata portion of each holder's redeemable shares of Series C Preferred Stock out of funds legally available therefor, based on the respective amounts which would otherwise be payable in respect of the shares to be redeemed if the legally available funds were sufficient to redeem all such shares, and shall redeem the remaining shares of Series C Preferred Stock to have been redeemed as soon as practicable after the Company has funds legally available therefor.

(b) Series C Redemption Notice. The Company shall send written notice of the redemption pursuant to Section 6(a) (each a "***Series C Redemption Notice***") to each holder of record of Series C Preferred Stock not less than forty (40) days prior to each Series C Redemption Date. Each Series C Redemption Notice shall state:

(i) the number of shares of Series C Preferred Stock held by the holder that the Company shall redeem on the Series C Redemption Date specified in the Redemption Notice;

(ii) the Series C Redemption Date and the Series C Redemption Price;

(iii) the date on which the holder's right to convert such shares terminates (as determined in accordance with Section 5); and

(iv) that the holder is to surrender to the Company, at the office of the Company or its transfer agent, his, her or its certificate or certificates representing the shares of Series C Preferred Stock to be redeemed.

(c) Redemption upon Event of Default. If an Event of Default (as defined in the Exchange Agreement) occurs prior to the Termination Date (as defined in the Exchange Agreement), the Company shall redeem (i) all shares of Series B-1 Preferred Stock owned by the Office of Governor Economic Development and Tourism (the "***OOGEDT***") as of the Series B-1 Redemption Date (as defined below) at a price per share equal to the greater of (x) three (3) times the Series B-1 Base Liquidation Amount plus any dividends declared but unpaid thereon, (y) three (3) times the Series B-1 Original Issue Price and (z) three (3) times the Fair Market Value (as defined below) of a share of Series B-1 Preferred Stock (the "***Series B-1 Redemption Price***" and together with the Series C Redemption Price, the "***Redemption Price***"), and (ii) all shares of Series C Preferred Stock at a price per share equal to the Series C Redemption Price upon written request from the Majority Series C Holders (the "***Series C Participation Request***"), with a copy thereof to each other holder of Series C Preferred Stock, within ten (10) days after receipt of the Series B-1 Redemption Notice (as defined below) from the Company, in a single payment occurring not more than thirty (30) days after receipt by the Company from the OOGEDT of written notice requesting redemption of all shares of Series B-1 Preferred Stock (the "***Series B-1 Redemption Request***"). Upon receipt of a Series B-1 Redemption Request from the OOGEDT and, if applicable, a Series C Participation Request from the Majority Series C Holders, the Company shall apply all of its assets to any such redemption, and to no other corporate purpose, except to the extent prohibited by Delaware law governing distributions to stockholders. The date of such payment shall be referred to as the "***Series B-1 Redemption Date***." The Series C Redemption Date and the Series B-1 Redemption Date are referred to together as the "***Redemption Date***." If on the Series B-1 Redemption Date Delaware law governing distributions to stockholders prevents the Company from redeeming all shares of Series B-1 Preferred Stock and Series C Preferred Stock to be redeemed, the Company shall ratably redeem the maximum number of shares that it may redeem consistent with such law based on the respective amounts which would otherwise be payable in respect of the shares to be redeemed if the Company were allowed to redeem all such shares, and shall redeem the remaining shares as soon as it may lawfully do so under such law. For purposes of this Section 6(c) only, the "***Fair Market Value***" of a share of Series B-1 Preferred Stock shall be the per share price of the last Company's offer and sale of preferred stock to a third party in a bona fide transaction before the date of the Series B-1 Redemption Request. The rights of the OOGEDT to

redeem shares of Series B-1 Preferred Stock pursuant to this Section 6(c) are personal to the OOGEDT, may not be assigned by the OOGEDT and shall terminate with respect a share of Series B-1 Preferred Stock upon any sale, exchange, transfer, gift, encumbrance, assignment, pledge,

mortgage, hypothecation or other disposition by the OOGEDT of such share of Series B-1 Preferred Stock.

(d) Series B-1 Redemption Notice. The Company shall send written notice of the Series B-1 Redemption Request (each a "***Series B-1 Redemption Notice***") to each holder of record of Series C Preferred Stock within five (5) days after receipt of the Series B-1 Redemption Request from the OOGEDT. Each Series B-1 Redemption Notice shall state:

(i) the number of shares of Series B-1 Preferred Stock held by the OOGEDT and the Series B-1 Redemption Date;

(ii) the number of shares of Series C Preferred Stock held by the holder that the Company shall redeem on the Series B-1 Redemption Date if the Majority Series C Holders so elect and the Series C Redemption Price;

(iii) the date on which the holder's right to convert such shares terminates (as determined in accordance with Section 5); and

(iv) that the holder is to surrender to the Company, at the office of the Company or its transfer agent, his, her or its certificate or certificates representing the shares of Series C Preferred Stock to be redeemed.

(e) Surrender of Certificates; Payment. On or before the applicable Redemption Date, each holder of shares of Series C Preferred Stock or Series B-1 Preferred Stock, as the case may be, to be redeemed on such Redemption Date, unless such holder has exercised his, her or its right to convert such shares as provided in Section 5(a), shall surrender the certificate or certificates representing such shares (or, if such registered holder alleges that such certificate has been lost, stolen or destroyed, an agreement reasonably acceptable to the Company to indemnify the Company against any claim that may be made against the Company on account of the alleged loss, theft or destruction of such certificate) to the Company at the office of the Company or its transfer agent, and thereupon the Redemption Price for such shares shall be payable to the order of the person whose name appears on such certificate or certificates as the owner thereof. In the event less than all of the shares of Series C Preferred Stock or Series B-1 Preferred Stock, as applicable, represented by a certificate are redeemed, a new certificate representing the unredeemed shares of Series C Preferred Stock or Series B-1 Preferred Stock shall promptly be issued to such holder. For the avoidance of doubt, in no event shall a holder of Series C Preferred Stock or Series B-1 Preferred Stock be entitled to receive both their respective Redemption Price pursuant to this Section 6 and their respective Liquidation Preferences pursuant to Section 3, and the right to receive their respective Redemption Price pursuant to this Section 6 shall terminate upon any payment of their respective Liquidation Preferences pursuant to Section 3.

(f) Rights Subsequent to Redemption. If on the applicable Redemption Date the Redemption Price payable upon redemption of the shares of Series C Preferred Stock or Series B-1 Preferred Stock, as the case may be, to be redeemed on

such Redemption Date is paid or tendered for payment or deposited with an independent payment agent so as to be available therefor in a timely manner, then notwithstanding that the certificates evidencing any of the shares of Series C Preferred Stock or Series B-1 Preferred Stock, as applicable, so called for redemption shall not have been surrendered, dividends with respect to such shares of Series C Preferred Stock or Series B-1 Preferred Stock shall cease to accrue after such Redemption Date and all rights with respect to such shares shall forthwith after the Redemption Date terminate, except only the right of the holders to receive the Redemption Price without interest upon surrender of their certificate or certificates therefor. In the event that shares of Series C Preferred Stock or Series B-1 Preferred Stock, as applicable, are not redeemed on a Redemption Date, such shares shall remain outstanding and shall be entitled to all of the rights, preferences and privileges provided herein until redeemed.

7. NO REISSUANCE OF THE SERIES PREFERRED.

No share or shares of Series Preferred acquired by the Company by reason of purchase, redemption, conversion or otherwise shall be reissued, and all such shares shall be retired and cancelled.

8. WAIVER.

Except as otherwise set forth in this Restated Certificate, any of the rights, powers, preferences and other terms of the Preferred Stock set forth herein may be waived on behalf of all holders of Preferred Stock by the affirmative written consent or vote of the Required Holders.

9. NOTICES.

Except as explicitly provided herein, any notice required or permitted by the provisions of this Article Four to be given to a holder of shares of Series Preferred shall be mailed, postage prepaid, to the address last shown on the records of the Company, or given by electronic communication in compliance with the DGCL, and shall be deemed sent upon such mailing or electronic transmission.

ARTICLE FIVE

The business and affairs of the Company shall be managed by and under the direction of the Board.

ARTICLE SIX

Except as otherwise provided in this Restated Certificate, in furtherance and not in limitation of the powers conferred by statute, the Board is expressly authorized to adopt, amend or repeal in any respect any or all of the Bylaws.

ARTICLE SEVEN

Elections of directors need not be by written ballot unless the Bylaws shall so provide.

ARTICLE EIGHT

Meetings of stockholders of the Company may be held within or without the State of Delaware, as the Bylaws may provide. The books of the Company may be kept (subject to any provision of applicable law) outside the State of Delaware at such place or places as may be designated from time to time by the Board or in the Bylaws.

ARTICLE NINE

A director of the Company shall not be personally liable to the Company or its stockholders for monetary damages for breach of fiduciary duty as a director, except for liability (a) for any breach of the director's duty of loyalty to the Company or its stockholders, (b) for acts or omissions not in good faith or which involve intentional misconduct or a knowing violation of law, (c) under Section 174 of the DGCL, or (d) for any transaction from which the director derived an improper personal benefit. If the DGCL is amended to authorize the further elimination or limitation of the liability of directors, then the liability of a director of the Company, in addition to the limitation on personal liability provided in this Restated Certificate, shall be eliminated or limited to the fullest extent permitted by the DGCL as so amended. No amendment to or repeal of this Article Nine shall apply to or have any effect on the liability or alleged liability of any director of the Company for or with respect to any acts or omissions of such director occurring prior to such amendment or repeal.

ARTICLE TEN

To the fullest extent permitted by applicable law, the Company is also authorized to provide indemnification of (and advancement of expenses to) its directors, officers and agents (and any other persons to which Delaware law permits the Company to provide indemnification) through Bylaw provisions, agreements with such directors, officers, agents or other persons, vote of stockholders or disinterested directors, or otherwise, in excess of the indemnification and advancement otherwise permitted by Section 145 of the DGCL, subject only to limits created by applicable Delaware law (statutory or non-statutory), with respect to actions for breach of duty to the Company, its stockholders, and others. Any amendment, repeal or modification of any of the foregoing provisions of this Article Ten shall not adversely affect any right or protection of any director, officer, agent, or other person existing at the time of, or increase the liability of any director, officer or agent of the Company or other person with respect to any acts or omissions of such director, officer, agent or other person occurring prior to, such repeal or modification.

ARTICLE ELEVEN

Subject to the provisions of this Restated Certificate, the Company reserves the right to amend, alter, change, or repeal any provision contained in this Restated Certificate, in the manner now or hereafter prescribed by applicable laws, and all rights conferred upon stockholders in this Restated Certificate are granted subject to this reservation.

ARTICLE TWELVE

The Company renounces, to the fullest extent permitted by law, any interest or expectancy of the Company in, or in being offered an opportunity to participate in, any Excluded

Opportunity. An "***Excluded Opportunity***" is any matter, transaction or interest that is presented to, or acquired, created or developed by, or which otherwise comes into the possession of, (i) any director of the Company who is not an employee of the Company or any of its subsidiaries, or (ii) any holder of Preferred Stock or any partner, member, director, stockholder, employee or agent of any such holder, other than someone who is an employee of the Company or any of its subsidiaries (collectively, "***Covered Persons***"), unless such matter, transaction or interest is presented to, or acquired, created or developed by, or otherwise comes into the possession of, a Covered Person expressly and solely in such Covered Person's capacity as a director of the Company or arising directly from such Covered Person's interest in the Company.

ARTICLE THIRTEEN

Unless the Company consents in writing to the selection of an alternative forum, the Court of Chancery of the State of Delaware shall be the sole and exclusive forum for (a) any derivative action or proceeding brought on behalf of the Company, (b) any action asserting a claim of breach of a fiduciary duty owed by any director or officer of the Company to the Company or the Company's stockholders, (c) any action asserting a claim against the Company arising pursuant to any provision of the DGCL, this Restated Certificate or the Bylaws or (d) any action asserting a claim against the Company governed by the internal affairs doctrine, as applied by the courts of the state of Delaware to corporations organized and existing under the DGCL.

The undersigned, being the duly elected Chief Executive Officer of the Company, for the purpose of amending and restating the Original Certificate, does make this Restated Certificate, hereby declaring and certifying that this is the act and deed of the Company and the facts stated in this Restated Certificate are true, and accordingly has hereunto executed this Restated Certificate as a duly authorized officer of the Company this 21st day of March, 2014.

MIRNA THERAPEUTICS, INC.

/S/ PAUL LAMMERS

Paul Lammers, M.D., M.Sc.

MIRNA THERAPEUTICS, INC.
(a Delaware corporation)

BYLAWS

ARTICLE 1

OFFICES

Section 1.1. Registered Office. The registered office shall be in the City of Wilmington, County of New Castle, State of Delaware.

Section 1.2. Other Offices. The Corporation may also have offices at such other places, either within or without the State of Delaware, as the board of directors may from time to time to determine or as the business of the Corporation may require.

ARTICLE 2

MEETINGS OF STOCKHOLDERS

Section 2.1. Place of Meetings. All meetings of the stockholders shall be held at the office of the Corporation or at such other places as may be fixed from time to time by the board of directors, either within or without the State of Delaware, and stated in the notice of the meeting or in a duly executed waiver of notice of the meeting, or the board of directors, may in its sole discretion, determine that the meeting shall not be held at any place, but may instead be held solely by means of remote communication.

Section 2.2. Annual Meetings. Annual meetings of stockholders, commencing with the year 2008, shall be held at the time and place, if any, to be selected by the board of directors. If the day is a legal holiday, then the meeting shall be held on the next following business day. At the meeting, the stockholders shall elect a board of directors and transact such other business as may properly be brought before the meeting. Each election of directors shall be by written ballot, unless otherwise provided in the Certificate of Incorporation. If authorized by the board of directors, such requirement of a written ballot shall be satisfied by a ballot submitted by electronic transmission, provided, that any such electronic transmission must either set forth or be submitted with information from which it can be determined that the electronic transmission was authorized by the stockholder or proxyholder.

Section 2.3. Notice of Annual Meeting. Notice of the annual meeting stating the place, if any, date, and hour of the meeting shall be given in accordance with Section 2.4 of this Article to each stockholder entitled to vote at such meeting not less than 10 nor more than 60 days before the date of the meeting.

Section 2.4. Manner of Giving Notice; Affidavit of Notice. If mailed, notice to stockholders shall be deemed given when deposited in the United States mail, postage prepaid, directed to the stockholder at his address as it appears on the records of the Corporation. Without limiting the manner by which notice may otherwise be given effectively to stockholders, any notice to stockholders may be given by electronic transmission in the manner provided in

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Section 232 of the Delaware General Corporation Law. An affidavit of the secretary or an assistant secretary or of the transfer agent of the Corporation that the notice has been given shall, in the absence of fraud, be *prima facie* evidence of the facts stated in such affidavit.

Section 2.5. Voting List. The officer who has charge of the stock ledger of the Corporation shall prepare and make, at least 10 days before every meeting of stockholders, a complete list of the stockholders entitled to vote at the meeting, arranged in alphabetical order, and showing the address of each stockholder and the number of shares registered in the name of each stockholder. Such list shall be open to the examination of any stockholder, for any purpose germane to the meeting, during the whole time of the meeting as in the manner provided by law.

Section 2.6. Special Meetings. Special meetings of the stockholders, for any purpose or purposes, unless otherwise prescribed by statute or by the Certificate of Incorporation, may be called by the chairperson of the board, the chief executive officer or the president and shall be called by the chief executive officer, the president or secretary at the request in writing of a majority of the board of directors, or by the holders of ten percent or more of the outstanding shares of stock of the Corporation. Such request shall state the purpose or purposes of the proposed meeting.

Section 2.7. Notice of Special Meetings. Notice of a special meeting stating the place, if any, date, and hour of the meeting and the purpose or purposes for which the meeting is called, shall be given in accordance with Section 2.4 of this Article 2 not less than ten nor more than sixty days before the date of the meeting, to each stockholder entitled to vote at such meeting. Business transacted at any special meeting of the stockholders shall be limited to the purposes stated in the notice.

Section 2.8. Quorum. The holders of a majority of the stock issued and outstanding and entitled to vote at meetings of the stockholders, present in person or represented by proxy, shall constitute a quorum at all meetings of the stockholders for the transaction of business, except as otherwise provided by statute or by the Certificate of Incorporation. If, however, such quorum shall not be present or represented at any meeting of the stockholders, the stockholders entitled to vote at such meeting, present in person or represented by proxy, shall have power to adjourn the meeting from time to time, without notice other than announcement at the meeting, until a quorum shall be present or represented. At such adjourned meeting at which a quorum shall be present or represented, any business may be transacted which might have been transacted at the meeting as originally notified. If the adjournment is for more than 30 days, or if after the adjournment a new record date is fixed for the adjourned meeting, a notice of the adjourned meeting shall be given to each stockholder of record entitled to vote at the meeting.

Section 2.9. Order of Business. At each meeting of the stockholders, one of the following persons, in the order in which they are listed (and in the absence of the first, the next, and so on), shall serve as chairperson of the meeting: chairperson of the board, chief executive officer, president, vice presidents (in the order of their seniority if more than one), and secretary. The order of business at each such meeting shall be as determined by the

chairperson of the meeting. The chairperson of the meeting shall have the right and authority to prescribe such rules, regulations, and procedures and to do all such acts and things as are necessary or desirable for the proper conduct of the meeting, including, without limitation, the establishment of

procedures for the maintenance of order and safety, limitations on the time allotted to questions or comments on the affairs of the Corporation, restrictions on entry to such meeting after the time prescribed for the commencement thereof, and the opening and closing of the voting polls.

Section 2.10. Vote Required. Unless otherwise required by law or provided in the certificate of incorporation or these Bylaws, in all matters to come before the stockholders at any meeting other than the election of directors, the affirmative vote of the majority of shares present in person or represented by proxy at the meeting and entitled to vote on the subject matter shall be the act of the stockholders. Directors shall be elected by a plurality of the votes of the shares present in person or represented by proxy at the meeting and entitled to vote on the election of directors.

Section 2.11. Method of Voting. Unless otherwise provided in the Certificate of Incorporation, each stockholder shall at every meeting of the stockholders be entitled to one vote in person or by proxy for each share of the capital stock having voting power held by such stockholder, but no proxy shall be voted on after three years from its date, unless the proxy provides for a longer period.

Section 2.12. Action by Stockholders Without Meeting. Unless otherwise restricted by the Certificate of Incorporation or these bylaws, any action required or permitted to be taken at any annual or special meeting of the stockholders may be taken without a meeting, without notice and without a prior vote, if a consent or consents in writing or in accordance with Section 228 of the Delaware General Corporation Law, setting forth the action so taken, shall be signed by the holders of outstanding stock having not less than the minimum number of votes that would be necessary to authorize or take such action at a meeting at which all shares entitled to vote thereon were present and voted and shall be delivered to the Corporation by delivery to its registered office in Delaware, its principal place of business or an officer or agent of the Corporation or an officer or agent of the Corporation having custody of the book in which proceedings of meetings of stockholders are recorded. Delivery made to a Corporation's registered office shall be by hand or by certified or registered mail, return receipt requested.

Section 2.13. Presence at Meetings. If authorized by the board of directors in its sole discretion, and subject to such guidelines and procedures as the board of directors may adopt, stockholders and proxyholders not physically present at the meeting of stockholders may by means of remote communication (a) participate in a meeting of stockholders and (b) be deemed present in person and vote at a meeting of stockholders whether such meeting is to be held at a designated place or solely by means of remote communication, provided, that (i) the Corporation shall implement reasonable measures to verify that each person deemed present and permitted to vote at the meeting by means of remote communication is a stockholder or proxyholder, (ii) the Corporation shall implement reasonable measures to provide such stockholders and proxyholders a reasonable opportunity to participate in the meeting and to vote on matters submitted to the stockholders, including an opportunity to read or hear the proceedings of the meeting substantially concurrently with such proceedings, and (iii) if any stockholder or proxyholder votes or takes other action at the meeting by means of remote communication, a record of such vote or other action shall be maintained by the Corporation.

ARTICLE 3

DIRECTORS

Section 3.1. General Powers. The business and affairs of the Corporation shall be managed by or under the direction of the board of directors, which may exercise all such powers of the Corporation and do all such lawful acts and things as are not by law or by the Certificate of Incorporation of the Corporation or by these Bylaws directed or required to be exercised or done by the stockholders.

Section 3.2. Approval of Indebtedness. The Corporation shall not create, incur or assume any indebtedness for borrowed money or capitalized lease obligations, except for trade debt incurred in the ordinary course of business, without the approval of the board of directors.

Section 3.3. Number of Directors. The number of directors constituting the board shall be such number as shall be from time to time specified by resolution of the board of directors; provided, that no director's term shall be shortened by reason of a resolution reducing the number of directors.

Section 3.4. Election, Qualification, and Term of Office of Directors. Directors shall be elected at each annual meeting of stockholders to hold office until the next annual meeting. Directors need not be stockholders unless so required by the Certificate of Incorporation or these Bylaws, which may prescribe other qualifications for directors. Each director, including a director elected to fill a vacancy, shall hold office until his successor is elected and qualified or until his earlier resignation or removal.

Section 3.5. Notification of Nominations. Subject to the rights of the holders of any class or series of stock having a preference over the common stock as to dividends or upon liquidation, nominations for the election of directors may be made by the board of directors or by any stockholder entitled to vote for the election of directors.

Section 3.6. Regular Meetings. Regular meetings of the board of directors may be held without notice at such times and at such places as shall from time to time be determined by the board.

Section 3.7. Special Meetings. Special meetings of the board may be called by the chairperson of the board, the chief executive officer or the president, and shall be called by the chief executive officer, the president or the secretary on the written request of two directors unless the board of directors consists of only one director, in which case special meetings shall be called by the chief executive officer, the president or the secretary on the written request of the sole director.

Section 3.8. Quorum, Majority Vote. At all meetings of the board, a majority of the entire board of directors shall constitute a quorum for the transaction of business and the act of a majority of the directors present at any meeting at which there is a quorum shall be the act of the board of directors,

except as may be otherwise specifically provided by statute or by the Certificate of Incorporation. If a quorum shall not be present at any meeting of the board of

directors, the directors present at such meeting may adjourn the meeting from time to time, without notice other than announcement at the meeting, until a quorum shall be present.

Section 3.9. Action Without Meeting. Unless otherwise restricted by the Certificate of Incorporation or these Bylaws, any action required or permitted to be taken at any meeting of the board of directors or of any committee of the board of directors may be taken without a meeting, if all members of the board or committee, as the case may be, consent to such action in writing, or by electronic transmission and the writing or writings or electronic transmission or transmissions are filed with the minutes of the proceedings of the board or committee. Such filing shall be in paper form if the minutes are maintained in paper form and shall be in electronic form if the minutes are maintained in electronic form. Such consent shall have the same force and effect as a unanimous vote at a meeting, and may be stated as such in any document or instrument filed with the Secretary of State of Delaware.

Section 3.10. Telephone and Other Meetings. Unless otherwise restricted by the Certificate of Incorporation or these Bylaws, members of the board of directors, or any committee designated by the board of directors, may participate in a meeting of the board of directors, or any committee, by means of conference telephone or other communications equipment by means of which all persons participating in the meeting can hear each other, and such participation in a meeting shall constitute presence in person at the meeting.

Section 3.11. Notice of Meetings. Notice of regular meetings of the board of directors or of any adjourned meeting of the board of directors need not be given. Notice of each special meeting of the board shall be mailed to each director, addressed to such director at such director's residence or usual place of business, at least two days before the day on which the meeting is to be held or shall be sent to such director at such place by telegraph or be given personally or by telephone, not later than the day before the meeting is to be held, but notice need not be given to any director who shall, either before or after the meeting, submit a signed waiver of such notice or who shall attend such meeting without protesting, prior to or at its commencement, the lack of notice to such director. Every such notice shall state the time and place but need not state the purpose of the meeting.

Section 3.12. Rules and Regulations. The board of directors may adopt such rules and regulations not inconsistent with the provisions of law, the Certificate of Incorporation of the Corporation, or these Bylaws for the conduct of its meetings and management of the affairs of the Corporation as the board may deem proper.

Section 3.13. Resignations. Any director of the Corporation may at any time resign by giving notice in writing or by electronic transmission to the board of directors, the chairperson of the board, the chief executive officer, the president, or the secretary of the Corporation. Such resignation shall take effect at the time specified in such notice or, if the time be not specified, upon receipt of such notice; and, unless otherwise specified in such notice, the acceptance of such resignation shall not be necessary to make it effective.

Section 3.14. Removal of Directors. Unless otherwise restricted by statute, by the Certificate of Incorporation, or by these Bylaws, any director or the entire board of directors may

be removed, with or without cause, by the holders of a majority of the shares then entitled to vote at an election of directors.

Section 3.15. Vacancies. Subject to the rights of the holders of any class or series of stock having a preference over the common stock of the Corporation as to dividends or upon liquidation, any vacancies on the board of directors resulting from death, resignation, removal, or other cause shall only be filled by the affirmative vote of a majority of the remaining directors then in office, even though less than a quorum of the board of directors, or by a sole remaining director, and newly created directorships resulting from any increase in the number of directors shall be filled by the board of directors, or if not so filled, by the stockholders at the next annual meeting of the stockholders or at a special meeting called for that purpose in accordance with Section 2.6 of Article 2 of these Bylaws. Any director elected in accordance with the preceding sentence of this Section shall hold office for the remainder of the full term of the class of directors in which the new directorship was created or the vacancy occurred and until such successor shall have been elected and qualified.

Section 3.16. Compensation of Directors. Unless otherwise restricted by the Certificate of Incorporation or these Bylaws, the board of directors shall have the authority to fix the compensation of directors. The directors may be paid their expenses, if any, of attendance at each meeting of the board of directors and may be paid a fixed sum for attendance at each meeting of the board of directors or a stated salary as director. No such payment shall preclude any director from serving the Corporation in any other capacity and receiving compensation for such service. Members of special or standing committees may be allowed like compensation for attending committee meetings.

ARTICLE 4

EXECUTIVE AND OTHER COMMITTEES

Section 4.1. Executive Committee. The board of directors may, by resolution adopted by a majority of the entire board, designate annually one or more of its members to constitute members or alternate members of an executive committee, which committee shall have and may exercise, between meetings of the board, all the powers and authority of the board in the management of the business and affairs of the Corporation, including, if such committee is so empowered and authorized by resolution adopted by a majority of the entire board, the power and authority to declare a dividend and to authorize the issuance of stock, and may authorize the seal of the Corporation to be affixed to all papers which may require it, except that the executive committee shall not have such power or authority with reference to:

(a) amending the Certificate of Incorporation of the Corporation;

(b) adopting an agreement of merger or consolidation involving the Corporation;

(c) recommending to the stockholders the sale, lease or exchange of all or substantially all of the property and assets of the Corporation;

(d) recommending to the stockholders a dissolution of the Corporation or a revocation of a dissolution;

(e) adopting, amending, or repealing any Bylaw;

(f) filling vacancies on the board or on any committee of the board, including the executive committee;

(g) fixing the compensation of directors for serving on the board or on any committee of the board, including the executive committee; or

(h) amending or repealing any resolution of the board which by its terms may be amended or repealed only by the board.

Section 4.2. Other Committees. The board of directors may, by resolution adopted by a majority of the entire board, designate from among its members one or more other committees, each of which shall, except as otherwise prescribed by law, have such authority of the board as may be specified in the resolution of the board designating such committee. A majority of all the members of such committee may determine its action and fix the time and place of its meetings, unless the board shall otherwise provide. The board shall have the power at any time to change the membership of, to increase or decrease the membership of, to fill all vacancies in, and to discharge any such committee, or any member of any such committee, either with or without cause.

Section 4.3. Procedure; Meetings; Quorum. Regular meetings of the executive committee or any other committee of the board of directors, of which no notice shall be necessary, may be held at such times and places as shall be fixed by resolution adopted by a majority of the members of such committee. Special meetings of the executive committee or any other committee of the board shall be called at the request of any member of such committee. Notice of each special meeting of the executive committee or any other committee of the board shall be sent by mail, telegraph, or telephone, or be delivered personally to each member of such committee not later than the day before the day on which the meeting is to be held, but notice need not be given to any member who shall, either before or after the meeting, submit a signed waiver of such notice or who shall attend such meeting without protesting, prior to or at its commencement, the lack of such notice to such member. Any special meeting of the executive committee or any other committee of the board shall be a legal meeting without any notice of such meeting having been given, if all the members of such committee shall be present at such meeting. Notice of any adjourned meeting of any committee of the board need not be given. The executive committee or any other committee of the board may adopt such rules and regulations not inconsistent with the provisions of law, the Certificate of Incorporation of the Corporation, or these Bylaws for the conduct of its meetings as the executive committee or any other committee of the board may deem proper. A majority of the executive committee or any other committee of the board shall constitute a quorum for the transaction of business at any meeting, and the vote of a majority of the members of such committee present at any meeting at which a quorum is present shall be the act of such committee. In the absence or disqualification of a member, the remaining members, whether or not a quorum, may fill a vacancy. The executive committee or any other committee of the board of directors shall keep written minutes

of its proceedings, a copy of which is to be filed with the secretary of the Corporation, and shall report on such proceedings to the board.

ARTICLE 5

NOTICES

Section 5.1. Method. Whenever, under the provisions of the statutes or of the Certificate of Incorporation or of these Bylaws, notice is required to be given to any director or stockholder, it shall not be construed to mean personal notice, but such notice may be given in writing, by mail, electronic mail, overnight delivery, facsimile or any other manner provided in Section 232 of the Delaware General Corporation Law, addressed to such director or stockholder, at his mailing address, electronic mail address, or facsimile number as it appears on the records of the Corporation, with postage on such notice prepaid (as applicable), and such notice shall be deemed to be given at the time when the same shall be deposited in the United States mail if sent by mail or when received if sent by electronic mail, overnight delivery, or facsimile. Notice to directors may also be given by telegram.

Section 5.2. Waiver. Whenever any notice is required to be given under the provisions of the statutes or of the Certificate of Incorporation or of these Bylaws, a written waiver of such notice, signed by the person or persons entitled to said notice or waiver by electronic transmission by such person, whether before or after the time stated in such waiver, shall be deemed equivalent to notice.

ARTICLE 6

OFFICERS

Section 6.1. Election, Qualification. The officers of the Corporation shall be chosen by the board of directors and shall be a president and a secretary. The board of directors may also choose a chairperson of the board, a chief executive officer, a chief operating officer, a chief financial officer, one or more vice presidents, a treasurer, one or more assistant secretaries and assistant treasurers and such other officers and agents as it shall deem necessary. Any number of offices may be held by the same person, unless the Certificate of Incorporation or these Bylaws otherwise provide.

Section 6.2. Salary. The salaries of all officers and agents of the Corporation shall be fixed by the board of directors.

Section 6.3. Term, Removal. Each officer shall hold office until such officer’s successor is elected and qualified or until such officer’s earlier resignation or removal. Any officer elected or appointed by the board of directors may be removed at any time by the affirmative vote of a majority of the board of directors. Any vacancy occurring in any office of the Corporation shall be filled by the board of directors.

Section 6.4. Resignation. Subject at all times to the right of removal as provided in Section 6.3 of this Article 6 and to the provisions of any employment agreement, any officer may

resign at any time by giving notice to the board of directors, the chief executive officer, the president, or the secretary of the Corporation. Any such resignation shall take effect at the date of receipt of such notice or at any later date specified provided that the chief executive officer or president or, in the event of the resignation of the chief executive officer or the president, the board of directors may designate an effective date for such resignation which is earlier than the date specified in such notice but which is not earlier than the date of receipt of such notice; and, unless otherwise specified in such notice, the acceptance of such resignation shall not be necessary to make it effective.

Section 6.5. Vacancies. A vacancy in any office because of death, resignation, removal, or any other cause may be filled for the unexpired portion of the term in the manner prescribed in these Bylaws for election to such office.

Section 6.6. Chairperson of the Board. The chairperson of the board, if there be such an officer, shall preside at all meetings of the stockholders and the board of directors and shall perform all duties incident to the office of chairperson of the board and as from time to time may be assigned to him or her by the board of directors. Except as otherwise provided by resolution of the board of directors, the chairperson of the board shall be ex-officio a member of all committees of the board of directors.

Section 6.7. Chief Executive Officer. The chief executive officer, if there be such an officer, shall, subject to the provisions of these Bylaws and to the direction and supervision of the board of directors, (a) have general and active management of the affairs of the Corporation and have general supervision of its officers, agents and employees; (b) in the absence of the chairperson of the board, preside at all meetings of the stockholders and the board of directors; (c) have primary responsibility for the implementation of the policies adopted from time to time by the board of directors; and (d) perform those other duties incident to the office of chief executive officer and as from time to time may be assigned to him or her by the board of directors.

Section 6.8. President. The president shall, subject to the provisions of these bylaws and to the direction and supervision of the board of directors, perform all duties incident to the office of president and as from time to time may be assigned to him or her by the board of directors. At the request of the chief executive officer or in the absence of the chief executive officer and the chairperson of the board, in the event of their inability or refusal to act, the president shall perform the duties of the chief executive officer, and when so acting shall have all the powers and be subject to all restrictions of the chief executive officer.

Section 6.9. Chief Operating Officer. The chief operating officer, if there be such an officer, shall, subject to the provisions of these Bylaws and to the direction and supervision of the board of directors and the chief executive officer, supervise the day to day operations of the Corporation and perform those other duties incident to the office of chief operating officer and as from time to time may be assigned to him or her by the board of directors or the chief executive officer.

Section 6.10. Chief Financial Officer. The chief financial officer, if there be such an officer, shall, subject to the provisions of these Bylaws and to the direction and supervision of

the board of directors and the chief executive officer, manage the financial affairs of the Corporation and perform those other duties incident to the office of chief financial officer and as from time to time may be assigned to him or her by the board of directors or the chief executive officer. If there is no chief financial officer, these duties shall be performed by the treasurer or such other person designated by the board of directors to perform such duties.

Section 6.11. Vice Presidents. Each vice president, including each executive vice president and each senior vice president, if there be such an officer (or if there is more than one, then each vice president), shall perform such duties as from time to time may be assigned to him or her by the board of directors, the chief executive officer or the president. In the absence of the chief executive officer, the president and the chairman of the board or, in the event of their inability or refusal to act, the vice president, if there be such an officer (or in the event there be more than one vice president, the vice presidents in the order designated by the directors, or, in the absence of any designation, then in the order of their election), shall perform the duties of the president and, when so acting, shall have all the powers of and be subject to all the restrictions upon the president. The vice presidents shall perform such other duties and have such other powers as the board of directors may from time to time prescribe.

Section 6.12. Secretary. The secretary shall attend all meetings of the board of directors and all meetings of the stockholders and record all the proceedings of the meetings of the Corporation and of the board of directors in a book to be kept for that purpose and shall perform like duties for the standing committees when required. He shall give, or cause to be given, notice of all meetings of the stockholders and special meetings of the board of directors, and shall perform such other duties as may be prescribed by the board of directors or president, under whose supervision he shall be. He shall have custody of the corporate seal of the Corporation and he, or an assistant secretary, shall have authority to affix the same to any instrument requiring it and when so affixed, it may be attested by his signature or by the signature of such assistant secretary. The board of directors may give general authority to any other officer to affix the seal of the Corporation and to attest the affixing by his signature.

Section 6.13. Assistant Secretary. The assistant secretary, or if there be more than one, the assistant secretaries in the order determined by the board of directors (or if there be no such determination, then in the order of their election) shall, in the absence of the secretary or in the event of his inability or refusal to act, perform the duties and exercise the powers of the secretary and shall perform such other duties and have such other powers as the board of directors may from time to time prescribe.

Section 6.14. Treasurer. The treasurer, if there be such an officer, shall have the custody of the corporate funds and securities and shall keep full and accurate accounts of receipts and disbursements in books belonging to the Corporation and shall deposit all moneys and other valuable effects in the name and to the credit of the Corporation in such depositories as may be designated by the board of directors. He shall disburse the funds of the Corporation as may be ordered by the board of directors, taking proper vouchers for such disbursements, and shall render to the president and the board of directors, at its regular meetings, or when the board of directors so requires, an account of all his transactions as treasurer and of the financial condition of the Corporation. If

required by the board of directors, he shall give the Corporation a bond in such sum and with such surety or sureties as shall be satisfactory to the board of directors for the

faithful performance of the duties of his office and for the restoration to the Corporation, in case of his death, resignation, retirement, or removal from office, of all books, papers, vouchers, money, and other property of whatever kind in his possession or under his control belonging to the Corporation. If there is not a treasurer of the Corporation, then the duties set forth above shall be discharged by the President or such other officer as shall be designated by the board of directors.

Section 6.15. Assistant Treasurer. The assistant treasurer, or if there shall be more than one, the assistant treasurers in the order determined by the board of directors (or if there be no such determination, then in the order of their election), shall, in the absence of the treasurer or in the event of his inability or refusal to act, perform the duties and exercise the powers of the treasurer and shall perform such other duties and have such other powers as the board of directors may from time to time prescribe.

ARTICLE 7

INDEMNIFICATION OF DIRECTORS, OFFICERS, EMPLOYEES, AND AGENTS

Section 7.1. Third-Party Actions. The Corporation shall indemnify any person who was or is a party or is threatened to be made a party to any threatened, pending, or completed action, suit, or proceeding, whether civil, criminal, administrative, or investigative (other than an action by or in the right of the Corporation) by reason of the fact that such person is or was a director or officer of the Corporation, or is or was serving at the request of the Corporation as a director or officer of another corporation, partnership, joint venture, trust, or other enterprise, against all expenses (including attorney's fees), judgments, fines, and amounts paid in settlement actually and reasonably incurred by such person in connection with such action, suit, or proceeding if such person acted in good faith and in a manner such person reasonably believed to be in or not opposed to the best interests of the Corporation, and, with respect to any criminal action or proceeding, had no reasonable cause to believe his or her conduct was unlawful. The termination of any action, suit, or proceeding by judgment, order, settlement, conviction, or upon a plea of nolo contendere or its equivalent, shall not, of itself, create a presumption that the person did not act in good faith and in a manner which such person reasonably believed to be in or not opposed to the best interests of the Corporation, and, with respect to any criminal action or proceeding, that such person had reasonable cause to believe that his or her conduct was unlawful.

The Corporation may indemnify any employee or agent of the Corporation, or any employee or agent serving at the request of the Corporation as an employee or agent of another corporation, partnership, joint venture, trust, or other enterprise, in the manner and to the extent that it shall indemnify any director or officer under this Section.

Section 7.2. Derivative Actions. The Corporation may indemnify any person who was or is a party or is threatened to be made a party to any threatened, pending, or completed action or suit by or in the right of the Corporation to procure a judgment in its favor by reason of the fact that such person is or was a director, officer, employee, or agent of the Corporation, or is or was serving at the request of the Corporation as a director, officer, employee, or agent of another

corporation, partnership, joint venture, trust, or other enterprise, against all expenses (including attorneys' fees) actually and reasonably incurred by such person in connection with the defense or settlement of such action or suit if such person acted in good faith and in a manner such person reasonably believed to be in or not opposed to the best interests of the Corporation, except that no indemnification shall be made with respect to any claim, issue or matter as to which such person shall have been adjudged to be liable for negligence or misconduct in the performance of such person's duty to the Corporation unless and only to the extent that the Court of Chancery of Delaware or the court in which such action or suit was brought shall determine upon application that, despite the adjudication of liability but in view of all the circumstances of the case, such person is fairly and reasonably entitled to indemnity for such expenses which the Court of Chancery of Delaware or such other court shall deem proper.

Section 7.3. Determination of Indemnification. Any indemnification under Section 7.1 or Section 7.2 of this Article (unless ordered by a court) shall be made by the Corporation only as authorized in the specific case upon a determination that indemnification of the director, officer, employee, or agent is proper in the circumstances because such person has met the applicable standard of conduct set forth in Section 7.1 or Section 7.2 of this Article. Such determination shall be made (a) by the board of directors by a majority vote of a quorum consisting of directors who were not parties to such action, suit, or proceeding, or (b) if such a quorum is not obtainable, or, even if obtainable, a quorum of disinterested directors so directs, by independent legal counsel in a written opinion, or (c) by the stockholders.

Section 7.4. Right to Indemnification. Notwithstanding the other provisions of this Article, to the extent that a director, officer, employee, or agent of the Corporation has been successful on the merits or otherwise in defense of any action, suit, or proceeding referred to in Section 7.1 or Section 7.2 of this Article, or in defense of any claim, issue, or matter in any such claim or issue, such person shall be indemnified against expenses (including attorneys' fees) actually and reasonably incurred by such person in connection with such defense.

Section 7.5. Advance of Expenses. Expenses incurred in defending a civil or criminal action, suit, or proceeding may be paid by the Corporation on behalf of a director, officer, employee, or agent in advance of the final disposition of such action, suit, or proceeding as authorized by the board of directors in the specific case upon receipt of an undertaking by or on behalf of the director, officer, employee, or agent to repay such amount unless it shall ultimately be determined that such person is entitled to be indemnified by the Corporation as authorized in this Article.

Section 7.6. Indemnification Not Exclusive. The indemnification provided by this Article shall not be deemed exclusive of any other rights to which any person seeking indemnification may be entitled under any law, agreement, vote of stockholders or disinterested directors, or otherwise, both as to action in such person's official capacity and as to action in another capacity while holding such office, and shall continue as to a person who has ceased to be a director, officer, employee, or agent and shall inure to the benefit of the heirs, executors, and administrators of such a person.

Section 7.7. Insurance. The Corporation may purchase and maintain insurance on behalf of any person who is or was a director, officer, employee, or agent of the Corporation, or

is or was serving at the request of the Corporation as a director, officer, employee, or agent of another corporation, partnership, joint venture, trust, or other enterprise against any liability asserted against such person and incurred by such person in any such capacity, or arising out of such person's status as such, whether or not the Corporation would have the power to indemnify such person against liability under the provisions of this Article.

Section 7.8. Definitions of Certain Terms. For purposes of this Article, references to "the Corporation" shall include, in addition to the resulting corporation, any constituent corporation (including any constituent of a constituent) absorbed in a consolidation or merger which, if its separate existence had continued, would have had power and authority to indemnify its directors, officers, employees, or agents, so that any person who is or was a director, officer, employee, or agent of such constituent corporation, or is or was serving at the request of such constituent corporation as a director, officer, employee, or agent of another corporation, partnership, joint venture, trust, or other enterprise, shall stand in the same position under the provisions of this Article with respect to the resulting or surviving corporation as such person would have with respect to such constituent corporation if its separate existence had continued.

For purposes of this Article, references to "other enterprises" shall include employee benefit plans; references to "fines" shall include any excise taxes assessed on a person with respect to an employee benefit plan; references to "serving at the request of the Corporation" shall include any service as a director, officer, employee, or agent of the Corporation which imposes duties on, or involves services by, such director, officer, employee, or agent with respect to an employee benefit plan, its participants, or beneficiaries; and a person who acted in good faith and in a manner such person reasonably believed to be in the interest of the participants and beneficiaries of an employee benefit plan shall be deemed to have acted in a manner "not opposed to the best interests of the Corporation" as referred to in this Article.

Section 7.9. Liability of Directors. Notwithstanding any provision of the Certificate of Incorporation or any other provision in these Bylaws, no director shall be personally liable to the Corporation or any stockholder for monetary damages for breach of fiduciary duty as a director, except for any matter in respect of which such director shall be liable under Section 174 of Title 8 of the Delaware Code (relating to the Delaware General Corporation Law) or any amendment or successor provision to such provision or shall be liable by reason that, in addition to any and all other requirements for such liability, he (a) shall have breached his duty of loyalty to the Corporation or its stockholders, (b) shall not have acted in good faith, (c) shall have acted in a manner involving intentional misconduct or a knowing violation of law or, in failing to act, shall have acted in a manner involving intentional misconduct or a knowing violation of law or (d) shall have derived an improper personal benefit.

ARTICLE 8

CERTIFICATES OF STOCK

Section 8.1. Certificates. Every holder of stock in the Corporation shall be entitled to have a certificate, signed by, or in the name of the Corporation by, the chairman or vice chairman of the board of directors, or the president or a vice president and the treasurer or an assistant

treasurer, or the secretary or an assistant secretary of the Corporation, certifying the number of shares owned by him in the Corporation.

Section 8.2. Facsimile Signatures. Any of or all the signatures on the certificate may be facsimile. In case any officer, transfer agent, or registrar who has signed or whose facsimile signature has been placed upon a certificate shall have ceased to be such officer, transfer agent, or registrar before such certificate is issued, it may be issued by the Corporation with the same effect as if he were such officer, transfer agent, or registrar at the date of issue.

Section 8.3. Lost Certificates. The board of directors may direct a new certificate or certificates to be issued in place of any certificate or certificates previously issued by the Corporation alleged to have been lost, stolen, or destroyed, upon the making of an affidavit of that fact by the person claiming the certificate of stock to be lost, stolen, or destroyed. When authorizing such issue of a new certificate or certificates, the board of directors may, in its discretion and as a condition precedent to the issuance of such new certificate or certificates, require the owner of such lost, stolen, or destroyed certificate or certificates, or his legal representative, to advertise the same in such manner as it shall require and/or to give the Corporation a bond in such sum as it may direct as indemnity against any claim that may be made against the Corporation with respect to the certificate alleged to have been lost, stolen, or destroyed.

Section 8.4. Transfers of Stock. Upon surrender to the Corporation or the transfer agent of the Corporation of a certificate for shares duly endorsed or accompanied by proper evidence of succession, assignment, or authority to transfer, it shall be the duty of the Corporation to issue a new certificate to the person entitled to such certificate, cancel the old certificate and record the transaction upon its books.

Section 8.5. Fixing Record Date. In order that the Corporation may determine the stockholders entitled to notice of or to vote at any meeting of stockholders or any adjournment of any meeting of stockholders, or to express consent to corporate action in writing without a meeting, or to receive payment of any dividend or other distribution or allotment of any rights, or to exercise any rights in respect of any change, conversion, or exchange of stock or for the purpose of any other lawful action, the board of directors may fix, in advance, a record date, which shall not be more than 60 nor less than 10 days before the date of such meeting, nor more than 60 days prior to any other action. A determination of stockholders of record entitled to notice of or to vote at a meeting of stockholders shall apply to any adjournment of the meeting; provided, that the board of directors may fix a new record date for the adjourned meeting.

Section 8.6. Registered Stockholders. The Corporation shall be entitled to recognize the exclusive right of a person registered on its books as the owner of shares to receive dividends, and to vote as such owner, and to hold liable for calls and assessments a person registered on its books as the owner of shares, and shall not be bound to recognize any equitable or other claim to or interest in such share or shares on the part of any other person, whether or not it shall have express or other notice of such claim or interest, except as otherwise provided by the laws of Delaware.

ARTICLE 9

AFFILIATED TRANSACTIONS

Section 9.1. Validity. Except as otherwise provided for in the Certificate of Incorporation and except as otherwise provided in these Bylaws, if Section 9.2 is satisfied, no contract or transaction between the Corporation and any of its directors, officers, or security holders, or any corporation, partnership, association, or other organization in which any of such directors, officers, or security holders are directly or indirectly financially interested, shall be void or voidable solely because of this relationship, or solely because of the presence of the director, officer, or security holder at the meeting authorizing the contract or transaction, or solely because of his or their participation in the authorization of such contract or transaction or vote at the meeting for authorization of such contract or transaction, whether or not such participation or vote was necessary for the authorization of such contract or transaction.

Section 9.2. Disclosure; Approval; Fairness. Section 9.1 shall apply only if:

(a) the material facts as to the relationship or interest and as to the contract or transaction are disclosed or are known:

(i) to the board of directors (or committee of the board of directors) and it nevertheless in good faith authorizes or ratifies the contract or transaction by a majority of the directors present, each such interested director to be counted in determining whether a quorum is present but not in calculating the majority necessary to carry the vote; or

(ii) to the stockholders and they nevertheless authorize or ratify the contract or transaction by a majority of the shares present at a meeting considering such contract or transaction, each such interested person (stockholder) to be counted in determining whether a quorum is present and for voting purposes; or

(b) the contract or transaction is fair to the Corporation as of the time it is authorized or ratified by the board of directors (or committee of the board of directors) or the stockholders.

Section 9.3. Nonexclusive. This provision shall not be construed to invalidate a contract or transaction which would be valid in the absence of this provision.

ARTICLE 10

GENERAL PROVISIONS

Section 10.1. Dividends. Dividends upon the capital stock of the Corporation, subject to the provisions of the Certificate of Incorporation, if any, may be declared by the board of directors at any regular or special meeting, pursuant to law. Dividends may be paid in cash, in

property, or in shares of the capital stock, subject to the provisions of the Certificate of Incorporation.

Section 10.2. Reserves. Before payment of any dividend, there may be set aside out of any funds of the Corporation available for dividends such sum or sums as the directors from time to time, in their absolute discretion, think proper as a reserve or reserves to meet contingencies, or for equalizing dividends, or for repairing or maintaining any property of the Corporation, or for such other purpose as the directors shall think conducive to the interest of the Corporation, and the directors may modify or abolish any such reserve in the manner in which it was created.

Section 10.3. Checks. All checks or demands for money and notes of the Corporation shall be signed by such officer or officers or such other person or persons as the board of directors may from time to time designate.

Section 10.4. Fiscal Year. The fiscal year of the Corporation shall be fixed by resolution of the board of directors.

Section 10.5. Seal. The board of directors may adopt a corporate seal having inscribed on such seal the name of the Corporation, the year of its organization, and the words “Corporate Seal, Delaware.” The seal may be used by causing it or a facsimile of it to be impressed or affixed or reproduced or otherwise.

ARTICLE 11

AMENDMENTS

Section 11.1. Amendments. These Bylaws may be altered, amended, or repealed or new Bylaws may be adopted by a majority of the entire board of directors, at any meeting of the board of directors if notice of such alteration, amendment, repeal, or adoption of new Bylaws be contained in the notice of such meeting. The stockholders of the Corporation shall have the power to adopt, amend, or repeal any provisions of the Bylaws only to the extent and in the manner provided in the Certificate of Incorporation of the Corporation.

ARTICLE 12

ADVISORY COMMITTEES

Section 12.1. Advisory Committees. The board of directors may, in its discretion, establish one or more technical, strategic or scientific advisory committees and appoint one or more persons as members of such advisory committees to serve in such capacity at the pleasure of the board. Each member of an advisory committee shall be entitled to receive such amounts as may be fixed from time to time by the board of directors as compensation for attending committee meetings and may be reimbursed for all reasonable expenses in attending and returning from any committee meeting. No advisory committee may

set policy or be part of the corporate governance of the Corporation, and no advisory committee member may be responsible for the implementation of strategies or, in his or her capacity as a member of such

committee, be involved in the management of the Corporation. Subject to the foregoing restrictions, the board may adopt a charter or other governing documents of any advisory board.

Exhibit 4.3

MIRNA THERAPEUTICS, INC.

SECOND AMENDED AND RESTATED INVESTOR RIGHTS AGREEMENT

THIS SECOND AMENDED AND RESTATED INVESTOR RIGHTS AGREEMENT (this "***Agreement***") is entered into as of this 22nd day of October, 2012, by and among **MIRNA THERAPEUTICS, INC**., a Delaware corporation (the "***Company***"), and each of the persons and entities listed on **Exhibit A** hereto (the ***"Investors***" and each individually an "***Investor***").

RECITALS

WHEREAS, certain of the Investors and the Company have previously entered into that certain Amended and Restated Investor Rights Agreement dated as of August 10, 2011 (the "***Prior Agreement***");

WHEREAS, the Prior Agreement may be amended, and any provision therein waived, with the written consent of the Company and certain Holders (as defined in the Prior Agreement) pursuant to Section 5.5 of the Prior Agreement;

WHEREAS, on the date of this Agreement, certain of the Investors (the "***Series C Purchasers***") are purchasing, severally and not jointly, shares of the Company's Series C Preferred Stock, par value $0.001 per share (the "***Series C Preferred Stock***"), pursuant to that certain Series C Preferred Stock Purchase Agreement dated as of the date hereof (the "***Purchase Agreement***"), by and among the Company and the Series C Purchasers (the "***Series C Financing***");

WHEREAS, the obligations of the Company and the Investors in the Purchase Agreement are conditioned upon the execution and delivery of this Agreement; and

WHEREAS, in connection with the consummation of the Series C Financing, the Company and the Investors have agreed to the registration rights, information rights, and other rights with respect to the Preferred Stock (as defined below) held by the Investors as set forth below and have agreed to amend and restate the Prior Agreement as set forth herein;

Now, THEREFORE, in consideration of these premises and for other good and valid consideration, the receipt and sufficiency of which are hereby acknowledged, the Company and the Investors who constitute the requisite parties necessary to amend the Prior Agreement hereby agree that the Prior Agreement shall be amended and restated in its entirety by this Agreement, and the parties hereto further agree as follows:

AGREEMENT

SECTION 1. DEFINITIONS.

As used in this Agreement the following terms shall have the following respective meanings:

(a) "***Affiliate***" means, with respect to any specified person, any other person who or which, directly or indirectly, controls, is controlled by, or is under common control with such specified person, including without limitation any partner, officer, director, manager or employee of such person and any venture capital or private equity fund now or hereafter existing that is controlled by or under common control with one or more general partners or managing members of, or shares the same management company with, such person.

(b) "***Common Stock***" means common stock, par value $0.001 per share, of the Company.

(c) "***Exchange Act***" means the Securities Exchange Act of 1934, as amended.

(d) "***Form S-3***" means such form under the Securities Act as in effect on the date hereof or any successor or similar registration form under the Securities Act subsequently adopted by the SEC which permits inclusion or incorporation of substantial information by reference to other documents filed by the Company with the SEC.

(e) "***GAAP***" means generally accepted accounting principles in the United States.

(f) "***Holder***" means any person owning of record Registrable Securities that have not been sold to the public or any assignee of record of such Registrable Securities in accordance with Section 2.9 hereof.

(g) "***Initial Offering***" means the Company's first firm commitment underwritten public offering of its Common Stock registered under the Securities Act.

(h) "***Investment Company Act***" means the Investment Company Act of 1940, as amended.

(i) "***NEA***" means New Enterprise Associates 14, L.P., NEA Ventures 2012, Limited Partnership and their respective Affiliates.

(j) "***Pfize***r" means Pfizer Inc. and its Affiliates.

(k) "***Preferred Directors***" has the meaning set forth in the Restated Certificate.

(l) "***Preferred Stock***" means, collectively, the Series A Preferred Stock, the Series B Preferred Stock, the Series B-1 Preferred Stock and the Series C Preferred Stock.

(m) "***Register***," "***registered***," and "***registration***" refer to a registration effected by preparing and filing a registration statement in compliance with the Securities Act, and the declaration or ordering of effectiveness of such registration statement or document.

(n) "***Registrable Securities***" means (a) Common Stock of the Company issuable or issued upon conversion of the Preferred Stock, (b) Common Stock of the Company held by the Investors (other than shares of Common Stock of the Company issued or issuable

upon exercise of options or other awards granted pursuant to stock purchase or stock option plans or other similar incentive plans or arrangements), (c) Common Stock of the Company held by a transferee or assignee of Registrable Securities who has agreed in writing to be bound by the terms of this Agreement under Section 2.9, and (d) any Common Stock of the Company issued as (or issuable upon the conversion or exercise of any warrant, right or other security which is issued as) a dividend or other distribution with respect to, or in exchange for or in replacement of, such above-described securities (other than shares of Common Stock of the Company issued or issuable upon exercise of options or other awards granted pursuant to stock purchase or stock option plans or other similar incentive plans or arrangements). Notwithstanding the foregoing, Registrable Securities shall not include any securities (i) sold by a person to the public either pursuant to a registration statement or Rule 144, (ii) sold in a private transaction in which the transferor's rights under Section 2 of this Agreement are not assigned or (iii) held by a Holder (together with its Affiliates) if, as reflected on the Company's list of stockholders, such Holder (together with its Affiliates) holds less than 1% of the Company's outstanding Common Stock (treating all shares of Preferred Stock on an as-converted basis), the Company has completed its Initial Offering and all shares of Common Stock of the Company issuable or issued upon conversion of the Shares held by and issuable to such Holder (and its Affiliates) may be sold pursuant to Rule 144 without limitation during any ninety (90) day period. A Holder of Registrable Securities need not convert such Registrable Securities into Common Stock prior to requesting registration hereunder but may make such request in contemplation of conversion of such Registrable Securities into Common Stock prior to the effectiveness of such registration.

(o) "***Registrable Securities then outstanding***" shall be the number of shares of the Company's Common Stock that are Registrable Securities and either (a) are then issued and outstanding or (b) are issuable pursuant to then exercisable or convertible securities.

(p) "***Registration Expenses***" shall mean all expenses incurred by the Company in complying with Sections 2.1, 2.2 and 2.3 hereof, including, without limitation, all registration and filing fees, printing and accounting expenses, fees and disbursements of counsel for the Company, reasonable fees and disbursements of a single special counsel for the selling Holders, blue- sky fees and expenses and the expense of any special audits incident to or required by any such registration (but excluding the compensation of regular employees of the Company which shall be paid in any event by the Company).

(q) "***Required Holders***" means the Investors holding at least a majority of the then outstanding shares of Preferred Stock.

(r) "***Restated Certificate***" means the Fourth Amended and Restated Certificate of Incorporation of the Company, as amended from time to time.

(s) "***Right of First Refusal Agreement***" means the Second Amended and Restated Right of First Refusal and Co-Sale Agreement of even date herewith by and among the Company, the Investors and certain other parties named therein.

(t) "***SEC***" or "***Commission***" means the Securities and Exchange Commission.

(u) "***Securities Act***" shall mean the Securities Act of 1933, as amended.

(v) "***Selling Expenses***" shall mean all underwriting discounts and selling commissions applicable to the sale of Registrable Securities.

(w) "***Series A Preferred Stock***" shall mean Series A preferred stock, par value $0.001 per share, of the Company.

(x) "***Series B Preferred Stock***" shall mean Series B preferred stock, par value $0.001 per share, of the Company.

(y) "***Series B-1 Preferred Stock***" shall mean Series B-1 preferred stock, par value $0.001 per share, of the Company.

(z) "***Shares***" shall mean the Preferred Stock held by the Investors listed on **Exhibit A** hereto and their permitted assigns.

(aa) "***Sofinnov***a" shall mean Sofinnova Venture Partners VIII, L.P. and its Affiliates.

(bb) "***Special Registration Statement***" shall mean (i) a registration statement relating to any employee benefit plan, (ii) a registration statement with respect to any corporate reorganization or transaction under Rule 145 of the Securities Act, including any registration statements related to the issuance or resale of securities issued in such a transaction, or (iii) a registration statement in which the only Common Stock being registered is Common Stock issued upon conversion of debt securities that are also being registered

(cc) "***Transfer***" shall mean any direct or indirect sale, transfer, assignment, exchange, pledge, hypothecation, mortgage or grant of a proxy, or any other encumbrance or disposition of an interest.

SECTION 2. REGISTRATION.

2.1 Demand Registration.

(a) Subject to the conditions of this Section 2.1, if the Company shall receive a written request from the Required Holders (for purposes of this Section 2.1, the "***Initiating Holders***") that the Company file a registration statement under the Securities Act covering the registration of at least twenty percent (20%) of shares of the Common Stock issuable or issued upon conversion of the Preferred Stock (the "***Preferred Stock Registrable***

Securities"), then the Company shall, within fifteen (15) days after the receipt thereof, give written notice of such request to all Holders, and subject to the limitations of this Section 2.1, shall, as expeditiously as possible and in any event within sixty (60) days after receipt of the request from the Initiating Holders, file a registration statement under the Securities Act of all Registrable Securities that the Initiating Holders requested to be registered and any additional Registrable Securities that all other Holders request to be registered, as specified by notice given by each such other Holder to the Company within twenty (20) days after the date that the written notice by the Company referred to above is given.

(b) Notwithstanding the foregoing obligations, if the Company furnishes to the Initiating Holders a certificate signed by the Company's chief executive officer stating that in the good faith judgment of the Company's board of directors (the "***Board***") it would be materially detrimental to the Company and its stockholders for such registration statement to either become effective or remain effective for as long as such registration statement otherwise would be required to remain effective, because such action would (i) materially interfere with a significant acquisition, corporate reorganization, or other similar transaction involving the Company; (ii) require premature disclosure of material information that the Company has a bona fide business purpose for preserving as confidential or (iii) render the Company unable to comply with requirements under the Securities Act or Exchange Act, then the Company shall have the right to defer taking action with respect to such filing, and any time periods with respect to filing or effectiveness thereof shall be tolled correspondingly, for a period of not more than ninety (90) days after the request of the Initiating Holders is given; *provided*, *however*, that the Company may not invoke this right more than once in any twelve (12) month period; and *provided*, *further*, that the Company shall not register any securities for its own account or that of any other stockholder during such ninety (90) day period other than pursuant to a Special Registration Statement.

(c) If the Initiating Holders intend to distribute the Preferred Stock Registrable Securities covered by their request by means of an underwriting, they shall so advise the Company as a part of their request made pursuant to this Section 2.1 or any request pursuant to Section 2.3 and the Company shall include such information in the written notice referred to in Section 2.1(a) or Section 2.3(a), as applicable. In such event, the right of any Holder to include its Registrable Securities in such registration shall be conditioned upon such Holder's participation in such underwriting and the inclusion of such Holder's Registrable Securities in the underwriting to the extent provided herein. All Holders proposing to distribute their securities through such underwriting shall, together with the Company as provided in Section 2.5(e), enter into an underwriting agreement in customary form with the underwriter or underwriters selected for such underwriting by a majority in interest of the Initiating Holders (which underwriter or underwriters shall be reasonably acceptable to the Company). Notwithstanding any other provision of this Section 2.1 or Section 2.3, if the managing underwriter advises the Company that marketing factors require a limitation of the number of securities to be underwritten (including Preferred Stock Registrable Securities) then the Company shall so advise all Holders of Registrable Securities that would otherwise be underwritten pursuant hereto, and the number of shares that may be included in the underwriting shall be allocated to the Holders of such Registrable Securities on a *pro rata* basis based on the number of Registrable Securities held by all such Holders (including the Initiating Holders); *provided*, *however*, that the number of shares of Preferred Stock Registrable Securities to be included in such underwriting and registration shall not be reduced unless all other securities of the Company are first entirely excluded from the underwriting and registration. Any Registrable Securities excluded or withdrawn from such underwriting shall be withdrawn from the registration.

(d) The Company shall not be required to effect a registration pursuant to this Section 2.1:

(i) prior to the earlier of (A) the third anniversary of the date hereof or (B) one hundred eighty (180) days following the effective date of the registration statement pertaining to the Initial Offering;

(ii) after the Company has effected two (2) registrations pursuant to this Section 2.1, and such registrations have been declared or ordered effective;

(iii) if within fifteen (15) days of receipt of a written request from the Initiating Holders pursuant to Section 2.1(a), the Company gives notice to each of the Initiating Holders of the Company's intention to file a registration statement for its Initial Offering within ninety (90) days after receipt of such written request from the Initiating Holders, provided that the Company is actively employing in good faith commercially reasonable efforts to cause such registration statement to become effective during such period;

(iv) if the Initiating Holders propose to dispose of shares of Preferred Stock Registrable Securities that may be immediately registered on Form S-3 pursuant to a request made pursuant to Section 2.3 below; or

(v) in any particular jurisdiction in which the Company would be required to qualify to do business or to execute a general consent to service of process in effecting such registration, qualification or compliance unless the Company is already qualified to do business or subject to service of process, as applicable, in such jurisdiction and except as may be required by the Securities Act.

2.2 Piggyback Registrations. The Company shall notify all Holders of Registrable Securities in writing at least twenty (20) days prior to the filing of any registration statement under the Securities Act for purposes of a public offering of securities of the Company (including, but not limited to, registration statements relating to secondary offerings of securities of the Company, but excluding Special Registration Statements) and will afford each such Holder an opportunity to include in such registration statement, and the Company shall cause to be registered, all or part of such Registrable Securities held by such Holder. Each Holder desiring to include in any such registration statement all or any part of the Registrable Securities held by it shall, within fifteen (15) days after receipt of the above-described notice from the Company, so notify the Company in writing. Such notice shall state the intended method of disposition of the Registrable Securities by such Holder. If a Holder decides not to include all of its Registrable Securities in such registration statement filed by the Company, such Holder shall nevertheless continue to have the right to include any Registrable Securities in any subsequent registration statement or registration statements as may be filed by the Company with respect to offerings of its securities, all upon the terms and conditions set forth herein.

(a) Underwriting. If the registration statement under which the Company gives notice under this Section 2.2 is for an underwritten offering, the Company shall so advise the Holders of Registrable Securities. In such event, the right of any such Holder to be included in a registration pursuant to this Section 2.2 shall be conditioned upon such Holder's participation in such underwriting and the inclusion of such Holder's Registrable Securities in the underwriting to the extent provided herein. All Holders proposing to distribute their Registrable Securities through such underwriting shall enter into an underwriting agreement in

customary form with the underwriter or underwriters selected for such underwriting by the Company. Notwithstanding any other provision of this Agreement, if the underwriter determines in good faith that marketing factors require a limitation of the number of shares to be underwritten, the number of shares that may be included in the underwriting shall be allocated, first, to the Company; second, to the holders of Preferred Stock Registrable Securities (the "***Preferred Holders***") on a *pro rata* basis based on the total number of Preferred Stock Registrable Securities held by such Preferred Holders; third, to the Holders (other than the Preferred Holders) on a *pro rata* basis based on the total number of Registrable Securities held by such Holders; and fourth, to any stockholder of the Company (other than a Holder) on a pro rata basis; *provided*, *however*, that no such reduction shall reduce the amount of securities of the selling Holders included in the registration below thirty percent (30%) of the total amount of securities included in such registration, unless such offering is the Initial Offering and such registration does not include shares of any other selling stockholders, in which event any or all of the Registrable Securities of the Holders may be excluded in accordance with the immediately preceding clause. In no event will shares of any other selling stockholder be included in such registration that would reduce the number of shares which may be included by Holders without the written consent of Holders of not less than a majority of the Registrable Securities (including a majority of the Preferred Stock Registrable Securities, if applicable) proposed to be sold in the offering. If any Holder disapproves of the terms of any such underwriting, such Holder may elect to withdraw therefrom by written notice to the Company and the underwriter, delivered at least ten (10) business days prior to the effective date of the registration statement. Any Registrable Securities excluded or withdrawn from such underwriting shall be excluded and withdrawn from the registration. For any Holder that is a partnership or corporation, the partners, retired partners, members, former members and stockholders of such Holder, or the estates and family members of any such partners and retired partners and any trusts for the benefit of any of the foregoing person shall be deemed to be a single "Holder," and any *pro rata* reduction with respect to such "Holder" shall be based upon the aggregate amount of shares carrying registration rights owned by all entities and individuals included in such "Holder," as defined in this sentence.

(b) Right to Terminate Registration. The Company shall have the right to terminate or withdraw any registration initiated by it under this Section 2.2 prior to the effectiveness of such registration whether or not any Holder has elected to include securities in such registration. The Registration Expenses of such withdrawn registration shall be borne by the Company in accordance with Section 2.4 hereof.

2.3 Form S-3 Registration. In case the Company shall receive from any Holder or Holders of Registrable Securities a written request or requests that the Company effect a registration on Form S-3 (or any successor to Form S-3) or any similar short-form registration statement and any related qualification or compliance with respect to all or a part of the Registrable Securities owned by such Holder or Holders, the Company shall:

(a) promptly (and in any event within fifteen (15) days after such written request is delivered) give written notice of the proposed registration, and any related qualification or compliance, to all other Holders of Registrable Securities; and

(b) as soon as practicable, effect such registration and all such qualifications and compliances as may be so requested and as would permit or facilitate the sale and distribution of all or such portion of such Holder's or Holders' Registrable Securities as are specified in such request, together with all or such portion of the Registrable Securities of any other Holder or Holders joining in such request as are specified in a written request given within fifteen (15) days after receipt of such written notice from the Company; *provided*, *however*, that the Company shall not be obligated to effect any such registration, qualification or compliance pursuant to this Section 2.3:

(i) if Form S-3 is not available for such offering by the Holders;

(ii) if the Holders, together with the holders of any other securities of the Company entitled to inclusion in such registration, propose to sell Registrable Securities and such other securities (if any) at an aggregate price to the public of less than one million dollars ($1,000,000);

(iii) if within fifteen (15) days of receipt of a written request from any Holder or Holders pursuant to this Section 2.3, the Company gives notice to such Holder or Holders of the Company's intention to make a public offering within ninety (90) days after receipt of such written request from such Holder or Holders, other than pursuant to a Special Registration Statement; *provided that* the Company is actively employing in good faith commercially reasonable efforts to cause such registration statement to become effective during such period; *provided*, *further*, that such Holders were permitted to register such shares as requested to be registered pursuant to Section 2.2 hereof without reduction by the underwriter thereof;

(iv) if the Company has, within the twelve (12) month period preceding the date of such written request, already effected two (2) registrations on Form S-3 for the Holders pursuant to this Section 2.3; or

(v) in any particular jurisdiction in which the Company would be required to qualify to do business or to execute a general consent to service of process in effecting such registration, qualification or compliance unless the Company is already qualified to do business or subject to service of process, as applicable, in such jurisdiction and except as may be required by the Securities Act.

(c) Subject to the foregoing, the Company shall file a Form S-3 registration statement covering the Registrable Securities and other securities so requested to be registered as soon as practicable after receipt of the requests of the Holders. Registrations effected pursuant to this Section 2.3 shall not be counted as demands for registration or registrations effected pursuant to Section 2.1.

(d) Notwithstanding the foregoing obligations, if the Company furnishes to the Holder or Holders requesting a registration pursuant to this Section 2.3 a certificate signed by the Company's chief executive officer stating that in the good faith judgment of the Board it would be materially detrimental to the Company and its stockholders for such registration statement to either become effective or remain effective for as long as such registration statement

otherwise would be required to remain effective, because such action would (i) materially interfere with a significant acquisition, corporate reorganization, or other similar transaction involving the Company; (ii) require premature disclosure of material information that the Company has a bona fide business purpose for preserving as confidential or (iii) render the Company unable to comply with requirements under the Securities Act or Exchange Act, then the Company shall have the right to defer taking action with respect to such filing, and any time periods with respect to filing or effectiveness thereof shall be tolled correspondingly, for a period of not more than ninety (90) days after the request for registration on Form S-3 referred to in Section 2.3 is given; *provided*, *however*, that the Company may not invoke this right more than once in any twelve (12) month period; and *provided*, *further*, that the Company shall not register any securities for its own account or that of any other stockholder during such ninety (90) day period other than pursuant to a Special Registration Statement.

2.4 Expenses of Registration. Except as specifically provided herein, all Registration Expenses incurred in connection with any registration, qualification or compliance pursuant to Section 2.1 or any registration under Section 2.2 or Section 2.3 herein shall be borne by the Company. All Selling Expenses incurred in connection with any registrations hereunder shall be borne by the holders of the securities so registered *pro rata* on the basis of the number of shares so registered. The Company shall not, however, be required to pay for expenses of any registration proceeding begun pursuant to Section 2.1 or 2.3, the request of which has been subsequently withdrawn by the Holders which initiated such request unless (a) the withdrawal is based upon material adverse information concerning the Company of which such Holders were not aware at the time of such request or (b) the Holders of a majority of Registrable Securities then outstanding agree to forfeit their right to one (1) requested registration pursuant to Section 2.1 or 2.3, as applicable, in which event such right shall be forfeited by all Holders. If the Holders are required to pay the Registration Expenses, such expenses shall be borne by the holders of securities (including Registrable Securities) requesting or joining such registration in proportion to the number of shares that were to be included in such registration. If the Company is required to pay the Registration Expenses of a withdrawn offering pursuant to clause (a) above, then the Holders shall not forfeit their rights pursuant to Section 2.1 or 2.3.

2.5 Obligations of the Company. Whenever required to effect the registration of any Registrable Securities, the Company shall, as expeditiously as reasonably possible:

(a) Prepare and file with the SEC a registration statement with respect to such Registrable Securities and use best efforts to cause such registration statement to become effective, and, upon the request of the Holders of a majority of the Registrable Securities registered thereunder, keep such registration statement effective for up to one hundred twenty (120) days or, if earlier, until the Holder or Holders have completed the distribution related thereto; *provided*, *however*, that (i) such one hundred twenty (120) day period shall be extended for a period of time equal to the period the Holder refrains, at the request of an underwriter of Common Stock (or other securities) of the Company, from selling any securities included in such registration, and (ii) in the case of any registration of Registrable Securities on Form S-3 that are intended to be offered on a continuous or delayed basis, subject to compliance with applicable SEC rules, such one hundred twenty (120) day period shall be extended for up to sixty (60) days, if necessary, to keep the registration statement effective until all such Registrable Securities are sold;

(b) Prepare and file with the SEC such amendments and supplements to such registration statement and the prospectus used in connection with such registration statement as may be necessary to comply with the provisions of the Securities Act with respect to the disposition of all securities covered by such registration statement for the period set forth in subsection (a) above;

(c) Comply with Rule 172 of the Securities Act and (i) advise the selling Holders promptly of any failure by the Company to satisfy the conditions of such Rule 172 and (ii) promptly furnish to the Holders such number of copies of a prospectus, including a preliminary prospectus, in conformity with the requirements of the Securities Act, and such other documents as they may reasonably request in order to facilitate the disposition of Registrable Securities owned by them;

(d) Use best efforts to register and qualify the securities covered by such registration statement under such other securities or blue-sky laws of such jurisdictions as shall be reasonably requested by the Holders; *provided* that the Company shall not be required in connection therewith or as a condition thereto to qualify to do business or to file a general consent to service of process in any such states or jurisdictions, unless the Company is already qualified to do business or subject to service of process, as applicable, in such jurisdiction and except as may be required by the Securities Act;

(e) In the event of any underwritten public offering, enter into and perform its obligations under an underwriting agreement, in usual and customary form, with the managing underwriter(s) of such offering (each Holder participating in such underwriting shall also enter into and perform its obligations under such an agreement);

(f) Use its best efforts to cause all such Registrable Securities covered by such registration statement to be listed on a national securities exchange or trading system and each securities exchange and trading system (if any) on which similar securities issued by the Company are then listed;

(g) Provide a transfer agent and registrar for all Registrable Securities registered pursuant to this Agreement and provide a CUSIP number for all such Registrable Securities, in each case no later than the effective date of such registration;

(h) Promptly make available for inspection by the selling Holders, any managing underwriter(s) participating in any disposition pursuant to such registration statement, and any attorney or accountant or other agent retained by any such underwriter or selected by the selling Holders, all financial and other records, pertinent corporate documents, and properties of the Company, and cause the Company's officers, directors, employees, and independent accountants to supply all information reasonably requested by any such seller, underwriter, attorney, accountant, or agent, in each case, as necessary or advisable to verify the accuracy of the information in such registration statement and to conduct appropriate due diligence in connection therewith;

(i) Notify each selling Holder, promptly after the Company receives notice thereof, of the time when such registration statement has been declared effective or a supplement to any prospectus forming a part of such registration statement has been filed;

(j) After such registration statements become effective, notify each selling Holder of any request by the SEC that the Company amend or supplement such registration statement or prospectus;

(k) Promptly notify each selling Holder of any stop order issued or threatened by the SEC or any state securities commission and take all reasonable actions required to prevent the entry of such stop order or to remove it if entered;

(l) Use its best efforts to prevent the issuance of any stop order or other suspension of effectiveness and, if such order is issued, obtain the withdrawal of any such order at the earliest possible moment;

(m) Notify each Holder of Registrable Securities covered by such registration statement at any time when a prospectus relating thereto is required to be delivered under the Securities Act of the happening of any event as a result of which the prospectus included in such registration statement, as then in effect, includes an untrue statement of a material fact or omits to state a material fact required to be stated therein or necessary to make the statements therein not misleading in the light of the circumstances then existing, and as promptly as practicable thereafter, prepare and file with the SEC, and furnish without charge to the appropriate Holders and managing underwriter(s), if any, an amendment or supplement to such registration statement or prospectus in order to cause such registration statement or prospectus not to include any untrue statement of a material fact or omit to state a material fact required to be stated therein or necessary to make the statements therein not misleading in the light of the circumstances then existing and furnish such copies thereof as the Holders of any underwriter may reasonably request; and

(n) Use best efforts to furnish, on the date that such Registrable Securities are delivered to the underwriters for sale, if such securities are being sold through underwriters, (i) an opinion, dated as of such date, of the counsel representing the Company for the purposes of such registration, in form and substance as is customarily given to underwriters in an underwritten public offering, addressed to the underwriters, if any, and (ii) a letter, dated as of such date, from the independent certified public accountants of the Company, in form and substance as is customarily given by independent certified public accountants to underwriters in an underwritten public offering addressed to the underwriters.

2.6 Termination of Registration Rights. All registration rights granted under this Section 2 shall terminate and be of no further force and effect upon the earlier to occur of (i) three (3) years after the date of the Company's Initial Offering, or (ii) as to any Holder, at such time as such Holder could sell all of its Registrable Securities without limitation during any 90 day period under Rule 144 of the Securities Act.

2.7 Delay of Registration; Furnishing Information.

(a) No Holder shall have any right to obtain or seek an injunction restraining or otherwise delaying any such registration as the result of any controversy that might arise with respect to the interpretation or implementation of this Section 2.

(b) It shall be a condition precedent to the obligations of the Company to take any action pursuant to Section 2.1, 2.2 or 2.3 with respect to the Registrable Securities of any selling Holder that such Holder shall furnish to the Company such information regarding itself, the Registrable Securities held by it and the intended method of disposition of such securities as shall be required to effect the registration of their Registrable Securities.

(c) The Company shall have no obligation with respect to any registration requested pursuant to Section 2.1 or Section 2.3 if, due to the operation of subsection 2.1(b), the number of shares or the anticipated aggregate offering price of the Registrable Securities to be included in the registration does not equal or exceed the number of shares or the anticipated aggregate offering price required to originally trigger the Company's obligation to initiate such registration as specified in Section 2.1 or Section 2.3, whichever is applicable.

2.8 Indemnification. In the event any Registrable Securities are included in a registration statement under Section 2.1, 2.2 or 2.3:

(a) To the extent permitted by law, the Company will indemnify and hold harmless each selling Holder, the partners, members, stockholders, officers and directors of each such Holder, legal counsel and accountants of each such Holder, any underwriter (as defined in the Securities Act) for such Holder and each person, if any, who controls such Holder or underwriter within the meaning of the Securities Act or the Exchange Act, against any losses, claims, damages, or liabilities (joint or several) to which they may become subject under the Securities Act, the Exchange Act or other federal or state law, insofar as such losses, claims, damages or liabilities (or actions in respect thereof) arise out of or are based upon any of the following statements, omissions or violations (collectively a "***Violation***") by the Company: (i) any untrue statement or alleged untrue statement of a material fact contained in such registration statement or incorporated by reference therein, including any preliminary prospectus or final prospectus contained therein or any amendments or supplements thereto, (ii) the omission or alleged omission to state therein a material fact required to be stated therein, or necessary to make the statements therein not misleading, or (iii) any violation or alleged violation by the Company of the Securities Act, the Exchange Act, any state securities law or any rule or regulation promulgated under the Securities Act, the Exchange Act or any state securities law in connection with the offering covered by such registration statement; and the Company will reimburse each such Holder, partner, member, stockholder, officer, director, underwriter or controlling person, or other aforementioned person for any legal or other expenses reasonably incurred by them, as incurred, in connection with investigating or defending any such loss, claim, damage, liability or action; *provided*, *however*, that the indemnity agreement contained in this Section 2.8(a) shall not apply to amounts paid in settlement of any such loss, claim, damage, liability or action if such settlement is effected without the consent of the Company, which consent shall not be unreasonably withheld, conditioned or delayed, nor shall the Company be liable in any such case for any such loss, claim, damage, liability or action to the extent that it

arises out of or is based upon a Violation which occurs in reliance upon and in conformity with written information furnished expressly for use in connection with such registration by such Holder, partner, member, stockholder, officer, director, underwriter or controlling person, or other aforementioned person of such Holder.

(b) To the extent permitted by law, each selling Holder will, if Registrable Securities held by such Holder are included in the securities as to which such registration qualifications or compliance is being effected, severally and not jointly, indemnify and hold harmless the Company, each of its directors, each of its officers who has signed the registration statement, and each person, if any, who controls the Company within the meaning of the

Securities Act, any underwriter and any other Holder selling securities under such registration statement or any of such other Holder's partners, members, stockholders, directors or officers or any person who controls such Holder, against any losses, claims, damages or liabilities (joint or several) to which the Company or any such director, officer, controlling person, underwriter or other such Holder, or partner, member, stockholder, director, officer or controlling person of such other Holder may become subject under the Securities Act, the Exchange Act or other federal or state law, insofar as such losses, claims, damages or liabilities (or actions in respect thereto) arise out of or are based upon any of the following statements: (i) any untrue statement or alleged untrue statement of a material fact contained in such registration statement or incorporated by reference therein, including any preliminary prospectus or final prospectus contained therein or any amendments or supplements thereto, (ii) the omission or alleged omission to state therein a material fact required to be stated therein, or necessary to make the statements therein not misleading, or (iii) any violation or alleged violation by the Company of the Securities Act (collectively, a "***Holder Violation***"), in each case to the extent (and only to the extent) that such Holder Violation occurs in reliance upon and in conformity with written information furnished by such Holder under an instrument duly executed by such Holder and stated to be specifically for use in connection with such registration; and each such Holder will reimburse any legal or other expenses reasonably incurred by the Company or any such director, officer, controlling person, underwriter or other Holder, or partner, member, stockholder, officer, director or controlling person of such other Holder, as incurred, in connection with investigating or defending any such loss, claim, damage, liability or action if it is judicially determined that there was such a Holder Violation; *provided*, *however*, that the indemnity agreement contained in this Section 2.8(b) shall not apply to amounts paid in settlement of any such loss, claim, damage, liability or action if such settlement is effected without the prior written consent of the Holder, which consent shall not be unreasonably withheld, conditioned or delayed; *provided further*, that in no event shall any indemnity under this Section 2.8(b) when combined with the amounts paid or payable by such Holder pursuant to Section 2.8(d), exceed the net proceeds from the offering received by such Holder.

(c) Promptly after receipt by an indemnified party under this Section 2.8 of notice of the commencement of any action (including any governmental action) for which a party may be entitled to indemnification hereunder, such indemnified party will, if a claim in respect thereof is to be made against any indemnifying party under this Section 2.8, deliver to the indemnifying party a written notice of the commencement thereof and the indemnifying party shall have the right to participate in, and, to the extent the indemnifying party so desires, jointly with any other indemnifying party similarly noticed, to assume the defense thereof with counsel mutually satisfactory to the parties; *provided*, *however*, that an indemnified party shall have the

right to retain its own counsel, with the fees and expenses to be paid by the indemnifying party, if representation of such indemnified party by the counsel retained by the indemnifying party would be inappropriate due to actual or potential differing interests between such indemnified party and any other party represented by such counsel in such proceeding. The failure to deliver written notice to the indemnifying party within a reasonable time of the commencement of any such action, if materially prejudicial to its ability to defend such action, shall relieve such indemnifying party of any liability to the indemnified party under this Section 2.8, but the omission so to deliver written notice to the indemnifying party will not relieve it of any liability that it may have to any indemnified party otherwise than under this Section 2.8.

(d) If the indemnification provided for in this Section 2.8 is held by a court of competent jurisdiction (by the entry of a final judgment or decree by a court of competent jurisdiction and the expiration of time to appeal or the denial of the last right of appeal) to be unavailable to an indemnified party with respect to any losses, claims, damages or liabilities referred to herein, the indemnifying party, in lieu of indemnifying such indemnified party thereunder, shall to the extent permitted by applicable law contribute to the amount paid or payable by such indemnified party as a result of such loss, claim, damage or liability in such proportion as is appropriate to reflect the relative fault of the indemnifying party on the one hand and of the indemnified party on the other in connection with the Violation(s) or Holder Violation(s) that resulted in such loss, claim, damage or liability, as well as any other relevant equitable considerations. The relative fault of the indemnifying party and of the indemnified party shall be determined by a court of law by reference to, among other things, whether the untrue or alleged untrue statement of a material fact or the omission to state a material fact relates to information supplied by the indemnifying party or by the indemnified party and the parties' relative intent, knowledge, access to information and opportunity to correct or prevent such statement or omission; *provided*, that (x) no Holder will be required to contribute any amount in excess of the public offering price of all such Registrable Securities offered and sold by such Holder pursuant to such registration statement, and (y) in no event shall any contribution by a Holder hereunder, when combined with the amounts paid or payable by such Holder pursuant to Section 2.8(b), exceed the net proceeds from the offering received by such Holder.

(e) The obligations of the Company and Holders under this Section 2.8 shall survive completion of any offering of Registrable Securities in a registration statement and the termination of this Agreement. No indemnifying party, in the defense of any such claim or litigation, shall, except with the consent of each indemnified party, consent to entry of any judgment or enter into any settlement which does not include as an unconditional term thereof the giving by the claimant or plaintiff to such indemnified party of a release from all liability in respect to such claim or litigation.

2.9 Assignment of Registration Rights. The rights to cause the Company to register Registrable Securities pursuant to this Section 2 may be assigned by a Holder to a transferee or assignee of Registrable Securities that (a) is a partner or retired partner of any Holder that is a partnership, (b) is a member or former member of any Holder that is a limited liability company, (c) is a Holder's family member or trust for the benefit of such family member or of an individual Holder, (d) is an Affiliate of such Holder, (e) is any affiliated venture capital fund of an Investor, or (f) is a transferee which acquires at least twenty-five percent (25%) of the shares of Preferred Stock held by the transferor; *provided*, *however*, (i) the transferor shall, within ten

(10) days after such transfer, furnish to the Company written notice of the name and address of such transferee or assignee and the securities with respect to which such registration rights are being assigned and (ii) such transferee shall agree to be subject to all restrictions set forth in this Agreement.

2.10 Amendment of Registration Rights. Any provision of this Section 2 may be amended and the observance thereof may be waived (either generally or in a particular instance and either retroactively or prospectively), only with the written consent of the Company and the Holders of a majority of the Registrable Securities then outstanding (including a majority of shares of the Preferred Stock then outstanding). Any amendment or waiver effected in accordance with this Section 2.10 shall be binding upon each Holder and the Company. By acceptance of any benefits under this Section 2, the Holders of Registrable Securities hereby agree to be bound by the provisions hereunder.

2.11 Limitation on Subsequent Registration Rights. Other than as provided in Section 5.10, after the date of this Agreement, the Company shall not, without the prior written consent of the Holders of a majority of the Registrable Securities then outstanding (including a majority of shares of the

Preferred Stock then outstanding), enter into any agreement with any holder or prospective holder of any securities of the Company that would grant such holder registration rights senior to those granted to the Holders hereunder, other than the right to a Special Registration Statement.

2.12 *"Market Stand-Off"* Agreement. Each Holder hereby agrees that such Holder shall not sell, transfer, make any short sale of, grant any option for the purchase of, or enter into any hedging or similar transaction with the same economic effect as a sale with respect to, any Common Stock (or other securities) of the Company held by such Holder (other than those included in the registration) for a period specified by the representative of the underwriters of Common Stock (or other securities) of the Company not to exceed one hundred eighty (180) days following the effective date of a registration statement of the Company filed under the Securities Act; *provided* that:

(a) such agreement shall apply only to the Company's Initial Offering; and

(b) all officers and directors of the Company and holders of at least one percent (1%) of the Company's voting securities are subject to the same restrictions.

2.13 Agreement to Furnish Information. Each Holder agrees to execute and deliver such other agreements as may be reasonably requested by the Company or the underwriter that are consistent with the Holder's obligations under Section 2.12 or that are necessary to give further effect thereto. In addition, if requested by the Company or the representative of the underwriters of Common Stock (or other securities) of the Company, each Holder shall provide, within ten (10) days of such request, such information as may be required by the Company or such representative in connection with the completion of any public offering of the Company's securities pursuant to a registration statement filed under the Securities Act. The obligations described in Section 2.12 and this Section 2.13 shall not apply to a Special Registration Statement. The Company may impose stop-transfer instructions with respect to the shares of Common Stock (or other securities) subject to the foregoing restriction until the end of said one

hundred eighty (180) day period. Each Holder agrees that any transferee of any shares of Registrable Securities shall be bound by Sections 2.12 and 2.13. The underwriters of the Company's stock are intended third party beneficiaries of Sections 2.12 and 2.13 and shall have the right, power and authority to enforce the provisions hereof as though they were a party hereto.

2.14 Rule 144 Reporting. With a view to making available to the Holders the benefits of certain rules and regulations of the SEC which may permit the sale of the Registrable Securities to the public without registration, the Company shall:

(a) Make and keep public information available, as those terms are understood and defined in SEC Rule 144 or any similar or analogous rule promulgated under the Securities Act, at all times after the effective date of the first registration filed by the Company for an offering of its securities to the general public;

(b) File with the SEC, in a timely manner, all reports and other documents required of the Company under the Exchange Act; and

(c) So long as a Holder owns any Registrable Securities, furnish to such Holder forthwith upon request: (i) a written statement by the Company as to its compliance with the reporting requirements of said Rule 144 of the Securities Act, and of the Exchange Act (at any time after it has become subject to such reporting requirements), or its qualification as a registrant whose securities may be resold pursuant to Form S-3 (at any time after the Company so qualifies); (ii) a copy of the most recent annual or quarterly report and such other periodic reports of the Company filed with the Commission; and (iii) such other reports and documents as a Holder may reasonably request in connection with availing itself of any rule or regulation of the SEC allowing it to sell any such securities without registration or pursuant to such Form S-3.

SECTION 3. COVENANTS OF THE COMPANY.

3.1 Basic Financial Information and Reporting.

(a) The Company shall maintain true books and records of account in which full and correct entries will be made of all its business transactions pursuant to a system of accounting established and administered in accordance with GAAP consistently applied, and will set aside on its books all such proper accruals and reserves as shall be required under GAAP consistently applied.

(b) So long as an Investor (with its Affiliates) shall own not less than 250,000 shares (as adjusted for any stock dividends, splits, combinations, recapitalizations and the like) of Registrable Securities (each, a "***Significant Holder***"), as soon as practicable and in any event within one hundred twenty (120) days after the end of each fiscal year of the Company, the Company shall furnish each Significant Holder (i) an audited consolidated balance sheet of the Company, as at the end of such fiscal year, and audited consolidated statements of income and cash flows of the Company, for such year, all prepared in accordance with GAAP consistently applied and setting forth in each case in comparative form the figures for the previous fiscal year and as included in the Budget (as defined below) for such year, with an

explanation of any material differences between such figures, all in reasonable detail, and (ii) a statement of stockholders' equity as of the end of such year. Such financial statements shall be accompanied by a report and opinion thereon by independent public accountants of national standing selected by the Board, including a majority of the Preferred Directors.

(c) The Company shall furnish each Significant Holder, as soon as practicable and in any event within forty-five (45) days after the end of each of the first three (3) fiscal quarters of the Company, (i) an unaudited consolidated balance sheet of the Company as of the end of such fiscal quarter and unaudited consolidated statements of income and cash flows of the Company for such fiscal quarter, all prepared in accordance with GAAP consistently applied (except that such financial statements may (x) be subject to normal year-end audit adjustments and (y) not contain all notes thereto that may be required in accordance with GAAP), and (ii) a statement of stockholders' equity as of the end of such fiscal quarter.

(d) The Company shall furnish each Significant Holder, as soon as practicable and in any event within thirty (30) days after the end of each month, (i) an unaudited consolidated balance sheet of the Company as of the end of each month, and unaudited consolidated statements of income and cash flows of the Company, together with supporting schedules, for such month and for the current fiscal year to date, prepared in accordance with GAAP consistently applied setting forth in comparative form (x) the Company's projected financial statements for the current fiscal year to date as included in the Budget and (y) the Company's financial statements for the corresponding periods for the immediately preceding fiscal year, and (ii) a statement of stockholders' equity as of the end of such month.

(e) The Company will furnish each Significant Holder: (i) at least thirty (30) days prior to the beginning of each fiscal year a detailed annual and monthly budget, projected annual and monthly financial statements, and operating plans for such fiscal year, together with a written discussion of the operating plan (the "***Budget***"), and as soon as available, any subsequent written revisions thereto; (ii) within ten (10) days of delivery, such other notices, information and data with respect to the Company as the Company delivers to the holders of Common Stock; and (iii) promptly, such other information and data as such Significant Holder may from time to time reasonably request.

(f) On and after the date on which the Company becomes subject to the requirements under either Section 13 or 15(d) of the Exchange Act, the Company may send to each Significant Holder the reports, including the financial statements contained therein, that are required to be filed with the Commission under the Exchange Act in lieu of the financial information and certificates required to be delivered under this Section 3.1.

3.2 Inspection Rights. Each Significant Holder shall have the right to visit and inspect any of the properties of the Company or any of its subsidiaries, and to discuss the affairs, finances and accounts of the Company or any of its subsidiaries with its officers, and to review such information as is reasonably requested all at such reasonable times and as often as may be reasonably requested; *provided, however*, that the Company shall not be obligated under this Section 3.2 with respect to a competitor of the Company or with respect to information which the Board determines in good faith is confidential or attorney-client privileged and should not, therefore, be disclosed. Notwithstanding anything to the contrary contained in this Agreement,

in the event that Pfizer is deemed to be a competitor of the Company, the investment, legal, finance, tax, accounting and audit personnel of Pfizer and its Affiliates may exercise the rights set forth in this Section 3.2 solely for the purpose of managing, evaluating and reporting on Pfizer's investment in the Company.

3.3 Confidentiality of Records. Each Investor agrees that it shall keep confidential and shall not disclose or divulge any confidential, proprietary, or secret information which such Investor may obtain from the Company pursuant to the financial statements, reports, and other materials submitted by the Company to such Investor pursuant to this Agreement or otherwise, or pursuant to visitation or inspection rights granted under this Agreement, unless (a) such information enters the public domain through no fault of such Investor, (b) such information is communicated to such Investor by a third party without breach of any obligation of confidentiality such third party may have to the Company, (c) the Company provides written consent to the disclosure of such information, (d) such information is developed by Investor or its agents independently of and without reference to any confidential information communicated by the Company, or (e) required by a valid order of a court or governmental body having jurisdiction or otherwise required by law, statutes, rules or regulations or pursuant to any direction, request or requirement (whether or not having the force of law but if not having the force of law being of a type with which institutional or corporate investors in the relevant jurisdiction are accustomed to comply) of any self-regulating organization or any governmental, fiscal, monetary or other authority; provided, however, that an Investor may disclose such information (A) to its partners, subsidiaries, parents, officers, employees, agents, directors, Affiliates, attorneys, accountants, consultants, and other professionals for the purpose of evaluating its investment in the Company as long as such attorneys, advisors, accountants, partners, subsidiaries, parents, officers, employees, agents, directors or Affiliates are advised of the confidentiality provisions of this Section 3.3, (B) to any prospective purchaser of any Shares from such Investor as long as such prospective purchaser agrees in writing to be bound by the provisions of this Section 3.3, (C) for internal market, industry and investment analyses, or (D) to any Affiliate of such Investor or to a partner or stockholder of such Purchaser; and provided, further, that if any Investor is required or requested to disclose information pursuant to (e) above, such Investor shall use its commercially reasonable efforts to limit such disclosure and to obtain confidential treatment or a protective order for such information and shall give the Company prompt written notice prior to such disclosure to the extent practicable. The Company acknowledges that certain of the Investors are in the business of venture capital or private equity investing and therefore review the business plans and related proprietary information of many enterprises, including enterprises that may have products or services that compete directly or indirectly with those of the Company. Nothing in this Agreement shall preclude or in any way restrict the Investors from investing or participating in any particular enterprise, regardless of whether such enterprise has products or services that compete with those of the Company. The Company and each Investor acknowledges and agrees that certain of the Investors or their Affiliates may presently have, or may engage in the future in, internal development programs, or may receive information from third parties that relates to, and may develop and commercialize products independently or in cooperation with such third parties, that are similar to or that are directly or indirectly competitive with the Company's development programs, products or services. Nothing in this Agreement or any other agreement related to the transactions contemplated by this Agreement shall in any way preclude or restrict such Investors or their Affiliates from conducting any development program, commercializing any product or service or

otherwise engaging in any enterprise, whether or not such development program, product, service or enterprise competes with those of the Company, so long as such activities do not result in a violation of the confidentiality provisions of this Agreement.

3.4 Reservation of Common Stock. The Company will at all times reserve and keep available, solely for issuance and delivery upon the conversion of the Preferred Stock, all Common Stock issuable from time to time upon such conversion.

3.5 Proprietary Information and Inventions Agreement. The Company shall require all employees, advisors and consultants of the Company or any of its subsidiaries to execute and deliver a Proprietary Information and Inventions Agreement substantially in a form approved by the Board.

3.6 Employee Vesting. Unless otherwise approved by the Board, including a majority of the Preferred Directors, all future employees, advisors and consultants of the Company who purchase, receive options to purchase, or receive awards of shares of the Company's capital stock after the date hereof shall be required to execute restricted stock or option agreements, as applicable, providing for (i) vesting of shares over a four (4) year period, with the first twenty-five percent (25%) of such shares vesting following twelve (12) months of continued employment or service, and the remaining shares vesting in equal monthly installments over the following thirty-six (36) months, and (ii) a one hundred eighty (180) day lockup period in connection with the Initial

Offering. Notwithstanding the foregoing, solely with respect to any equity award or option grant by the Company immediately following the Initial Closing to any employee, advisor or consultant who has been employed with or providing services to the Company for at least one year before the Initial Closing, such equity award or option grant shall not be subject to a one-year cliff. The Company shall, upon termination of employment of a holder of restricted stock for any reason, have the right to repurchase unvested shares at the lower of cost or the fair market value of such shares at the time of repurchase.

3.7 Matters Requiring Preferred Directors' Approval. The Company shall not, without approval of the Board, which approval must include the affirmative vote of a majority of the Preferred Directors or if there is only one Preferred Director, the affirmative vote of such remaining Preferred Director:

(a) incur indebtedness in excess of $100,000, individually or in the aggregate, other than payables incurred in the ordinary course of business;

(b) change the principal business of the Company, enter into any material new line of business, or exit the current line of business;

(c) enter into or be a party to any transaction with or modify any agreement with any director, officer, or employee of the Company or any "associate" (as defined in Rule 12b-2 promulgated under the Exchange Act) of any such Person, except for transactions contemplated by this Agreement or customary compensation or benefit arrangements that are approved by the Board; or

(d) amend the Company's 2008 Long Term Incentive Plan, as amended, or approve any new equity incentive plan.

3.8 Directors' Liability and Indemnification. The Restated Certificate and the Company's Bylaws, as amended from time to time (the "***Bylaws***"), shall provide (a) for elimination of the liability of directors to the maximum extent permitted by law and (b) for indemnification of directors for acts on behalf of the Company to the maximum extent permitted by law.

3.9 Insurance. The Company shall obtain, as soon as possible after the date hereof, from a financially sound and reputable insurer, directors and officers liability insurance to the maximum extent permitted by law and providing for at least $5,000,000 in coverage, and shall cause such insurance policy to be maintained until such time as the Board, including a majority of the Preferred Directors, determines that such insurance should be discontinued. The Company shall use commercially reasonable efforts to obtain, as soon as possible after the date hereof, from a financially sound and reputable insurer, term "key-person" life insurance on the Company's chief executive officer, in the aggregate amount of $1,000,000, and shall cause such insurance policy to be maintained until such time as the Board, including a majority of the Preferred Directors, determines that such insurance should be discontinued. The key-person policy shall name the Company as loss payee, and neither policy shall be cancelable by the Company without prior approval of the Board, including a majority of the Preferred Directors.

3.10 Successor Indemnification. If the Company or any of its successors or assignees (i) consolidates with or merges into any other person and is not the continuing or surviving corporation or entity of such consolidation or merger or (ii) transfers or conveys all or substantially all of its properties and assets to any person, then, and in each such case, to the extent reasonably necessary, the Company will use commercially reasonable efforts for proper provision to be made so that the successors and assignees of the Company assume the obligations of the Company with respect to indemnification of members of the Board as in effect immediately before such transaction, whether such obligations are contained in the Bylaws, the Restated Certificate or elsewhere, as the case may be.

3.11 Compensation Committee. The Board will maintain a compensation committee to recommend management compensation and the Company's benefit plans for approval by the Board and to administer the Company's equity incentive plans. The compensation committee shall contain no more than three (3) persons, including the Preferred Directors designated by Sofinnova and NEA, respectively, pursuant to that certain Second Amended and Restated Voting Agreement dated as of the date hereof, by and among the Company, the Investors and certain other parties set forth therein (the "***Voting Agreement***").

3.12 Audit Committee. The Board will maintain an audit committee. The audit committee shall contain no more than three (3) persons, including the Preferred Director designated by Sofinnova pursuant to the Voting Agreement.

3.13 Meeting of the Board; Board Expenses; Compensation of Directors. The Board shall meet at least five (5) times each year in accordance with an agreed-upon schedule. The Company shall reimburse each non-employee director for (i) all reasonable expenses

incurred for services on the Board and (ii) out-of-pocket travel expenses incurred in connection with travel to and from the meetings of the Board. If any non-employee director receives equity compensation for his or her services as a director of the Company, each other non-employee director shall be entitled to receive the same equity compensation; *provided, however*, that each such non-employee director shall have the right in his or her discretion to waive receiving such equity compensation.

3.14 Qualifying Investments. Any future purchases of Company securities by Sofinnova in connection with or upon a registered public offering of the Company shall constitute a qualifying investment, as such term is defined in Rule 203(1)-1 promulgated under the Investment Advisers Act of 1940, as amended.

3.15 Small Business Stock; Real Property Holding Corporation.

(a) For so long as any of the shares of Preferred Stock are held by an Investor (or a transferee in whose hands such shares are eligible to qualify as "Qualified Small Business Stock" as defined in Section 1202(c) of the Internal Revenue Code of 1986, as amended (the "***Code***")), the Company will use its reasonable efforts to comply with the reporting and recordkeeping requirements of Section 1202 of the Code, any regulations promulgated thereunder and any similar state laws and regulations. The Company agrees to submit to any Investor and to the Internal Revenue Service, if necessary, any reports that may be required under Section 1202(d)(1)(c) of the Code and any related Treasury Regulations. In addition, within ten (10) days after any Investor has delivered to the Company a written request therefor, the Company shall deliver to such Investor a written statement indicating whether Preferred

Stock constitutes "Qualified Small Business Stock" as defined in Section 1202(c) of the Code. The Company's obligation to furnish a written statement pursuant to this Section 3.15(a) shall continue notwithstanding the fact that a class of the Company's stock may be traded on an established securities market.

(b) The Company shall provide prompt notice to each Investor following any "determination date" (as defined in Treasury Regulation Section 1.897-2(c)(1)) on which the Company becomes a United States real property holding corporation. In addition, upon a written request by any Investor, the Company shall provide such Investor with a written statement informing such Investor whether such Investor's interest in the Company constitutes a United States real property interest. The Company's determination shall comply with the requirements of Treasury Regulation Section 1.897-2(h)(1) or any successor regulation, and the Company shall provide timely notice to the Internal Revenue Service, in accordance with and to the extent required by Treasury Regulation Section 1.897-2(h)(2) or any successor regulation, that such statement has been made. The Company's written statement shall be delivered to such Investor within ten (10) days of such Investor's written request therefor. The Company's obligation to furnish such written statement pursuant to this Section 3.15(b) shall continue notwithstanding the fact that a class of the Company's stock may be regularly traded on an established securities market or the fact that there is no preferred stock then outstanding.

3.16 Certain Covenants Relating to SBA Matters.

(a) Compliance. So long as any Investor which is a licensed Small Business Investment Company (an "***SBIC Investor***") holds any securities of the Company, the Company will at all times comply with the non-discrimination requirements of 13 C.F.R. Parts 112, 113 and 117.

(b) Information for SBIC Investor. Within forty-five (45) days after the end of each fiscal year and at such other times as an SBIC Investor may reasonably request, the Company shall deliver to such SBIC Investor a written assessment, in form and substance satisfactory to such SBIC Investor, of the economic impact of such SBIC Investor's financing specifying the full-time equivalent jobs created or retained in connection with such investment, and the impact of the financing on the Company's business in terms of profits and on taxes paid by the Company and its employees. Upon request, the Company agrees to promptly provide each SBIC Investor with sufficient information to permit such Investor to comply with their obligations under the Small Business Investment Act of 1958, as amended, and the regulations promulgated thereunder and related thereto; *provided*, *however*, each SBIC Investor agrees that it will protect any information which the Company labels as confidential to the extent permitted by law. Any submission of any financial information under this Section shall include a certificate of the Company's president, chief executive officer, treasurer or chief financial officer.

3.17 Series C Preferred Stock Dividend. In connection with the Special Dividend (as defined in the Restated Charter), each holder of Series A Preferred Stock and Series B Preferred Stock hereby represents and warrants to the Company and further agrees as follows: (a) such stockholder has been advised in writing to consult with such attorneys, accountants and other advisors of his, her or its own choice with respect to the Special Dividend; (b) such stockholder has had the opportunity and sufficient time to seek such legal, accounting and other advice; and (c) such stockholder solely shall be responsible for any taxes due by such stockholder as a result of the Special Dividend. Each holder of Series A Preferred Stock and Series B Preferred Stock will defend and indemnify the Company from and against: (i) any tax liability actually incurred by the Company that results directly from the failure of such stockholder to pay any taxes due by such stockholder as a result of the Special Dividend and (ii) any and all losses or liabilities, including defense costs, actually incurred by the Company that result directly from such stockholder's failure to pay any taxes due as a result of the Special Dividend.

3.18 Board Matters. Each Preferred Director shall be entitled in such person's discretion to be a member of any committee of the Board of Directors of the Company, unless such committee is comprised solely of disinterested directors and such Preferred Director is not disinterested for such purposes. If at any time the Company has any subsidiaries, then the board of directors of any subsidiary of the Company shall be comprised of the same members as the Board of Directors of the Company.

3.19 FCPA Compliance. The Company shall not, and shall not permit any of its subsidiaries and Affiliates or any of its or their respective directors, officers, managers, employees, independent contractors, representatives or agents (collectively, "***Representatives***") to, promise, authorize or make any payment to, or otherwise contribute any item of value to, directly or indirectly, any non-U.S. government official, in each case, in violation of the U.S. Foreign Corrupt Practices Act ("***FCPA***") or any other applicable anti-bribery or anti-corruption

law. The Company shall, and shall cause each of its subsidiaries and Affiliates to, cease all of its or their respective activities, as well as remediate any actions taken by the Company, its subsidiaries or Affiliates or any of its or their respective Representatives in violation of the FCPA or any other applicable anti-bribery or anti-corruption law. The Company shall, and shall cause each of its Affiliates and subsidiaries to, maintain systems or internal controls (including, but not limited to, accounting systems, purchasing systems and billing systems) to ensure compliance with the FCPA or any other applicable anti-bribery or anti-corruption law.

3.20 Termination of Covenants. All covenants of the Company contained in Section 3 of this Agreement (other than the provisions of Sections 3.3, 3.8, 3.10, 3.14, 3.15, 3.17, and 3.19) shall terminate and be of no further force or effect as to each Investor (a) immediately prior to the consummation of the Qualified IPO (as defined in the Restated Certificate) or (b) when the Company first becomes subject to the periodic reporting requirements of Section 12(g) or 15(d) of the Exchange Act, whichever event occurs first.

SECTION 4. RIGHTS OF FIRST REFUSAL.

4.1 Subsequent Offerings. Subject to applicable securities laws, each Investor holding at least 1,900,000 shares (as adjusted for any stock dividends, splits, combinations, recapitalizations and the like) of Series A Preferred Stock, Series B Preferred Stock, Series B-1 Preferred Stock and Series C Preferred Stock (each, a "***Major Holder***") shall have a right of first refusal to purchase all or any portion of its *pro rata* share of all Equity Securities, as defined below, that the Company may, from time to time, propose to sell and issue after the date of this Agreement, other than the Equity Securities excluded by Section 4.6 hereof. Each Major Holder's *pro rata* share is equal to the ratio of (x) the number of shares of the Common Stock (including all shares of Common Stock issuable or issued upon conversion of the Shares) held by such Major Holder immediately prior to the issuance of such Equity Securities to (y) the total number of shares of Common Stock (including all shares of Common Stock issued or issuable upon conversion of the Shares or upon the exercise of any outstanding warrants or options) outstanding immediately prior to the issuance of the Equity Securities. The term "***Equity Securities***" shall mean (a) any Common Stock, Preferred Stock or other security of the Company, (b) any security or right convertible into or exercisable or exchangeable for, with or

without consideration, any Common Stock, Preferred Stock or other security (including any option to purchase such a convertible security), (c) any security carrying any warrant or right to subscribe to or purchase any Common Stock, Preferred Stock or other security or (d) any such warrant or right.

4.2 Exercise of Rights. If the Company proposes to issue any Equity Securities, it shall give each Major Holder written notice (the "***Offer Notice***") of its intention, describing the Equity Securities, the price and the terms and conditions upon which the Company proposes to issue the same. Each Major Holder shall have forty-five (45) days after receipt of the Offer Notice to elect to purchase its *pro rata* share of the Equity Securities for the price and upon the terms and conditions specified in the Offer Notice by giving written notice to the Company and stating therein the quantity of Equity Securities to be purchased. If not all of the Major Holders elect to purchase their *pro rata* share of the Equity Securities, then the Company shall promptly notify in writing (the "***Overallotment Notice***") the Major Holders who elect to purchase their full pro rata share of the Equity Securities (each a "***Fully-Exercising Holder***") of any other Major

Holder's failure to do likewise and shall offer such Fully-Exercising Holder(s) the right to acquire such unsubscribed shares that the Major Holders were entitled to subscribe for but that were not subscribed for by the Major Holders (the "***Overallotment Shares***"). Each Fully-Exercising Holder shall have ten (10) days after receipt of the Overallotment Notice to notify the Company of its election to purchase up to such portion of the Overallotment Shares as is equal to the ratio of (x) the number of shares of the Common Stock (including all shares of Common Stock issuable or issued upon conversion of the Shares) held by such Fully-Exercising Holder immediately prior to the issuance of such Equity Securities to (y) the total number of shares of Common Stock (including all shares of Common Stock issued or issuable upon conversion of the Shares or upon the exercise of any outstanding warrants or options) held by all Fully-Exercising Holders immediately prior to the issuance of the Equity Securities. The closing of any sale pursuant to this Section 4.2 shall occur within sixty (60) days after the date that the Offer Notice is received by the Major Holders.

4.3 Issuance of Equity Securities to Other Persons. To the extent that the Major Holders fail to exercise in full the rights of first refusal pursuant to Section 4.2 with respect to the Equity Securities being offered by the Company, the Company shall have thirty (30) days after the expiration of the of the periods provided in Section 4.2 to sell the Equity Securities in respect of which the Major Holders' rights were not exercised, at a price and upon general terms and conditions no more favorable to the purchasers thereof than specified in the Offer Notice pursuant to Section 4.2 hereof. If the Company has not sold such Equity Securities within such thirty (30) day period, the Company shall not thereafter issue or sell any Equity Securities without first offering such securities to the Major Holders in the manner provided above.

4.4 Termination and Waiver of Rights of First Refusal. The rights of first refusal set forth in this Section 4 shall not apply to, and shall terminate immediately prior to the Qualified IPO. The rights of first refusal established by this Section 4 may be amended, or any provision waived with the written consent of the Required Holders pursuant to Section 5.5.

4.5 Transfer of Rights of First Refusal. The rights of first refusal of each Holder under this Section 4 may be transferred to the same parties as set forth in Section 2.9, subject to the same restrictions as any transfer of registration rights pursuant to Section 2.9.

4.6 Excluded Securities. The rights of first refusal set forth in this Section 4 shall have no application to the Exempted Securities (as defined in the Restated Certificate).

SECTION 5. MISCELLANEOUS.

5.1 Governing Law; Jurisdiction. This Agreement shall be governed by and construed under the laws of the State of Delaware in all respects as such laws are applied to agreements among Delaware residents entered into and performed entirely within Delaware. The parties agree that any action brought by any party under or in relation to this Agreement, including, without limitation, to interpret or enforce any provision of this Agreement, may be brought in, and each party agrees to and does hereby submit to the jurisdiction and venue of the state courts of the State of California and the State of Texas and to the jurisdiction of the United States District Court for the Northern District of California and the United States District Court for the Western District of Texas—Austin Division. Each party hereby waives, and agrees not to

assert, by way of motion, as a defense, or otherwise, in any such suit, action or proceeding, any claim that it is not subject personally to the jurisdiction of the above-named courts, that its property is exempt or immune from attachment or execution, that the suit, action or proceeding is brought in an inconvenient forum, that the venue of the suit, action or proceeding is improper or that this Agreement or the subject matter hereof may not be enforced in or by such court.

5.2 Successors and Assigns. Except as otherwise expressly provided herein, the provisions hereof shall inure to the benefit of, and be binding upon, the parties hereto and their respective successors, assigns, heirs, executors, and administrators and shall inure to the benefit of and be enforceable by each person who shall be a holder of Registrable Securities from time to time; *provided*, *however*, that any attempted Transfer of the rights of a Holder or Investor pursuant to this Agreement or pursuant to the Right of First Refusal Agreement that does not comply with the applicable provisions of the Right of First Refusal Agreement and Sections 2.9 and 4.5 of this Agreement and shall be void *ab initio* and shall not confer any rights on the purported transferee or assignee, and the Company may deem and treat the person listed as the holder of such shares in its records as the absolute owner and holder of such shares for all purposes, including the payment of dividends or any redemption price and voting or exercising the rights of a Holder or Investor pursuant to this Agreement or the Right of First Refusal Agreement. The rights of any Investor under this Agreement may be assigned, in whole or in part, to any Affiliate of such Investor in connection with a transfer of the related Registrable Securities by such Investor to such Affiliate.

5.3 Entire Agreement. This Agreement and the Exhibits and Schedules hereto constitute the full and entire understanding and agreement between the parties with regard to the subjects hereof and no party shall be liable or bound to any other in any manner by any oral or written representations, warranties, covenants and agreements except as specifically set forth herein. Each party expressly represents and warrants that it is not relying on any oral or written representations, warranties, covenants or agreements outside of this Agreement.

5.4 Severability. In the event one or more of the provisions of this Agreement should, for any reason, be held to be invalid, illegal or unenforceable in any respect, such invalidity, illegality, or unenforceability shall not affect any other provisions of this Agreement, and this Agreement shall be construed as if such invalid, illegal or unenforceable provision had never been contained herein.

5.5 Amendment and Waiver.

(a) Except as otherwise expressly provided herein, this Agreement may be amended, modified or terminated and observance of any provision of this Agreement may be waived (either generally or in a particular instance and either retroactively or prospectively) only with the written consent of the Company and the Required Holders. Notwithstanding the foregoing, this Agreement may not be amended, modified or terminated and the observance of any term hereof may not be waived with respect to any Investor without the written consent of such Investor if such amendment, modification, termination or waiver materially and adversely affects such Investor in a different manner than the other Investors (it being agreed that a waiver of the provisions of Section 4 with respect to a transaction shall not be deemed to materially and adversely affect any Major Holder in a different manner than the other Major Holders if such

Major Holder will not be able to purchase all or any portion of its *pro rata* share of Equity Securities if such waiver does so by its terms, notwithstanding the fact that certain Major Holders may nonetheless by agreement with the Company, purchase Equity Securities in such transaction). Any amendment, modification, termination or waiver effected in accordance with this Section 5.5 shall be binding upon the Company, each of the other parties hereto and any successor or permitted assignee of any such party whether or not such party, successor or assignee entered into or approved such amendment, modification or waiver.

(b) For the purposes of determining the number of Holders or Investors entitled to vote or exercise any rights hereunder, the Company shall be entitled to rely solely on the list of record holders of its stock as maintained by or on behalf of the Company.

5.6 Delays or Omissions. It is agreed that no delay or omission to exercise any right, power, or remedy accruing to any party, upon any breach, default or noncompliance by another party under this Agreement shall impair any such right, power, or remedy, nor shall it be construed to be a waiver of any such breach, default or noncompliance, or any acquiescence therein, or of any similar breach, default or noncompliance thereafter occurring. It is further agreed that any waiver, permit, consent, or approval of any kind or character on any party's part of any breach, default or noncompliance under this Agreement or any waiver on such party's part of any provisions or conditions of this Agreement must be in writing and shall be effective only to the extent specifically set forth in such writing. All remedies, either under this Agreement, by law, or otherwise afforded to any party, shall be cumulative and not alternative.

5.7 Notices. All notices required or permitted hereunder shall be in writing and shall be deemed effectively given: (a) upon personal delivery to the party to be notified, (b) when sent by confirmed electronic mail or facsimile if sent during normal business hours of the recipient; if not, then on the next business day, (c) five (5) days after having been sent by registered or certified mail, return receipt requested, postage prepaid, or (d) one (1) day after deposit with a nationally recognized overnight courier, specifying next day delivery, with written verification of receipt. All communications shall be sent (x) to the Company at the address as set forth on the signature page hereof, with a copy to Vinson & Elkins L.L.P., Terrace 7, 2801 Via Fortuna, Suite 100, Austin, Texas 78746, Attention: William R. Volk, (512) 236-3450 (fax), and (y) to any other party to be notified at the address as set forth on the signature pages hereof or **Exhibit A** hereto (and in the case of notice to Sofinnova, with a copy, which shall not constitute notice, to O'Melveny & Myers LLP, 2765 Sand Hill Road, Menlo Park, CA 94025, Attention: Brian Covotta, (650) 473-2601 (fax)) or at such other address or electronic mail address as such party may designate by ten (10) days advance written notice to the other parties hereto.

5.8 Attorneys' Fees. In the event that any suit or action is instituted under or in relation to this Agreement, including, without limitation, to enforce any provision in this Agreement, the prevailing party in such dispute shall be entitled to recover from the losing party all fees, costs and expenses of enforcing any right of such prevailing party under or with respect to this Agreement, including, without limitation, such reasonable fees and expenses of attorneys and accountants, which shall include, without limitation, all fees, costs and expenses of appeals.

5.9 Titles and Subtitles. The titles of the sections and subsections of this Agreement are for convenience of reference only and are not to be considered in construing this Agreement.

5.10 Additional Investors. Notwithstanding anything to the contrary contained herein, if the Company shall issue additional shares of Preferred Stock after the date hereof, any purchaser of such shares of Preferred Stock may become a party to this Agreement by executing and delivering an additional counterpart signature page to this Agreement and shall be deemed an "Investor," a "Holder" and a party hereunder. Notwithstanding anything to the contrary contained herein, each stockholder of Asuragen, Inc., a Delaware corporation ("***Asuragen***"), who received Registrable Securities in connection with the distribution by Asuragen of the Equity Securities held by Asuragen on December 31, 2009 automatically, and without any further action on the part of the Company, Asuragen, such stockholder or any other person, became a party to this Agreement and shall be deemed an "Investor," a "Holder" and a party hereunder, and shall be bound by this Agreement to the same extent as if such stockholder had joined in the execution and delivery of this Agreement.

5.11 Counterparts. This Agreement may be executed in two or more counterparts, each of which shall be an original, but all of which together shall constitute one instrument.

5.12 Aggregation of Stock. All shares of Preferred Stock or Registrable Securities held or acquired by affiliated entities or persons or persons or entities under common management or control shall be aggregated together for the purpose of determining the availability of any rights under this Agreement.

5.13 Pronouns. All pronouns contained herein, and any variations thereof, shall be deemed to refer to the masculine, feminine or neutral, singular or plural, as to the identity of the parties hereto may require.

5.14 Prior Agreement. The Company and the Investors party to the Prior Agreement (which parties hold the requisite percentages to amend the Prior Agreement by written consent) hereby amend and restate the Prior Agreement in its entirety and the Prior Agreement shall automatically terminate and be no further force or effect.

[THIS SPACE INTENTIONALLY LEFT BLANK]

IN WITNESS WHEREOF, the parties hereto have executed this **SECOND AMENDED AND RESTATED INVESTOR RIGHTS AGREEMENT** as of the date set forth in the first paragraph hereof.

COMPANY:

MIRNA THERAPEUTICS, INC.

By: /s/ Lynn Hohlfeld
Name: Lynn Hohlfeld
Title: Chief Financial Officer

Address: 2150 Woodward Street, Suite 100
Austin, Texas 78744

IN WITNESS WHEREOF, the parties hereto have executed this **SECOND AMENDED AND RESTATED INVESTOR RIGHTS AGREEMENT** as of the date set forth in the first paragraph hereof.

INVESTOR:

SOFINNOVA VENTURE PARTNERS VIII, L.P.

By: Sofinnova Management VIII, L.L.C.,
its General Partner

By: /s/ Michael F. Powell
Name: Michael F. Powell
Title: Managing Member

Address: 2800 Sand Hill Road, Suite 150
Menlo Park, CA 94025

IN WITNESS WHEREOF, the parties hereto have executed this **SECOND AMENDED AND RESTATED INVESTOR RIGHTS AGREEMENT** as of the date set forth in the first paragraph hereof.

INVESTORS:

NEW ENTERPRISE ASSOCIATES 14, L.P.

By: NEA Partners 14, L.P., its general partner
By: NEA 14 GP, LTD, its general partner

By: /s/ Louis S. Citron
Name: Louis S. Citron
Title: Chief Legal officer

Address: 1954 Greenspring Drive., Suite 600
Timonium, MD 21093

NEA VENTURES 2012, LIMITED PARTNERSHIP

By: /s/ Louis S. Citron
Name: Louis S. Citron
Title: Vice President

Address: 1954 Greenspring Drive., Suite 600
Timonium, MD 21093

IN WITNESS WHEREOF, the parties hereto have executed this **SECOND AMENDED AND RESTATED INVESTOR RIGHTS AGREEMENT** as of the date set forth in the first paragraph hereof.

INVESTOR:

PFIZER INC.

By: /s/ Barbara Dalton
Name: Barbara Dalton
Title: VP Venture Capital
Worldwide Business Development

Address: 235 East 42nd Street
New York, NY 10017

IN WITNESS WHEREOF, the parties hereto have executed this **SECOND AMENDED AND RESTATED INVESTOR RIGHTS AGREEMENT** as of the date set forth in the first paragraph hereof.

INVESTOR:

OSAGE UNIVERSITY PARTNERSHIP I, L.P.

By: Osage University GP, LP, its general partner
By: Osage Partners, LLC, general partner

By: /s/ William Harrington
Name: William Harrington
Title: Member

Address: Osage Management Co., L.P.
50 Monument Road
Suite 201
Bala Cynwyd, PA 19004

IN WITNESS WHEREOF, the parties hereto have executed this **SECOND AMENDED AND RESTATED INVESTOR RIGHTS AGREEMENT** as of the date set forth in the first paragraph hereof.

INVESTOR:

CORRELATION VENTURES, L.P.
As nominee for Correlation Ventures L.P.,
Correlation Ventures Executives Fund, L.P.

By: Carrel — Ventures GP, LLC

By: /s/ David E. Coats
Name: David E. Coats
Title: Managing Member

Address: 9255 Towne Center Drive, Suite 350
San Diego, CA 92121

IN WITNESS WHEREOF, the parties hereto have executed this **SECOND AMENDED AND RESTATED INVESTOR RIGHTS AGREEMENT** as of the date set forth in the first paragraph hereof,

INVESTOR:

/s/ Matthew Winkler
Matthew Winkler

Address: [Address]

IN WITNESS WHEREOF, the parties hereto have executed this **SECOND AMENDED AND RESTATED INVESTOR RIGHTS AGREEMENT** as of the date set forth in the first paragraph hereof.

INVESTOR:

/s/ Neile P Wolfe
Neile P. Wolfe

Address: [Address]

IN WITNESS WHEREOF, the parties hereto have executed this **SECOND AMENDED AND RESTATED INVESTOR RIGHTS AGREEMENT** as of the date set forth in the first paragraph hereof.

INVESTOR:

DANIEL WINKLER 2000 TRUST

By: /s/ Mary Beth Bigger
Name Mary Beth Bigger
Title: Trustee

Address: [Address]

IN WITNESS WHEREOF, the parties hereto have executed this **SECOND AMENDED AND RESTATED INVESTOR RIGHTS AGREEMENT** as of the date set forth in the first paragraph hereof.

INVESTOR:

JOHN WINKLER 2000 TRUST

By: /s/ Mary Beth Bigger
Name: Mary Beth Bigger
Title: Trustee

Address: [Address]

IN WITNESS WHEREOF, the parties hereto have executed this **SECOND AMENDED AND RESTATED INVESTOR RIGHTS AGREEMENT** as of the date set forth in the first paragraph hereof.

INVESTOR:

JOSHUA WINKLER 2000 TRUST

By: /s/ Mary Beth Bigger
Name: Mary Beth Bigger
Title: Trustee

Address: [Address]

IN WITNESS WHEREOF, the parties hereto have executed this **SECOND AMENDED AND RESTATED INVESTOR RIGHTS AGREEMENT** as of the date set forth in the first paragraph hereof.

INVESTOR:

/s/ Roland Carlson

Roland Carlson

Address: [Address]

IN WITNESS WHEREOF, the parties hereto have executed this **SECOND AMENDED AND RESTATED INVESTOR RIGHTS AGREEMENT** as of the date set forth in the first paragraph hereof.

INVESTOR:

/s/ John E. Mooney

John E. Mooney

Address: [Address]

IN WITNESS WHEREOF, the parties hereto have executed this **SECOND AMENDED AND RESTATED INVESTOR RIGHTS AGREEMENT** as of the date set forth in the first paragraph hereof.

INVESTOR:

/s/ Robert E. Maxson, Jr.

Robert E. Maxson, Jr

Address: [Address]

IN WITNESS WHEREOF, the parties hereto have executed this **SECOND AMENDED AND RESTATED INVESTOR RIGHTS AGREEMENT** as of the date set forth in the first paragraph hereof.

INVESTOR:

/s/ William Bennett

William Bennett

Address: [Address]

IN WITNESS WHEREOF, the parties hereto have executed this **SECOND AMENDED AND RESTATED INVESTOR RIGHTS AGREEMENT** as of the date set forth in the first paragraph hereof.

INVESTOR:

/s/ John D. Hershey

John D. Hershey

Address: [Address]

IN WITNESS WHEREOF, the parties hereto have executed this **SECOND AMENDED AND RESTATED INVESTOR RIGHTS AGREEMENT** as of the date set forth in the that paragraph hereof

INVESTOR:

/s/ David W. Sargent

David W. Sargent

Address: [Address]

IN WITNESS WHEREOF, the parties hereto have executed this **SECOND AMENDED AND RESTATED INVESTOR RIGHTS AGREEMENT** as of the date set forth in the first paragraph hereof.

INVESTOR:

THE STATE OF TEXAS

By: /s/ Jeffrey S. Boyd
Name: Jeffrey S. Boyd
Title: Chief of Staff, Office of the Governor

Address: Financial Services
ETF Compliance
PO Box 12878
Austin, TX 78711-2878

with a concurrent copy to:

ATTN: Emerging Technology Fund
Award Program
General Counsel
Office of the Governor
P.O. Box 12428
Austin, Texas 78711

IN WITNESS WHEREOF, the parties hereto have executed this **SECOND AMENDED AND RESTATED INVESTOR RIGHTS AGREEMENT** as of the date set forth in the first paragraph hereof.

INVESTOR:

PTV SCIENCES II, L.P.

By: Pinto Technology Ventures GP, L.P.,
its general partner

By: Pinto TV GP Company LLC,
its general partner

By: /s/ Evans S. Melrose, M.D.
Name: Evan S. Melrose, M.D.
Title: Authorized Person

Address:

IN WITNESS WHEREOF, the parties hereto have executed this **SECOND AMENDED AND RESTATED INVESTOR RIGHTS AGREEMENT** as of the date set forth in the first paragraph hereof.

INVESTOR:

/s/ Christopher Earl
Christopher Earl

Address: [Address]

EXHIBIT A

SCHEDULE OF INVESTORS

Series C Investors

Sofinnova Venture Partners VIII, L.P.
New Enterprise Associates 14, L.P.
NEA Ventures 2012, Limited Partnership
Pfizer Inc.
Osage University Partners I, L.P.
Correlation Ventures, L.P.
Bennett, William
Carlson, Rolland
Hershey, John D.
Maxson Jr., Robert E.
Mooney, John E.
Sargent, David W.
Winkler, Matthew
Wolfe, Neile P.
Daniel Winkler 2000 Trust
John Winkler 2000 Trust
Joshua Winkler 2000 Trust

Series B-1 Investors

The Office of Governor Economic Development and Tourism of the State of Texas

Series B Investors

Bennett, William
Carlson, Rolland
Finch, Michele
Hershey, John and Panda
Hershey, John D.
Maxson Jr., Robert E.
Smitheal, Jeremy
The Steinhardt/Alderton 2005 Revocable Living Trust
Winkler, Matthew

Series A Investors

Ann S. Bowers Separate Property Trust
Asuragen, Inc.
Bennett, William
Blackstone Holdings III, LP Quebec SEC
BPEF 2 Ambion Partners, LP
Brown, David

Carlson, Rolland
Dahler, John
Dan Hill and Associates Money Purchase Pension Plan
Earl, Christopher D.
Glassmeyer, Penelope M.
Growth Capital Partners, L.P.
Hajim, Edmund A.
Haverford Florida, LLC
High Plains Investments, LLP
Hime, John A.
Hippocrates Partners, L.P.
HOC Investments, LLC
Hollister, Rachelle
Hunicke-Smith, Scott
Innovative Promotions LLC
Investment Fund, LP
Jacobs, Melvin
James F. Clark, Limited Partner
Jean Calhoun QPRT Trust
Kaderli, Mark D.
Karcher, John D.
Labourier, Emmanuel
Leander, Bruce W.
Lim, Su-min
Lone Juniper, LP (Lone Pine Capital)
Mailer, James L.
Martinez, Noel
Mary P. Adams Family Trust
Maxson Jr., Robert E.
McNabb II, John T.

Miller, Craig
Mont Blanc Holdings, LLC
Mooney, John E.
Moses, Bianca
Moss, Donell
Neufeld, Todd
OKAY Investment Club
The Osterweis Revocable Trust U/A dated 9/13/93
Pasloske, Brittan
Peter Rauenbuehler and Mary L. Mines Trust
The Karen Winkler Phillips Family Trust UTD 3/19/2004
PTV Sciences II, LP
Rebello, James
Robert Calhoun QPRT Trust
RogHen I Limited Partnership
Rutman, James Morgan

Sargent, David W.
Schmaltz, Richard R.
Shelton, Jeffrey and Elizabeth
Sluder, Greenfield
The Steinhardt/Alderton 2005 Revocable Living Trust
Stenzel, Tim
Sullivan, Gregory W.
Suryaputra, Ivonne
TekkiShodan Limited Partnership
Telegraph Hill Partners SBIC, L.P.
Telegraph Hill Partners, L.P.
The Michele Finch Living Trust
The Michael K. Wilson Revocable Trust
THP Affiliates Fund, LLC
Thornburgh, Richard E.
Vallejo, Ramiro R.
Von Rumohr, Cai
Walkerpeach, Cindy
Weiss, Dr. Arnold-Peter C.
Williams, Jeffrey
Winkler, Matthew
Daniel Winkler 2000 Trust
John Winkler 2000 Trust
Joshua Winkler 2000 Trust
Wolfe, Neile P.
Wyper, George U.
Wyper Partners, LLC
Zdeblick, Dr. Thomas A. and Catherine D.

MIRNA THERAPEUTICS, INC.

AMENDMENT NO. 1 TO SECOND AMENDED AND RESTATED INVESTOR RIGHTS AGREEMENT

THIS AMENDMENT NO. 1 TO SECOND AMENDED AND RESTATED INVESTOR RIGHTS AGREEMENT (this "***Amendment***") is entered into as of this 21st day of March, 2014, and amends that certain Second Amended and Restated Investor Rights Agreement (the "***Agreement***"), by and among **MIRNA THERAPEUTICS, INC.**, a Delaware corporation (the "***Company***"), and each of the persons and entities listed on **Exhibit A** thereto (the "***Investors***" and each individually an "***Investor***"). Capitalized terms used herein but not otherwise defined herein shall have the meanings ascribed to such terms in the Agreement.

RECITALS

WHEREAS, the Company and the undersigned Investors desire to amend the Agreement to provide clarification to the definition of the term "Required Holders" with respect to any potential ambiguity that may arise under the existing definition in the event the shares of Preferred Stock convert into shares of Common Stock in connection with an Initial Offering;

WHEREAS, pursuant to Section 5.5 of the Agreement, the Agreement may be amended, modified or terminated and observance of any provision of the Agreement may be waived (either generally or in a particular instance and either retroactively or prospectively) only with the written consent of the Company and the Required Holders;

WHEREAS, any amendment, modification, termination or waiver effected in accordance with Section 5.5 of the Agreement shall be binding upon the Company, each of the other parties to the Agreement and any successor or permitted assignee of any such party whether or not such party, successor or assignee entered into or approved such amendment, modification or waiver; and

WHEREAS, the undersigned Investors constitute the Required Holders under the Agreement.

NOW, THEREFORE, in consideration of these premises and for other good and valid consideration, the receipt and sufficiency of which are hereby acknowledged, the Company and the undersigned Required Holders hereby agree that the Agreement shall be amended as follows:

AGREEMENT

Section 1. **Amendment to Section 1.** Section 1(q) of the Agreement is hereby amended and restated in its entirety to read as follows:

"**(q)** "***Required Holders***" means the Investors holding at least a majority of the then outstanding shares of Common Stock issued or issuable upon the conversion of the Preferred Stock."

Section 2. **Effect of this Amendment.** This Amendment shall form a part of the Agreement for all purposes, and each party thereto and hereto shall be bound hereby. From and after the execution of this Amendment by the parties hereto, any reference to the Agreement shall be deemed a reference to the Agreement as amended hereby. This Amendment shall be deemed to be in full force and effect from and after the execution of this Amendment by the parties hereto. Except as specifically amended as set forth herein, each term and condition of the Agreement shall continue in full force and effect.

Section 3. **Governing Law.** This Amendment shall be governed by and construed under the laws of the State of Delaware in all respects as such laws are applied to agreements among Delaware residents entered into and performed entirely within Delaware.

Section 4. **Counterparts; Electronic and Facsimile Signatures.** This Amendment may be executed in any number of counterparts, each of which when so executed and delivered will be deemed an original, and all of which together shall constitute one and the same agreement. This Amendment may be executed and delivered electronically (including by transmission of .pdf files) and by facsimile and, upon such delivery, such signatures will be deemed to have the same effect as if the original signature had been delivered to the other party.

[THIS SPACE INTENTIONALLY LEFT BLANK]

IN WITNESS WHEREOF, the parties hereto have executed this **AMENDMENT NO. 1 TO SECOND AMENDED AND RESTATED INVESTOR RIGHTS AGREEMENT** as of the date set forth in the first paragraph hereof.

COMPANY:

MIRNA THERAPEUTICS, INC.

By: /s/ Paul Lammers
Name: Paul Lammers, M.D., M.Sc.
Title: President and Chief Executive Officer

IN WITNESS WHEREOF, the parties hereto have executed this **AMENDMENT NO. 1 TO SECOND AMENDED AND RESTATED INVESTOR RIGHTS AGREEMENT** as of the date set forth in the first paragraph hereof.

INVESTOR:

SOFINNOVA VENTURE PARTNERS VIII, L.P.

By: Sofinnova Management VIII, L.L.C.,
its General Partner

By: /s/ Mike Powell
Name: Mike Powell
Title:

IN WITNESS WHEREOF, the parties hereto have executed this **AMENDMENT NO. 1 TO SECOND AMENDED AND RESTATED INVESTOR RIGHTS AGREEMENT** as of the date set forth in the first paragraph hereof.

INVESTORS:

NEW ENTERPRISE ASSOCIATES 14, L.P.

By: NEA Partners 14, L.P., its general partner
By: NEA 14 GP, LTD, its general partner

By: /s/ Louis S. Citron
Name: Louis S. Citron
Title: Chief Legal Officer

NEA VENTURES 2012, LIMITED PARTNERSHIP

By: /s/ Louis S. Citron
Name: Louis S. Citron
Title: Vice-President

IN WITNESS WHEREOF, the parties hereto have executed this **AMENDMENT NO. 1 TO SECOND AMENDED AND RESTATED INVESTOR RIGHTS AGREEMENT** as of the date set forth in the first paragraph hereof.

INVESTOR:

PFIZER INC.

By: /s/ Barbara Dalton
Name: Barbara Dalton
Title: VP, Venture Capital

[***] Certain information in this document has been omitted and filed separately with the Securities and Exchange Commission. Confidential treatment has been requested with respect to the omitted portions.

CROSS LICENSE AGREEMENT

This Cross License Agreement (this "**Agreement**") is made as of the **Effective Date** (as such term is defined below) by and between Asuragen, Inc., a Delaware corporation with its principal offices at 2150 Woodward St., Austin, Texas 78744 ("**Asuragen**") and Mirna Therapeutics, Inc., a Delaware corporation with an office at 2150 Woodward Street, Austin, Texas 78744 ("**Mirna**"); (each of Asuragen and Mirna is referred to herein as "**Party**" and together as the "**Parties**").

RECITALS

WHEREAS, pursuant to an Asset Contribution Agreement (the "**Contribution Agreement**") between Asuragen and Mirna which agreement closed on the Effective Date, Asuragen contributed the assets and liabilities of its therapeutics division (collectively, the "**Therapeutics Business**") to Mirna (the "**Contribution**");

WHEREAS, Asuragen and Mirna each own or control certain patent rights and other intellectual property rights as part of their respective businesses;

WHEREAS, the Parties each wish to establish their respective rights and obligations with respect to specified patent rights and other intellectual property rights of the other;

NOW, THEREFORE, in consideration of these premises and the mutual covenants and agreements set forth herein, the sufficiency of which is hereby acknowledged, the Parties agree as follows:

AGREEMENT

1. DEFINITIONS

In addition to other terms defined elsewhere herein, the following terms and expressions, as used in this Agreement, shall have the meanings indicated:

1.1. "**Affiliate**" of a Party shall mean any corporation or other entity that is directly or indirectly controlling, controlled by or under common control with such Party. For the purpose of this definition, "control" shall mean the direct or indirect ownership of more than fifty percent (50%) of the shares of the subject entity entitled to vote in the election of directors (or, in the case of an entity that is not a corporation, for the election of the corresponding managing authority), or more than fifty percent (50%) interest in the income of such entity.

1.2. "**Ancillary Agreements**" shall mean the following agreements between the Parties entered into as of the Effective Date: this Agreement, [***], Services Agreement, [***].

1.3. "**Effective Date**" shall mean the date of the closing of the Asset Contribution Agreement.

1.4. "**Controlled**" shall mean, with respect to any item of technology or the related IP thereto, the possession of the right, whether directly or indirectly, and whether by ownership, license or otherwise, to disclose, deliver, assign, or grant a license, sublicense or other right to or under such applicable technology or related IP, of the scope and as provided for herein, without any of the following: (i) violating the terms of any agreement or other arrangement with any Third Party existing as or the Effective Date; or (ii) violating any law, regulation, rule, code, order or other requirement of any federal, state, foreign, local, or other government body or the need for any additional permits, payments, authorizations, or approvals under any such law, regulation, rule, code, order or requirement.

1.5. "**Therapeutics**" shall mean the field of therapeutics.

1.6. "**Disclosures**" shall mean the technical disclosures, together with any accompanying documents and materials, described in Exhibit C.

1.7. "**Diagnostics**" shall mean the field of diagnostics.

1.8. "**Intellectual Property**" or "**IP**" shall mean and includes all apparatus, assay components, biological materials, cell lines, clinical data, chemical compositions or structures, databases and data collections, diagrams, formulae, inventions (whether or not patentable), know-how, methods, processes, proprietary information, protocols, schematics, specifications, software, software code (in any form including source code and executable or object code), techniques, works of authorship, and other forms of technology (whether or not embodied in any tangible form and including all tangible embodiments of the foregoing such as instruction manuals, laboratory notebooks, prototypes, samples, studies, and summaries), together with any and all Patent Rights, trade secret rights, copyrights and other intellectual property rights in each of the foregoing.

1.9. "**Inventions**" shall mean inventions, discoveries, improvements, processes, formulae, data, works, know-how and other information, patentable or otherwise, that are conceived solely by one or more employees of a Party or jointly by one or more employees of a Party with one or more employees of the other Party, regardless of whether within the scope of any of the Ancillary Agreements or otherwise.

1.10. "**Joint Invention IP**" shall mean all Intellectual Property in and to any Joint Invention (defined in Section 2.2) owned or Controlled jointly by the Parties.

1.11. "**Licensed Method**" shall mean a method that but for the particular license being granted would infringe or misappropriate the Intellectual Property being licensed. For clarity, the definition of Licensed Methods varies and is limited according to the particular Intellectual Property being licensed on a grant-by-grant basis. A Licensed Method under one particular license grant set forth in Article 3 shall not be read to encompass Licensed Methods licensed under a different license grant in such Article 3.

1.12. "**Licensed Product**" shall mean a product or service that but for the particular license being granted would infringe or misappropriate the Intellectual Property being licensed. For clarity, the definition of Licensed Products varies and is limited according to the particular Intellectual Property being licensed on a grant-by-grant basis. A Licensed Product under one

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particular license grant set forth in Article 3 herein shall not be read to encompass Licensed Products licensed under a different license grant in such Article 3.

1.13. "**Mirna Existing IP**" shall mean all Intellectual Property, set forth in Exhibit A owned or Controlled by Mirna immediately following the completion of the Contribution Agreement and acquired by Mirna through the completion of the Contribution.

1.14. "**Patent Rights**" shall mean the issued patents and pending patent applications in any country, including, but not limited to, all provisional applications, substitutions, continuations, continuations-in-part, divisionals, and renewals, all letters patent granted thereon, and all reissues, reexaminations and extensions thereof and all patents and patent applications claiming priority therefrom.

1.15. "**Mirna Developed IP**" shall mean all IP owned or Controlled by Mirna after the Effective Date other than Mirna Existing IP.

1.16. "**Asuragen Licensed IP**" shall mean the IP described in Exhibit B.

1.17. "**Asuragen Developed IP**" shall mean all IP owned or Controlled by Asuragen after the Effective Date other than Asuragen Licensed IP.

1.18. "**Third Party**" shall mean any party or entity other than Asuragen or Asuragen or an Affiliate of either of them.

1.19. "**Valid Claim**" shall mean a claim of an issued and unexpired patent, which has not been held unenforceable, unpatentable or invalid by a court or other governmental agency of competent jurisdiction, and which has not been admitted to be invalid or unenforceable through reissue, disclaimer or otherwise.

2. INTELLECTUAL PROPERTY OWNERSHIP

2.1. Existing Intellectual Property. The Parties acknowledge and agree that upon the closing of the Asset Contribution Agreement, Mirna shall be the exclusive owner of all right, title and interest in and to the Mirna Existing IP subject to the license granted herein to Asuragen. The Parties further acknowledge and agree that Asuragen shall be the exclusive owner of all right, title and interest in and to the Asuragen Existing IP subject to the licenses granted herein to Mirna.

2.2. Post-Effective Date Intellectual Property. Subject to the express licenses granted by either Party to the other Party pursuant to this Agreement and except as otherwise described in the Collaboration Agreement, the entire right, title and interest in and to any and all Inventions conceived: (a) solely by employees or consultants of Asuragen shall be owned solely by Asuragen and be deemed Asuragen Developed IP; (b) solely by employees or consultants of Mirna shall be owned solely by Mirna and be deemed Mirna Developed IP; and (c) jointly by employees or consultants of Asuragen and employees or consultants of Mirna (each a "**Joint Invention**") shall be [***]. If there is a dispute regarding whether or not a Joint Invention is [***], the Parties agree that a senior executives from each Party shall meet to attempt to resolve

[***] Certain information in this document has been omitted and filed separately with the Securities and Exchange Commission. Confidential treatment has been requested with respect to the omitted portions.

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the dispute. If, however, the Parties' senior executives are unable to resolve the dispute within [***], the Parties agree to [***]. The Parties agree that [***].

Any [***] and shall be subject to the obligations set forth in this Agreement. Any [***] and shall be subject to the obligations set forth in this Agreement.

Each Party shall cause its employees and consultants to, make a full disclosure of any and all Inventions, and promptly upon such disclosure, and in no event later than [***] days thereafter, shall provide to the other Party a copy of any disclosure that consists of a Joint Invention. Each Party also agrees to execute any documents necessary to perfect the other Party's rights in a Joint Invention.

2.3. Invention Disclosures. Mirna shall own the Disclosure and all IP therein shall revert to Mirna and all IP therein shall be deemed Mirna Existing IP for all purposes.

3. LICENSE GRANTS

3.1. Asuragen License Grant to Mirna. Asuragen hereby grants to Mirna under the Asuragen Licensed IP a fully paid-up, royalty-free, perpetual, irrevocable worldwide, fully sublicensable and non-transferable (except in accordance with Section 12.5), ***exclusive*** (even as to Asuragen) right and license within the field of Therapeutics to make, have made, use, sell, offer to sell, distribute, have distributed, import, market and otherwise exploit Licensed Products and practice Licensed Methods. Mirna may also use the Asuragen Licensed IP for its internal research efforts.

3.2. Mirna License Grant to Asuragen under Mirna Existing IP. Mirna hereby grants to Asuragen, under the Mirna Existing IP a fully paid-up, royalty-free, perpetual, irrevocable, worldwide, fully sublicensable and non-transferable (except in accordance with Section 12.5), ***exclusive*** (even as to Mirna) right and license within the field of Diagnostics to make, have made, use, sell, offer to sell, distribute, have distributed, import, market and otherwise exploit Licensed Products and to practice the Licensed Methods. Asuragen may also use the Mirna IP for its internal research efforts.

3.3. Rights of Affiliates. Either Party may extend the right and license granted to it under Section 3.1, 3.2 or 3.3, as the case may be, to such Party's Affiliates.

3.4. Access to Existing Know-how. For a period of [***] after the Effective Date, upon reasonable request, each Party shall provide or otherwise make available to the other Party [***], in its possession and in existence immediately after the Effective Date (the "**Existing Know-How**"). Each Party and its Affiliates, licensees and sublicensees may use such Existing Know-How subject to the licenses set forth in Sections 3.1 and 3.2 as reasonably required to exercise such Party's rights thereunder. Any such disclosed Existing Know-How shall be subject at all times to the confidentiality obligations of Article 11 (Proprietary Information).

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4. CERTAIN COVENANTS AND RESTRICTIONS

4.1. Employee Solicitation. Each of Asuragen and Mirna hereby agrees it will not directly or indirectly solicit, offer employment to, or employ any employee of the other Party, [***] after the Effective Date, provided; however, that such restriction shall not apply to:

(a) [***];

(b) [***], with the prior written consent of the other Party; or

(c) [***], with the prior written consent of the terminating Party, such consent not to be unreasonably withheld.

4.2. Websites. For a [***] commencing on the Effective Date, Asuragen shall provide [***], in a manner to be mutually agreed upon by the Parties. At Mirna's request, Asuragen shall provide [***], in a manner to be mutually agreed upon by the Parties.

5. REPRESENTATIONS AND WARRANTIES

5.1. Representations and Warranties of the Parties. Each Party represents and warrants to the other Party that (a) each has the full power and authority to enter into this Agreement and to perform its obligations hereunder; (b) each has the requisite right and authority to enter into this Agreement and grant the rights and licenses hereunder, without the need for any license, release, consent, approval or other immunity not yet obtained or issued; and (c) each has not previously granted and will not grant any right or license in any the Patent Rights in Mirna Existing IP, Asuragen Licensed IP, the Yale IP (as applicable) that are inconsistent with the rights and licenses granted herein.

5.2. Disclaimer. EXCEPT AS EXPRESSLY PROVIDED FOR IN THIS AGREEMENT, NEITHER PARTY MAKES, AND EACH PARTY HEREBY DISCLAIMS, ANY AND ALL REPRESENTATIONS OR WARRANTIES OF ANY KIND, EXPRESS OR IMPLIED, WITH RESPECT TO THE SUBJECT MATTER OF THIS AGREEMENT, INCLUDING WITHOUT LIMITATION WARRANTIES OF MERCHANTABILITY, OR FITNESS FOR A PARTICULAR PURPOSE.

6. INDEMNIFICATION

6.1. Indemnification by Asuragen. Asuragen shall defend, indemnify and hold harmless Asuragen and its Affiliates, sublicensees and distributors and each of their respective officers, directors, shareholders, employees, agents, successors and assigns from and against all claims, demands, causes of action, suits or proceedings by a Third Party ("**Claims**"), to the extent arising out of (a) a breach by Asuragen of any of its representations, warranties, covenants or agreements under this Agreement, or (b) the manufacture, use, handling, storage, marketing, sale, distribution or other disposition of the any product or service pursuant to the licenses granted herein by Asuragen. Asuragen shall pay any and all damages, liabilities, losses, settlements, costs (including, without limitation, reasonable attorneys' fees and costs), awarded by a court as a result of such Claim. Asuragen's foregoing obligation to indemnify, defend and hold harmless shall not apply to such portion of any Claims arising or resulting from: (i) a

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breach or nonfulfillment of any representation, warranty or covenant of (A) the Company (as defined in the Merger Agreement) set forth in the Merger Agreement; or (B) Asuragen (or any of the other indemnified parties above) set forth in any of the Ancillary Agreements; or (ii) any gross negligence or willful misconduct of Asuragen (or any of the other indemnified parties set forth in this Section 7.1) or of the Company (as defined in the Merger Agreement). Except as provided in the preceding sentence, the foregoing obligation to indemnify, defend and hold harmless shall be in addition to, and not diminish in any way, Asuragen's indemnification obligations pursuant to the other Ancillary Agreements.

6.2. Indemnification by Mirna. Mirna shall defend, indemnify and hold harmless Asuragen and its Affiliates, sublicensees and distributors and each of their respective officers, directors, shareholders, employees, agents, successors and assigns from and against all Claims, to the extent arising out of (a) a breach by Asuragen of any of its representations, warranties, covenants or agreements under this Agreement, or (b) the manufacture, use, handling, storage, marketing, sale, distribution or other disposition of any product or service pursuant to the licenses granted herein by Asuragen, its Affiliates, agents or sublicensees. Mirna shall pay any and all damages, liabilities, losses, settlements, costs (including, without limitation, reasonable attorneys' fees and costs), awarded by a court as a result of such Claim. Asuragen's foregoing obligation to indemnify, defend and hold harmless shall not apply to such portion of any Claims arising or resulting from: (i) a breach or nonfulfillment of any representation, warranty or covenant of (A) the Parent (as defined in the Merger Agreement) set forth in the Merger Agreement; or (B) Asuragen (or any of the other indemnified parties set forth in Section 7.2 above) set forth in any of the Ancillary Agreements; or (ii) any gross negligence or willful misconduct of Asuragen (or any of the other indemnified parties set forth in this Section 7.2) or of the Parent (as defined in the Merger Agreement). Except as provided in the preceding sentence, the foregoing obligation to indemnify, defend and hold

harmless shall be in addition to, and not diminish in any way, Asuragen's indemnification obligations pursuant to the other Ancillary Agreements, nor the indemnification obligations set forth in Article X of the Merger Agreement.

6.3. Notice and Procedure. The indemnified Party shall provide indemnifying Party prompt written notice of any such Claim. The indemnifying Party shall have right to control the defense and settlement of such Claim; provided that (a) the indemnifying Party shall not settle any such Claim without the prior written consent of the indemnified Party, which consent will not be unreasonably withheld or delayed and (b) the indemnified Party may, at its option and expense, participate in connection with the defense and settlement of any such Claim. The indemnified Party shall provide, at the indemnifying Party's request and expense, reasonable cooperation in defending or settling any such Claim.

7. LIMITATION ON LIABILITY

EXCEPT FOR INDEMNIFICATION OBLIGATIONS SET FORTH IN SECTION 7, IN NO EVENT SHALL EITHER PARTY BY LIABLE TO THE OTHER FOR ANY INDIRECT, SPECIAL, INCIDENTAL, OR CONSEQUENTIAL DAMAGES OF ANY KIND, INCLUDING, BUT NOT LIMITED TO, LOSS OF BUSINESS, LOSS OF USE, LOSS OF PROFITS, OR INTERRUPTION OF BUSINESS, ARISING FROM OR RELATING TO THIS AGREEMENT OR THE SUBJECT MATTER HEREOF, INCLUDING THE BREACH

HEREOF, EVEN IF SUCH PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES, HOWEVER, CAUSED.

8. PROSECUTION AND MAINTENANCE

8.1. Prosecution and Maintenance. Asuragen shall have the first right, but not the obligation, to maintain all patents within Asuragen Licensed IP and to prosecute and maintain any patent applications relating thereto. Mirna shall have the first right, but not the obligation, to maintain all patents within Mirna Existing IP and to prosecute and maintain any patent applications relating thereto. Each Party shall reasonably cooperate and assist the other Party in connection with any prosecution and maintenance activities under this Section 9.1, including for any Joint Invention. The Party responsible for prosecution shall provide the other Party all material documentation and correspondence from, sent to or filed with patent offices regarding the Patent Rights and with a reasonable opportunity to review and comment upon all filings with such patent offices in advance. The costs associated with such prosecution and maintenance activities shall be borne exclusively by the Party responsible for prosecution except where the Parties have agreed to collaborate in which event, the costs shall be divided equally between the Parties.

8.2. Abandoned Patents. In the event that the Party that owns a given issued patent or a given patent application wherein such patent or patent application was in existence prior to the Effective Date and is subject to this Agreement, elects not to continue prosecution of such patent application, or elects not to maintain such issued patent (such patents and applications being "**Abandoned Patents**"), the owning Party shall promptly and on a timely basis, and at least [***] before any deadline for response, submission or other action, notify the other Party thereof and the other Party shall have the right, but not the obligation, at its option, to prosecute and maintain such Abandoned Patents, at such other Party's sole expense. The abandoning Party [***]. The abandoning Party shall reasonably cooperate with and assist the other Party in connection with any prosecution and maintenance activities undertaken by the other Party.

9. INFRINGEMENT AND ENFORCEMENT

9.1. Infringement Claims by Third Parties. With respect to any and all Claims instituted by Third Parties against Asuragen or Asuragen or any of their respective Affiliates for infringement or misappropriation of such Third Parties' intellectual property rights involving the manufacture, use, license, marketing, sale, offer for sale or importation of a product or service that is the subject of a license granted hereunder (each, an "**Infringement Claim**"), Asuragen and Asuragen will assist one another and cooperate (at the cost of the defending Party) in the defense and settlement of such Infringement Claims at the other Party's reasonable request. Notwithstanding any other provision of this Article 10, neither Party shall make any settlements of any suit, proceeding or action relating to any infringement of such Infringement Claim that would adversely affect the other Party or adversely affect the rights and licenses granted hereunder, without first obtaining such other Party's prior written consent, such consent not to be unreasonably withheld or delayed.

9.2. Enforcement Against Third Parties. Absent written agreement of the Parties to the contrary, the Party [***] shall have the sole and exclusive right (in its sole discretion) but not

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the obligation to initiate and maintain legal action at such Party's sole expense against any such infringing Third Party. The Party enforcing such Intellectual Property rights shall [***] and shall have [***].

9.3. Cooperation. In any suit, proceeding or dispute involving infringement or misappropriation by a Third Party of Intellectual Property licensed hereunder, a Party shall promptly notify the other Party when it becomes aware of any such infringement, and each Party shall provide the other with reasonable cooperation and assistance, including agreeing to be named as a party to such action and, upon the request and the expense of the enforcing Party, the other Party shall make available, at reasonable times and under appropriate conditions, all relevant personnel, records, papers, information, samples, specimens and the like in its possession.

10. PROPRIETARY INFORMATION

10.1. Definition. "**Proprietary Information**" means all information and material disclosed by one Party ("**Disclosing Party**") to the other Party ("**Receiving Party**") that is designated, at or before the time of disclosure, as proprietary or confidential, or provided under circumstances reasonably indicating that the information or material is proprietary or confidential. In particular, "Proprietary Information" of each Party is deemed to include all apparatus, assay components, biological materials, cell lines, clinical data, chemical compositions or structures, databases and data collections, diagrams, formulae, inventions (whether or not patentable), know-how, methods, processes, proprietary information, protocols, schematics, specifications, software, software code (in any form including source code and executable or object code), techniques, works of authorship, and other forms of technology (whether or

not embodied in any tangible form and including all tangible embodiments of the foregoing such as instruction manuals, laboratory notebooks, prototypes, samples, studies, and summaries), including without limitation, any information pertaining to any Invention.

10.2. Confidentiality of Proprietary Information. Except as otherwise provided in this Agreement. Receiving Party agrees to (a) retain in confidence the Proprietary Information of the Disclosing Party, (b) restrict the use of and access to the Proprietary Information of the Disclosing Party to employees of Receiving Party and its Affiliates to whom disclosure is necessary to exercise the rights and licenses granted in this Agreement, (c) appropriately bind each employee to whom any such disclosure is made to hold the Proprietary Information of the Disclosing Party in confidence, and (d) not sell, lease, assign, transfer or otherwise disclose the Proprietary Information of the Disclosing Party to any Third Party, except Affiliates, in accordance with this Section 11.2. Notwithstanding the foregoing, either Party may disclose Proprietary Information of the Disclosing Party (i) to agents or consultants of such Party and its Affiliates under the terms and conditions of a written, signed confidential disclosure agreement with terms and conditions that prohibit disclosure to other parties and that are otherwise at least as restrictive as the terms of subsections (a) through (d) of this Section 11.2, and (ii) to distributors, licensees, customers, clients, business partners and other third parties to the extent necessary to exercise the rights and licenses with respect to Proprietary Information granted hereunder. Without limiting the foregoing, each Party agrees that it shall treat the Proprietary Information of the Disclosing Party with at least the same degree of care as it would its own highly proprietary information, but in no event less that a reasonable degree of care.

[***] Certain information in this document has been omitted and filed separately with the Securities and Exchange Commission. Confidential treatment has been requested with respect to the omitted portions.

10.3. Confidentiality of Agreement. Neither Party shall disclose the terms and conditions or existence of this Agreement without the prior written consent of the other Party, except as may be required by law or regulation. If a Party determines that disclosure is required by law or regulation, it shall consult with the other Party to minimize such disclosure.

10.4. Exclusions. Neither Party shall have any obligation under this Agreement with respect to Proprietary Information that (a) is now, or hereafter becomes, through no act or failure to act on the part of the Receiving Party, generally known or available; (b) is or was known by the Receiving Party at or before the time such information or material was received from the Disclosing Party, as evidenced by the Receiving Party's tangible (including written or electronic) records; (c) is furnished to the Receiving Party by a Third Party that is not under an obligation of confidentiality to the Disclosing Party with respect to such information or material; (d) is independently developed by the Receiving Party without any breach of this Agreement, as evidenced by the Receiving Party's contemporaneous tangible (including written or electronic) records; or (e) is required to be disclosed pursuant to any judicial or governmental request, requirement or order, provided that upon receipt of such request, requirement or order, the Receiving Party shall give the Disclosing Party prompt notice and take all reasonable steps to assist the Disclosing Party in seeking a protective order and shall limit the disclosure to the minimum extent necessary to comply with such request, requirement or order.

10.5. Injunctive Relief. Each Party acknowledges and agrees that, in the event of an unauthorized use, reproduction, distribution or disclosure of any Proprietary Information, an adequate remedy at law would not be available and, therefore, injunctive or other equitable relief would be appropriate to restrain such use, reproduction, distribution or disclosure, whether threatened or actual.

11. GENERAL

11.1. Term. This Agreement shall be irrevocable and remain in force and effect in perpetuity. Notwithstanding the foregoing, any royalty-bearing licenses under Patent Rights shall only remain in force until the last claim of the Patent(s) being licensed expire or until a final decree of invalidity thereof from which no appeal or other judicial recourse can be, or is, taken of the last remaining Patent(s) being licensed.

11.2. Notices. All notices and other communications under this Agreement shall be in writing and shall be deemed given when delivered by hand or upon confirmed receipt of a facsimile transmission, two (2) days after being deposited with an overnight courier, or five (5) days after mailing, postage prepaid, by register or certified mail, return receipt requested, to the below address or such other addresses as either Party shall specify in a written notice to the other.

To Asuragen:
Asuragen, Inc.
2150 Woodward Street, Suite 100
Austin, Texas, 78744
Fax: 512-681-5201
Attn: General Counsel

To Mirna:
Mirna Therapeutics, Inc.
2150 Woodward Street, Suite 100
Austin, Texas, 78744
Fax: 512-681-5201
Attn: General Counsel

11.3. Governing Law; Jurisdiction. This Agreement shall be governed by and construed in accordance with the laws of the United States of America (to the extent federal law is applicable) and the laws of the State of Delaware (to the extent state law is applicable) without giving effect to the choice of law principles thereof. Any dispute arising out of this Agreement shall be subject to the exclusive jurisdiction and venue of the Delaware state courts of New Castle County, Delaware, (or, if there is exclusive federal jurisdiction, the United States District Court for the District of Delaware) and the Parties consent to the personal and exclusive jurisdiction and venue of these courts.

11.4. Relationship of Parties. Nothing contained in this Agreement shall be deemed or construed as creating a joint venture, partnership, agency, employment or fiduciary relationship between the Parties. Neither Party nor its agents have any authority of any kind to bind the other Party in any respect whatsoever, and the relationship of the Parties is, and at all times shall continue to be, that of independent contractors.

11.5. Assignment. This Agreement may not he assigned by either Party without the prior written consent of the other Party, which consent shall not be unreasonably withheld or delayed. Such consent shall not be required for any assignment to a party that succeeds to all or substantially all of the assigning Party's business or assets relating to this Agreement (whether by sale, merger, operation of law or otherwise), provided that such assignee agrees in writing to be bound by the terms and conditions of this Agreement. This Agreement shall be binding upon and shall inure to the benefit of the Parties and their respective successors and permitted assigns.

11.6. Further Assurances. Each Party agrees to take or cause to be taken such further actions, and to execute, deliver and file or cause to be executed, delivered and filed such further documents and instruments, and to obtain such consents, as may be reasonably required or requested in order to effectuate fully the purposes, terms and conditions of this Agreement.

11.7. Waiver. A waiver, express or implied, by either Party of any right under this Agreement or of any failure to perform or breach hereof by the other Party hereto shall not constitute or be deemed to be a waiver of any other right hereunder or of any other failure to perform or breach hereof by such other Party, whether of a similar or dissimilar nature thereto.

11.8. Severability. If any provision of this Agreement is unenforceable or invalid under any applicable law or is so held by applicable court decision, such unenforceability or invalidity will not render this Agreement unenforceable or invalid as a whole, and, in such event, such provision will be changed and interpreted so as to best accomplish the objectives of the Parties within the limits of applicable law or applicable court decision.

11.9. Force Majeure. In the event either Party hereto is prevented from or delayed in the performance of any of its obligations hereunder by reason of acts of God, war, strikes, riots, storms, fires, or any other cause whatsoever beyond the reasonable control of the Party, the Party so prevented or delayed shall be excused from the performance of any such obligation to the extent and during the period of such prevention or delay.

11.10. Captions and Headings. The captions and headings used in this Agreement are inserted for convenience only, do not form a part of this Agreement, and shall not be used in any way to construe or interpret this Agreement.

11.11. Construction. This Agreement has been negotiated by the Parties and shall be interpreted fairly in accordance with its terms and without any construction in favor of or against either Party.

11.12. Counterparts. This Agreement may be executed in one or more counterparts (including, without limitation, by fax), with the same effect as if the Parties had signed the same document. Each counterpart so executed shall be deemed to be an original, and all such counterparts shall be construed together and shall constitute one and the same instrument.

11.13. Entire Agreement; Amendment. This Agreement constitutes the entire understanding and only agreement between the Parties with respect to the subject matter hereof and supersedes any and all prior or contemporaneous negotiations, representations, agreements, and understandings, written or oral, that the Parties may have reached with respect to the subject matter hereof other than the Ancillary Agreements. No agreements altering or supplementing the terms hereof may be made except by means of a written document signed by the duly authorized representatives of each of the Parties hereto.

IN WITNESS WHEREOF, the Parties hereto have caused their duly authorized representatives to execute this Agreement as of the Effective Date.

Mirna Theraeputics, Inc.		**Asuragen, Inc.**	
By:	/s/ Lynne Hohlfeld	By:	/s/ Rolland D. Carlson
Name:	Lynne Hohlfeld	Name:	Rollie Carlson, Ph.D.
Title:	CFO	Title:	President

EXHIBIT A

MIRNA EXISTING IP

Atty Docket No.	Title	Appln No. and Date Filed	Publn No. and Date Published
[***]	[***]	[***]	[***]

[***] 7 pages in this document have been omitted and filed separately with the Securities and Exchange Commission. Confidential treatment has been requested with respect to the omitted portions.

EXHIBIT B

ASURAGEN LICENSED IP

Atty Docket No.	Title	Appln No. and Date Filed	Publn No. and Date Published
[***]	[***]	[***]	[***]

[***] 4 pages in this document have been omitted and filed separately with the Securities and Exchange Commission. Confidential treatment has been requested with respect to the omitted portions.

[***] Certain information in this document has been omitted and filed separately with the Securities and Exchange Commission. Confidential treatment has been requested with respect to the omitted portions.

FIRST AMENDMENT TO THE CROSS LICENSE AGREEMENT

This First Amendment to the Cross License Agreement (the "First Amendment") is by and between Mirna Therapeutics, Inc. ("Mirna"), a Delaware corporation with a principal business address at 2150 Woodward St., Suite 100, Austin, Texas 78744, and Asuragen, Inc., a Delaware corporation, with a principal business address at 2150 Woodward Street, Austin, Texas 78744 ("Asuragen"), and is effective as of September 28, 2012 (the "First Amendment Effective Date"). All capitalized terms not defined in this First Amendment shall have the meanings given to them in the Cross License Agreement (including Exhibits thereto) entered into by and between Mirna and Asuragen, effective as of November 3, 2009 (the "Agreement").

Whereas, the Asuragen Licensed IP includes the ASUR:009US and ASUR:009WO patent families;

Whereas, the Agreement stipulates that Asuragen controls all prosecution and enforcement of the ASUR:009US and ASUR:009WO patent families; and

Whereas, the Parties desire that Mirna control all prosecution and enforcement of the ASUR:009US and ASUR:009WO patent families.

NOW THEREFORE, in consideration of these premises and the mutual covenants and agreements set forth herein, the sufficiency of which is hereby acknowledged, the Parties agree as follows:

1. The following definitions shall be added to the Agreement:

1.20. "009 Family" means the Asuragen Licensed IP ASUR:009US and ASUR:009WO patent family as set forth in Exhibit B of the Agreement and Exhibit A of this First Amendment and any divisionals, continuations, reexaminations, reissues, and foreign equivalents.

2. The following section shall be added to Section 8:

8.3 Prosecution of the 009 Family. Notwithstanding the foregoing Sections 8.1 and 8.2, Mirna shall have the first right, but not the obligation, to maintain all patents within the 009 Family and to prosecute and maintain any patent applications relating thereto. Mirna shall provide Asuragen all material documentation and correspondence from, sent to or filed with patent offices regarding the 009 Family and with a reasonable opportunity to review and comment upon all filings with such patent offices in advance. The costs associated with such prosecution and maintenance activities shall be borne exclusively by Mirna. In the event that Mirna elects not to continue prosecution of any 009 Family patent applications or elects not to maintain an issued patent from the 009 Family (the "009 Abandoned Patents"), Mirna will promptly and on a timely basis, and at least [***] before any deadline, for response, submission or other action, notify Asuragen thereof and Asuragen shall have the right but not the obligation, at its option, to prosecute and maintain such 009 Abandoned Patents at Asuragen's sole expense. Mirna shall reasonably cooperate with Asuragen and assist Asuragen in connection with the

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prosecution and maintenance activities of any 009 Abandoned Patents, and Mirna shall have no further rights with regard to such 009 Abandoned Patents.

3. The following sentence shall be added after the last sentence of Section 9.2:

Notwithstanding the foregoing, Mirna shall have the sole and exclusive right (in its sole discretion) but not the obligation to initiate and maintain legal action at Mirna's sole expense against any Third Party infringing the any of the Intellectual Property rights of the 009 Family. Mirna shall [***].

4. The first sentence of Section 9.1 shall be deleted and replaced with the following:

"9.1 Infringement Claims by Third Parties. With respect to any and all Claims instituted by Third Parties against Asuragen or Mirna or any of their respective Affiliates for infringement or misappropriation of such Third Parties' intellectual property rights involving the manufacture, use, license, marketing, sale, offer for sale or importation of a product or service that is the subject of a license granted hereunder (each, an "Infringement Claim"), Asuragen and Mirna will assist one another and cooperate (at the cost of the defending Party) in the defense and settlement of such infringement Claims at the other Party's reasonable request.

5. Except as specifically modified or amended hereby, all terms of the Agreement shall remain in full force and effect. No provision of this First Amendment may be modified or amended except expressly by a written amendment of this document signed by the Parties. This First Amendment shall be governed in accordance with Paragraph 11.3 of the Agreement.

In Witness Whereof, the Parties hereto have caused their duly authorized representatives to execute this Agreement as of the Effective Date.

	ASURAGEN, INC.		**MIRNA THERAPEUTICS, INC.**
By:	/s/ Rolland D. Carlson, Ph.D.	**By:**	/s/ Paul Lammers, M.Sc., M.D.
Name:	Rolland D. Carlson, Ph.D.	Name:	Paul Lammers, M.Sc., M.D.
Title:	President/COO	Title:	CEO and President

[***] Certain information in this document has been omitted and filed separately with the Securities and Exchange Commission. Confidential treatment has been requested with respect to the omitted portions.

Exhibit A
009 Family

[***]	[***]	[***]	[***]

[***] Certain information in this document has been omitted and filed separately with the Securities and Exchange Commission. Confidential treatment has been requested with respect to the omitted portions.

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LICENSE AGREEMENT

THIS LICENSE AGREEMENT (the "***Agreement***") is made and entered into effective as of December 22, 2011 (the "***Effective Date***") by and between **MIRNA THERAPEUTICS, INC.**, a Delaware corporation with a place of business at 2150 Woodward Street, Suite 100, Austin, Texas 78744 ("***MirnaRx***"), and **MARINA BIOTECH, INC.**, a Delaware corporation with a place of business at 3830 Monte Villa Parkway, Bothell, Washington 98021 USA ("***Marina Bio***"). Marina Bio and MirnaRx are sometimes referred to herein individually as a "Party", and collectively as the "Parties."

RECITALS

WHEREAS, Marina Bio owns or controls certain patent rights and know-how relating to its proprietary oligonucleotide delivery technology that may be useful for delivery of microRNA sequences for use treating certain cancers and other diseases or conditions; and

WHEREAS, MirnaRx has capabilities in the research and development of microRNA drug candidates and products and desires to obtain from Marina Bio, and Marina Bio is willing to grant to MirnaRx, a license under Marina Bio's technology and intellectual property relating to Marina Bio's liposomal delivery technology known as NOV340, to exclusively develop and commercialize drug products containing such delivery technology combined with one or more selected MirnaRx mircoRNA molecules worldwide, on the terms and conditions set forth herein;

NOW, THEREFORE, based on the premises and the mutual covenants and obligations set forth below, and intending to be bound hereby, the Parties agree as follows:

ARTICLE 1

DEFINITIONS

For purposes of this Agreement, the following terms shall have the meanings as set forth below:

1.1 "***Additional Indication***" means, with respect to a particular Licensed Product, an indication for treating or preventing a human disease or condition that is the subject of and covered by a unique NDA application and Regulatory Approval, different from and subsequent to the original Regulatory Approval for such Licensed Product.

1.2 "***Affiliate***" means, with respect to a particular Party, an entity that, directly or indirectly, through one or more intermediaries, controls, is controlled by or is under common control with such Party. For purposes of this definition, the term "control" (with correlative meanings for the terms "controlled by" and "under common control with") means that the applicable entity has the actual power, direct or indirect, to direct and to cause the direction of the management and policies of the applicable other entity, whether through ownership of fifty percent (50%) or more of the voting securities of such other entity, by contract or otherwise. An

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entity will be an Affiliate for purposes of this Agreement only so long as it satisfies the definition set forth above in this Section.

1.3 "***Applicable Law***" means all applicable laws, rules, ordinances, and regulations, including any rules, regulations, guidelines or other requirements of relevant government agencies, that may be in effect from time to time in the applicable country or jurisdiction, applicable to the specific activities being undertaken pursuant to this Agreement.

1.4 "***Available***" means, with respect to a particular MirnaRx Compound for which MirnaRx submits a notice under Section 2.6, that at the time of such notice Marina Bio is not bound by an agreement with a Third Party that grants such Third Party exclusive license rights under the Licensed Technology with respect to such MirnaRx Compound.

1.5 "***Bankrupt Party***" shall have the meaning ascribed to such term in Section 10.2(b).

1.6 "***Claim***" means any claim, allegation, suit, complaint, action or legal proceeding.

1.7 "***Commercialize***" or "***Commercialization***" means those activities comprising or relating to the manufacturing, promotion, marketing, advertising, distribution and sale of Licensed Products, including Phase IV Trials or equivalent clinical trials conducted following Regulatory Approval as needed or useful to promote and market the Licensed Product and/or maintain such Regulatory Approval.

1.8 "***Commercially Reasonable Efforts***" means, with respect to particular tasks or activities hereunder in developing or Commercialization Licensed Product, a level of efforts applied to such tasks or activities reasonably consistent with the efforts commonly used by similarly-situated companies in the pharmaceutical industry to conduct such activities on products at a similar (as compared to the Licensed Product at the applicable time) stage in its product life and of similar market potential, profit potential and strategic value resulting from its own research efforts, based on information and conditions then-prevailing, including, without limitation, efficacy of the product, the competitiveness of alternative products in the marketplace, the patent and other proprietary position of the product, the likelihood of regulatory approval given the regulatory structure involved and the likelihood of adequate reimbursement. Commercially Reasonable Efforts shall be determined on a country-by-country or market-by-market basis (as most applicable) for a particular Licensed Product, and it is anticipated that the level of effort will change over time reflecting changes in the status of the Licensed Product and the country (or markets) involved.

1.9 "***Confidential Information***" of a Party means all confidential or proprietary information received or otherwise obtained by the other Party from such Party or its Affiliates pursuant to this Agreement, other than that portion of such information that:

(a) is now, or hereafter becomes, generally available to the public through no fault of the receiving Party, or its Affiliates, or any entity that obtained such information or materials from the receiving Party;

(b) the receiving Party or its Affiliates already possesses, as evidenced by its written records, prior to receipt thereof from the disclosing Party;

(c) is obtained without restriction from a Third Party that had the legal right to disclose the same to the receiving Party or its Affiliates; or

(d) has been independently developed by the receiving Party or its Affiliates without the aid, application or use of any Confidential Information of the disclosing Party, as demonstrated by competent written proof.

1.10 "***Confidentiality Agreement***" shall mean that certain Confidential Disclosure Agreement dated November 25, 2011, among Marina Bio, MirnaRx and Asuragen, Inc.

1.11 "***Cumulative Sublicense Fees***" shall have the meaning ascribed to such term in Section 5.6.

1.12 "***Default***" shall mean a failure by a Party to perform one or more of its material obligations under this Agreement which, if not cured within the applicable cure period set forth in Section 10.2(c) or (d), is likely to cause material harm to the other Party.

1.13 "***Dispute***" shall have the meaning ascribed to such term in Section 11.1.

1.14 "***Field of Use***" means any use of Licensed Product for or relating to the prophylaxis, treatment or palliation of cancer or any other disease or health condition in humans or animals, *but excluding* any DNAi human therapeutic use.

1.15 "***Field Infringement***" shall have the meaning ascribed to such term in Section 6.4.

1.16 "***Financial Event***" shall have the meaning ascribed to that term in Section 10.2(b).

1.17 "***First Commercial Sale***" means, with respect to a particular country, the first commercial sale of a Licensed Product by MirnaRx, its Affiliates or Sublicensees to a Third Party in a country, after all needed Regulatory Approvals for the Licensed Product have been granted in such country.

1.18 "***GAAP***" means generally accepted accounting principles.

1.19 "***Generic Product***" means, with respect to a Licensed Product, a generic product containing the applicable Selected MirnaRx Compound in a formulation similar to and substitutable for such Licensed Product.

1.20 "***Improvement Patent Claim***" means any claim in a patent application filed by MirnaRx (or in any patent issuing on any such application) that: (i) claims any improvements, modifications or enhancements to the Licensed Technology invented by MirnaRx prior to the date [***] after the Effective Date in conducting manufacturing process development and scale-up with respect to the Licensed Technology under this Agreement, and (ii) cannot be

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practiced without infringing the Licensed Patents, and including for clarity applicable claims in continuing patent applications (such as continuations, divisions, or continuations-in-part) or in any reissue, re-examined or extended patent. For clarity, the term "Improvement Patent Claims" expressly excludes: (x) any claims in patent applications or patents covering inventions made by or on behalf of MirnaRx (or its Affiliate) prior to the Effective Date without use of any Confidential Information or materials of Marina Bio, and (y) any claims in patent applications or patents covering inventions made by or on behalf of MirnaRx (or its Affiliate) after the Effective Date but independent of work done under this Agreement, in each case without use of any Confidential Information or materials of Marina Bio.

1.21 "***IND***" means an Investigational New Drug application, as defined in 21 C.F.R. 312 or any successor regulation or comparable application in accordance with the Regulatory Authority in the applicable jurisdiction.

1.22 "***Indemnified Party***" shall have the meaning ascribed to it in Section 8.3.

1.23 "***Indemnifying Party***" shall have the meaning ascribed to it in Section 8.3.

1.24 "***Information***" means any and all data, results, improvements, processes, methods, protocols, formulas, inventions, know-how, trade secrets and any other information, patentable or otherwise, which may include (but is not limited to) scientific, research and development, manufacturing know-how, pre-clinical, clinical, regulatory, manufacturing, safety, marketing, financial and commercial information or data.

1.25 "***Licensed Know-How***" means any and all proprietary Information owned or controlled by Marina Bio (or its Affiliate) that relates directly to the use or practice of the Licensed Patents and/or is otherwise necessary to develop, make, use or sell Licensed Product.

1.26 "***Licensed Patent***" means:

(a) The patents and patent applications that are owned or controlled by Marina Bio or its Affiliate that claim or cover the Marina Bio Technology (including the manufacture or use thereof), including those patents and patent applications listed in Appendix A of this Agreement;

(b) all additional patent applications based on or relating to the patents and applications set forth in subclause (a) above;

(c) any and all patent applications that are continuing applications (including continuations, continuations-in-part or divisionals, or any foreign equivalents thereof) of the patents and applications described in (a) or (b) above;

(d) any and all issued and unexpired patents resulting from any of the applications described in (a), (b) or (c) above;

(e) any and all issued and unexpired reissues, reexaminations, renewals, extensions (and any foreign equivalents of any of the foregoing) of any of the patents described in (a), (c) or (d) above; and

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(f) any and all supplemental protection certificates (and any foreign equivalents thereof) applicable to products that, prior to the expiration of any patents listed on Appendix A or any patents included in the scope of (d) above, were covered by one or more Valid Claims of such patents.

1.27 "***Licensed Product***" means a pharmaceutical composition developed or sold by MirnaRx (or its Affiliate or Sublicensee) that contains a Selected MirnaRx Compound and Marina Bio Technology and is claimed or covered by the Licensed Patents, and including any improvements, enhancements or modifications to such composition.

1.28 "***Licensed Technology***" means the Licensed Patents and Licensed Know-How.

1.29 "***Losses***" means costs and expenses (including, without limitation, reasonable legal expenses and attorneys' fees), judgments, liabilities, fines, damages, assessments and/or other losses.

1.30 "***Major Market***" means [***]. For clarity, obtaining Regulatory Approval of Licensed Product from [***], shall be deemed to be obtaining a Regulatory Approval in a Major Market for purposes of the applicable provisions of this Agreement.

1.31 "***Manufacturing Processes***" means all Information that is Controlled by Marina Bio or its Affiliates and is used to manufacture the delivery formulation in the Marina Bio Technology.

1.32 "***Marina Bio Indemnitees***" shall have the meaning ascribed. to such term in Section 8.2.

1.33 "***Marina Bio Technology***" means Marina Bio's proprietary NOV340 formulation referred to generally as SMARTICLES® liposomal delivery technology and including any Technology Improvements.

1.34 "***Milestone Payment Sum***" shall have the meaning ascribed to such term in Section 5.6.

1.35 "***miRNA Compound***" means a product containing, comprised of or based on a native or chemically modified RNA oligomer designed to either provide the function of a miRNA and/or modulate a miRNA., where miRNA is understood to be a naturally occurring short RNA molecule found in eukaryotic cells.

1.36 "***MirnaRx Compound***" means any miRNA Compound that is researched or developed by MirnaRx (or its Affiliate) for use in the Field of Use.

1.37 "***MirnaRx Indemnitees***" shall have the meaning ascribed to such term in Section 8.1.

1.38 "***NDA***" means a New Drug Application, as defined in 21 C.F.R. 314, and any other appropriate application or registration submitted to the appropriate Regulatory Authority in

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a particular country in the Territory to seek Regulatory Approval for sale of Licensed Product in such country.

1.39 "***Net Sales***" means, with respect to a certain time period, all revenues recognized, and deductions applied, in accordance with GAAP consistently applied, based on invoices for the sales of Licensed Products sold by MirnaRx or its Affiliate to Third Parties (but not including sales relating to transactions between MirnaRx, its Affiliates and/or its respective Sublicensees and agents) during such time period, less the total of the following estimated and/or incurred charges or expenses with respect to such sales: (a) [***]; (b) [***]; (c) [***]; (d) [***]; (e) [***]; (f) [***]; and (g) [***].

Any disposal of Licensed Products for, or use of Licensed Products in, clinical or pre-Clinical trials, given as free samples, including, without limitation, sample cards, or distributed for indigent programs shall not be included in Net Sales.

Upon any sale or other disposal of any Licensed Product that should be included within Net Sales for any consideration other than an exclusively monetary consideration on bona fide arm's-length terms, then for purposes of calculating the Net Sales under this Agreement, [***].

1.40 "***Option Compound***" means any of the MirnaRx Compounds on the list in the Side Letter (not to exceed [***] compounds, but subject to the substitution rights in Section 2.6), or, for any such MirnaRx Compound, any other MirnaRx Compound that has at least [***]% sequence homology with such compound.

1.41 "***Phase IV Trial***" means a clinical trial of a pharmaceutical product initiated in a country in an approved indication after receipt of Regulatory Approval for such product in such indication in such country, intended to delineate additional information about such product's risks, benefits and/or optimal use.

1.42 "***Prosecution***" shall have the meaning ascribed to such term in Section 6.3,

1.43 "***Regulatory Approval***" means all approvals (including supplements, amendments, pre- and post-approvals and price approvals), licenses, registrations or authorizations of any national, supra-national, regional, state or local regulatory agency, department, bureau, commission, council or other governmental entity, necessary for the distribution, use or sale of a Licensed Product in the applicable country or regulatory jurisdiction.

1.44 "***Regulatory Authority***" means any regulatory agency, department, bureau, commission, council or other governmental entity involved in granting approvals, registrations or licenses for the development, manufacturing, marketing, reimbursement, and/or pricing of a Licensed Product in a particular country or regulatory jurisdiction.

1.45 "***Regulatory Documents***" means all regulatory documents and filings, correspondence with Regulatory Authorities, annual reports and amendments thereto related to a Licensed Product.

1.46 "***Royalty Term***" means, as to a particular Licensed Product sold in a country, the period from the date of First Commercial Sale of such Licensed Product in such country until the

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later of: (i) the date of expiration of the last to expire patent included in the Licensed Patents having a Valid Claim that claims the Licensed Product in such country, or (ii) [***] after such First Commercial Sale of the Licensed Product in. such country.

1.47 "***Royalties Report***" shall have the meaning ascribed to such term in Section 5.7.

1.48 "***Selected MirnaRx Compound***" means: (a) the MirnaRx Compound known as miR-34 (the sequence of which is set forth in the Side Letter); or (b) any other MirnaRx Compound that MirnaRx selects, as provided in Section 2.6, to combine with the Marina Bio Technology and to develop (or have developed) as a Licensed Product, and including, for any such Selected MirnaRx Compound, any other MirnaRx Compound that has at least [***]% sequence homology with such Selected MirnaRx Compound.

1.49 "***Side Letter***" means that certain letter agreement between the Parties dated as of the Effective Date.

1.50 "***Sublicensee***" means a sublicensee, direct or indirect, of MirnaRx under MirnaRx's rights pursuant to Section 2.1.

1.51 "***Sublicense Fees***" shall have the meaning as ascribed to such term in Section 5.6.

1.52 "***Sublicensing Revenues***" means all consideration received by MirnaRx (or its Affiliate) from a Sublicensee in consideration of the grant of a sublicense under the Licensed Patents to such Sublicensee (which may include upfront fees, milestone payments, royalties and other similar fees), but excluding: (a) any amounts paid as reimbursement of research or development costs and expenses incurred by MirnaRx or its Affiliate (including past and ongoing costs and expenses) relating to Licensed Product; (b) direct reimbursement of patent prosecution or enforcement costs; (c) payments of a share of amounts recovered in enforcing patent or other intellectual property rights (except to the extent such share is calculated or treated as royalties under the terms of such sublicense); (d) transfer price payments for sale of compounds or products ([***] of actual fully-burdened cost of goods; (e) bona fide loans on commercial terms; and (f) any payments made to purchase equity in MirnaRx or a MirnaRx Affiliate at fair market value.

1.53 "***Technology Improvement***" means any improvements, enhancements or modifications to the Marina Bio Technology created solely. by Marina Bio within [***] of the Effective Date of the Agreement and which are not created pursuant to any agreement between Marina Bio and a Third Party, but excluding agreements with a contract research organization or consultant (or similar organization) that is contracted to improve the technology on behalf of Marina Bio and where Marina Bio owns or has exclusive license rights to the improvements made under such agreement.

1.54 "***Term***" means the term of this Agreement as set forth in Section 10.1.

1.55 "***Territory***" means the entire world.

1.56 "***Third Party***" means any entity or person other than Marina Bio or MirnaRx or an Affiliate of either of them.

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1.57 "***Third Party Claim***" means any claim, action, allegation, suit or legal proceeding brought by a Third Party against another entity or person.

1.58 "***Trademark***" means any trade name, service mark, logo or trademark (whether or not registered), together with all goodwill associated therewith, and any renewals, extensions or modifications thereto.

1.59 "***True-Up Payment***" shall have the meaning ascribed to such term in Section 5.6.

1.60 "***Valid Claim***" means an unexpired claim of an issued patent within the Licensed Patents that. has not been ruled to be unpatentable, invalid or unenforceable by a court or other authority in the country of the patent with competent jurisdiction, from which decision no appeal is taken or can be taken.

ARTICLE 2

LICENSES AND RELATED RIGHTS

2.1 License Grants. Marina Bio hereby grants to MirnaRx (and its Affiliates) (a) an exclusive royalty-bearing right and license, with full rights to grant sublicenses through multiple tiers, under the Licensed Patents and Licensed Know-How to research (however, for clarity, such research shall not be performed solely on the Licensed Technology), develop, make, have made, use, sell, offer for sale, import, export and otherwise Commercialize Licensed Products within the Field of Use in the Territory, and (b) a non-exclusive, worldwide, royalty-free rights and license, without any right to grant sublicenses, under the Licensed Patents and Licensed Know-How solely to make and conduct research on compositions containing MirnaRx Compound, *but excluding* any rights to conduct clinical development on or to sell, offer for sale or otherwise commercialize any such compositions.

2.2 Sublicenses. Any sublicenses granted to Third Party Sublicenses under the license rights granted in Section 2.1(a) shall be subject to the following terms: MirnaRx shall promptly notify Marina Bio of the granting of any sublicense hereunder including the name of the Sublicensee, financial terms relating to the grant of sublicense, and a general description of the .rights sublicensed, and each such sublicense shall be consistent with the terms of this Agreement.

2.3 Retained Rights. For clarity, Marina Bio retains all rights under the Licensed Technology, subject only to the license rights granted to MirnaRx under Section 2.1.

2.4 Limitations on License Rights. Except as granted under Section 2.1, no other rights to use or practice the Licensed Technology for any other use or purpose are granted to MirnaRx.

2.5 Licensed Know-How Transfer. As soon as is reasonably practicable after the Effective Date, Marina Bio will provide to MirnaRx copies of all the Licensed Know-How, including Manufacturing Processes, then in existence that is reasonably needed to research, develop, manufacture and/or Commercialize Licensed Products in the Field of Use, including full technology transfer to MirnaRx (and/or its contract manufacturer) of all Manufacturing

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Processes and other manufacturing information in the Licensed Know-How in MirnaRx's or its Affiliate's or contract manufacturer's possession as needed to manufacture the Marina Bio Technology formulation for use in Licensed Products. The Licensed Know-How will be provided to MirnaRx in written form, electronically if reasonably practicable and otherwise in hard copy documents, in a form reasonably acceptable to MirnaRx. Upon MirnaRx's request during the Term, Marina Bio shall provide reasonable consultation services (by teleconference or in-person during regular business hours) to assist MirnaRx in its understanding and/or use of the Licensed Technology as licensed under for the development of Licensed Product.. Such transfer and assistance shall be provided by Marina Bio without charge until the internal costs and expenses of providing such transfer and assistance equal to $[***]. Thereafter, MirnaRx shall reimburse Marina Bio for its internal costs and expenses at reasonable, agreed rates for the assistance expressly requested by MirnaRx.

2.6 Selection of Additional MirnaRx Compounds. At its sole discretion, MirnaRx may from time to time during the Term select one or more additional MirnaRx Compounds (which are not already a Selected MirnaRx Compound) to he combined with the Marina Bio Technology in a formulation to create a new Licensed Product, by providing Marina Bio written notice of such selection. Upon any such notice, and provided that such MirnaRx Compound is Available at the time notice is given, the MirnaRx Compound shall be deemed a new "Selected MirnaRx Compound", and MirnaRx shall then be obligated to pay the Selection Fee with respect to the additional Licensed Product containing such new Selected MirnaRx Compound as provided in Section 5.2. MirnaRx may make such selection at any time, [***]. Marina Bio agrees that, for a period of [***] after the Effective Date, it and its Affiliates [***]. During each [***] of the above [***] period, [***].

ARTICLE 3

PRODUCT DEVELOPMENT AND REGULATORY MATTERS

3.1 Development in Field of Use. MirnaRx shall have the sole rights to control and conduct, itself and/or through Affiliates or Sublicensees, and in its sole discretion except as provided below, the research and development of Licensed Products for commercialization and use in the Field of Use in the Territory. MirnaRx agrees to use Commercially Reasonable Efforts to conduct such research and development (pre-clinical and clinical) of Licensed Products as necessary to obtain Regulatory Approval of a Licensed Product in the Field of Use in the Major Markets and in such other countries in the Territory where MirnaRx determines it is commercially reasonable to do so. MirnaRx may satisfy the foregoing diligence obligation through activities of its Affiliates, subcontractors and/or Sublicensees. MirnaRx may subcontract all or part of the conduct of such development program to appropriately qualified third parties except as limited by Section 2.1(b).

3.2 Development Reporting. Every year within [***] after the anniversary of the Effective Date, MirnaRx shall provide to Marina Bio a written report setting out a reasonably detailed summary of progress and results of the development program on Licensed Product since the last report, including a summary of results and of the efforts taken in relation to the preparation submission of applications and other filings for Regulatory Approvals for the Licensed Product in the Field of Use. MirnaRx shall also provide prompt written notice to

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Marina Bio of (i) any Regulatory Approval received for any Licensed Product in any country and (ii) the anticipated commercial launch date for the Licensed Product in each country. The information contained in such reports and notices shall be deemed to be MirnaRx's Confidential Information.

3.3 Uncertainty In Development. With respect to the development of Licensed Products and efforts to obtain Regulatory Approval, each of the Parties agrees as follows:

(a) Drug product research and development is uncertain and has many risks and potential problems (including efficacy and toxicity issues); and that the development program on Licensed Products may produce no results, or unpredictable or inaccurate results, or results that cannot support Regulatory Approval or further development or commercial activity;

(b) Neither Party gives to the other any warranty or assurance that the development program for Licensed Products will have any particular result, that Regulatory Approval(s) will be obtained, or that such product development or Commercialization will be successful;

(c) For the avoidance of doubt, deviations from or changes to the development program on Licensed Product due to unexpected, unpredictable, inaccurate, or otherwise undesirable results (including results indicating toxicity issue or a lack of efficacy shall not be considered a failure of MirnaRx to meet its obligations hereunder and it shall not be deemed a material. breach to this Agreement per Section 10.2(c) of this Agreement.

3.4 Regulatory Matters Generally. MirnaRx (or its Affiliate or Sublicensee, as applicable) shall have the exclusive rights to manage and conduct all regulatory activities relating Licensed Products for use in the Field of Use in the Territory. MirnaRx may subcontract all or part of the conduct of such regulatory activities to appropriately qualified third parties.

3.5 Communications with Regulatory Authorities. From and after the Effective Date, MirnaRx shall be solely responsible for all contacts with all Regulatory Authorities with respect to Licensed Products within the Field of Use in the Territory. At MirnaRx's request, Marina Bio shall participate in such regulatory discussions, to the extent reasonably needed with respect to the Marina Bio Technology components of a Licensed Product, *provided that* Marina Bio's participation shall be limited to those matters for which MirnaRx expressly requests Marina Bio's comment or other involvement in such discussions. MirnaRx shall reimburse Marina Bio for its reasonable expenses at reasonable, agreed rates that reflect the actual internal costs and Marina Bio's reasonable external expenses regarding travel, per diem and lodging, with respect to such requested participation.

3.6 Regulatory Filings. MirnaRx (or its Affiliate or Sublicensee) shall control and have sole responsibility for, at its expense and in its name, preparing and filing with the appropriate Regulatory Authorities of all Regulatory Documents, including all INDs and that are necessary or useful to conduct clinical studies of the Licensed Products, and all NDAs and other applications for Regulatory Approval to market and sell Licensed Products in the Field of Use in the Territory, and all amendments or supplements thereto. MirnaRx (or its Affiliate or Sublicensee, as applicable) shall own the entire and exclusive rights in all its Regulatory

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Documents and Regulatory Approvals. Marina Bio shall provide all reasonable assistance to MirnaRx as reasonably requested by MirnaRx in all such regulatory efforts, with respect to the CMC component of such regulatory filings or applications as relating to the Marina Bio Technology components of the applicable Licensed Product covered by such application. MirnaRx shall reimburse Marina Bio for its reasonable expenses in providing the above assistance, at agreed rates that reflect the actual internal costs of such assistance.

ARTICLE 4

COMMERCIALIZATION; MANUFACTURING

4.1 Commercialization Rights in Yield of Use. MirnaRx shall have the sole rights, itself and/or through Affiliates or Sublicensees (and their respective distributors) to Commercialize and otherwise exploit Licensed Products developed by MirnaRx or its Affiliates . (or Sublicensee) for all uses in the Field of Use in the Territory. MirnaRx agrees to use Commercially Reasonable Efforts to conduct such Commercialization activities of a Licensed Product in the Field of Use in the Major Markets and in such other countries in the Territory where MirnaRx determines it is commercially reasonable to do so. MirnaRx may satisfy the foregoing diligence obligation through activities of its Affiliates, subcontractors and/or Sublicensees. MirnaRx (and its Affiliates and Sublicensees) shall have sole control over all decisions regarding Commercialization, including pricing and marketing strategies.

4.2 Commercialization Reporting. Every year within [***] of the anniversary of the Effective Date after Regulatory Approval is granted, MirnaRx shall provide to Marina Bio written report setting out a reasonably detailed summary of efforts and progress of the Commercialization program on Licensed Product in the Field of Use since the last report, including a summary of marketing results.

4.3 Manufacturing. MirnaRx (and/or its Affiliate or Sublicensee) shall have the sole responsibility for conducting all manufacturing process development and scale-up, as needed to have an appropriate manufacturing process for Licensed Products sufficient to meet all expected demand for Licensed Products. Marina Bio shall provide all reasonable assistance to MirnaRx as reasonably requested by MirnaRx in such manufacturing scale-up efforts with respect to the Marina Bio Technology components of the applicable Licensed Product. MirnaRx shall reimburse Marina Bio for its reasonable expenses in providing the above assistance, at agreed rates that reflect the actual internal costs of such assistance.

ARTICLE 5

CONSIDERATION; PAYMENTS; REPORTS

5.1 Upfront License Fee. In part consideration of the license rights granted by Marina Bio under this Agreement, MirnaRx shall pay Marina Bio an upfront license fee of $[***], to be paid within [***] of the Effective Date but no later than [***]. For the avoidance of doubt, this upfront license fee includes designation of miR-34 as a Selected MirnaRx Compound (as provided in Section 1.48(a)).

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5.2 Selection Fee Payments. In part consideration of the license rights granted by Marina Bio under this Agreement, in the event that MirnaRx selects, under Section 2,6,, a new MirnaRx Compound (which is not then a Selected MirnaRx Compound) as a Selected MirnaRx Compound and develops such new Selected MirnaRx Compound as an additional Licensed Product, then MirnaRx shall pay Marina Bio an additional compound selection fee of $[***], such amount to be paid as follows: (a) with respect to any Option Compound that is selected by MirnaRx in its discretion as a Selected MirnaRx Compound in accordance with Section 2.6, (i) $[***] of such amount shall be paid within [***] of the date that MirnaRx selects the Selected MirnaRx Compound under Section 2.6, and (ii) the balance ($[***]) will be paid [***], and (b) with respect to any Selected MirnaRx Compounds that are not Option Compounds when selected by MirnaRx under Section 2.6, the total amount of $[***] for such Selected MirnaRx Compound shall be paid within [***] of the date that MirnaRx selects the Selected MirnaRx Compound under Section 2.6. All such selection fees shall be in addition to any amounts due based on Sublicensing Revenue received by MirnaRx (if any) for sublicensing a Licensed Product containing the applicable Selected MirnaRx Compound, as set forth in Section 5.6 below.

5.3 Milestone Payments.

(a) In part consideration of the license rights granted by Marina Bio under this Agreement. MirnaRx shall pay to Marina Bio a milestone payment upon first achievement by MirnaRx (independent of work done by or in collaboration with a Sublicensee) of the applicable milestone event set forth in the table below, such payments to be in the listed amounts for the applicable milestone event:

Milestone Event	Milestone Payment
(i) For each Licensed Product:	
(1) [***]	$ [***]
(2) [***]	$ [***]
(3) [***]	$ [***]
(4) [***]	$ [***]
(ii) For each Additional. Indication for the Licensed Product, up to total of [***] Additional Indications:	
(1) [***]	$ [***]

For clarity each of the above milestone payments shall be paid only once for a particular Licensed Product, regardless if any such Milestone Event is achieved more than once, [***]. Further, if a particular Licensed Product achieves a particular Milestone Event under subclause (i) of the above table without having achieved a previous Milestone Event such

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subclause (1), then such previous Milestone Event shall be deemed also achieved, and the Milestone Payment associated with such Milestone Event shall then be paid with the achievement of the subsequent Milestone Event. For illustrative purposes only, if the [***] Milestone Event as set forth in (i)(3) in the table above is not achieved for a Licensed. Product but the [***] Milestone Event as set forth in (i)(4) above is achieved for such Licensed Product, then the Milestone Payment for achievement of the Milestone Event in clause (i)(3) ($[***]) will be paid when the Milestone Payment for (i)(4) is paid. The total amount of milestone payments payable for a particular Licensed Product under the above shall not, in any event, exceed $6,000,000 under subclause (i) of the above table and $10,000,000 in total. For additional clarity, if MirnaRx. (or its Affiliate) enters into a sublicense Agreement under which the applicable Sublicensee is granted sublicense rights to Commercialize a Licensed Product, then achievement of any of the above Milestone Events by such Sublicensee, or by MirnaRx or its Affiliate working in collaboration with such Sublicensee under the sublicense agreement, shall not create a Milestone Payment obligation, but instead MirnaRx shall have the obligation to share Sublicense Revenues received under such sublicense agreement as provided in Section 5.6 below.

(b) MirnaRx shall promptly notify Marina Bio of the achievement of any Milestone Event for each Licensed Product. All Milestone Payments under subsection (a) above are non-refundable and. non-creditable, and shall be due within [***] of achievement of the applicable Milestone Event.

5.4 Royalties. In part consideration of the license rights granted by Marina Bio under this Agreement, and subject to the provisions of Sections 5.5, MirnaRx shall pay royalties to Marina Bio on sales by MirnaRx or any of its Affiliates of Licensed Products during the Royalty Term, as follows:

(a) For sales of License Product in country(ies) where such sale would infringe, absent the license granted in Section 2.1, a Valid Claim of an issued Licensed Patent, MirnaRx shall pay to Marina Bio royalties equal to [***]% of the Net Sales revenue recognized by MirnaRx or any of its Affiliates from such sales;

(b) For sales of License Product in country(ies) where either (i) there is no Valid Claim in an issued Licensed Patent that would be infringed, absent the license granted in Section 2.1, by such sale of the Licensed Product, or (b) there are sales of Generic Products during the same royalty period as such sales of Licensed Product, then MirnaRx shall pay to Marina Bio royalties equal to [***]% of the Net Sales revenue recognized by MirnaRx or any of its Affiliates from such Licensed Product sales.

5.5 Anti-Stacking Provisions. If MirnaRx, or its Affiliate owes to one or more Third Parties, under license agreement(s) granting .MirnaRx (or its Affiliate or Sublicensee) license rights covering patents (or other intellectual property rights) that are needed to make, use, sell or otherwise Commercialize the Licensed Technology as contained in the Licensed Product, royalties or similar payments on sales of such Licensed Products, then MirnaRx may reduce the royalties owed to Marina Bio under Section 5.4 based on such sales of Licensed Product by [***]% of the royalty or similar payments actually paid to such Third Parties, provided that MirnaRx shall not reduce any particular royalty payment to Marina Bio by more than [***]% of

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the amount otherwise owed under the royalty provisions of Section 5.4 for the applicable royalty period.

5.6 Sublicense Fees. In part consideration of the license rights granted by Marina Bio under this Agreement and the right to sublicense such licenses. MirnaRx shall pay to Marina Bio an amount ("***Sublicense Fees***") equal to a percentage of any Sublicensing Revenue received by MirnaRx (or its Affiliate) from any Sublicensee based on the grant to such Sublicensee of sublicense rights under MirnaRx's license rights under the Licensed Patents. Such percentage shall be determined based on the development stage of the applicable Licensed Product (that is covered by the sublicense) at the time that the particular sublicense agreement is executed by the parties thereto, as follows:

[***]	Percentage of Sublicense Revenue
[***]	[***]%

[***]	[***]%
[***]	[***]%
[***]	[***]%
[***]	[***]%

If, as to a particular Licensed Product being developed by a Sublicensee, such Sublicensee first achieves, with respect to such Licensed Product, one of the Milestone Events in the milestone table in Section 5.3(a) above, then in no event will the cumulative amount (the "***Cumulative Sublicense Fees***", as of the applicable date) of Sublicense Fees paid to Marina Bio by MirnaRx. under this Section 5.6, by the date [***] after the date that such Milestone Event is achieved, with. respect to Sublicense Revenues received by MirnaRx from such Sublicensee, be less than the cumulative amount (the "***Milestone Payment Sum***", as of the applicable date) of the Milestone Payments that would have been due under Section 5.3(a) by such date, for all Milestone Events achieved by such Sublicensee (as of such date), had MirnaRx achieved such Milestone Events. If, as to a Sublicensee that first achieves a particular Milestone Event for the applicable Licensed Product sublicensed to such Sublicensee, the Cumulative Sublicense Fees paid by MirnaRx to Marina Bio based on Sublicense Revenues received from such Sublicensee, by the date that is [***] after the date when such Milestone Event is achieved, is less than the Milestone Payment Sum effective as of such date, then MirnaRx will by such date also pay to Marina Bio the amount of such difference (such amount, the "***True-Up Payment***" as to the applicable Milestone Event achieved by such Sublicensee). An example of the calculation of such amounts and the determination of such difference (if any) is given in Appendix B of this Agreement. For clarity, any such True-Up Payment shall be deemed a Sublicensee Fee payment for all purposes of this Agreement. Further, if in the sublicense agreement between MirnaRx and a particular Sublicensee, the definition of "Major Markets" (or equivalent definition) is different from the definition in Section 1.27 of this Agreement, then the definition in such sublicense agreement will be used with respect to the achievement of the Milestone Event in subclause (i)(4) of the milestone table in Section 5.3(a) above, for the purpose of determining

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whether any "True-Up Payment" is owed by MirnaRx based on the Sublicensee achieving Regulatory Approval of the applicable Licensed Product in a Major Market.

5.7 Payment of Royalty and Sublicense Fee Obligations. The royalty obligation under Section 5.4 shall accrue upon the sales of a Licensed Product in each particular country in the Territory, commencing upon [***], and such obligation shall end upon the expiration of the Royalty Term applicable to such Licensed Product in such country. All such royalty payments are .non-refundable and non-creditable and shall be due within [***] of the end of each calendar quarter and are payable in immediately available funds. The Sublicense Fees owed under Section 5.6 shall be paid, with respect to particular Sublicense Revenue received by MirnaRx., within [***] of MirnaRx's receipt of the applicable revenues, and are payable in immediately available funds. MirnaRx shall notify Marina Bio in writing promptly upon the first commercial sale of Licensed Product in each country and thereafter MirnaRx shall furnish Marina Bio with a written report (the "***Royalties Report***") for each completed [***] showing, on a country-by-country basis, according to the volume of units of Licensed Product sold in each such country (by SKU) during the reporting period (whether Product is sold by MirnaRx or its Affiliates or Sublicensees): (a) the gross invoiced sales of the Product sold in each country during the reporting period, and the amounts deducted therefrom to determine Net Sales from such gross invoiced sales; (b) the royalties payable in dollars, if any, which shall have accrued hereunder based upon Net Revenues from sales of Product; and (c) the withholding taxes, if any, required by Applicable Law to be deducted in respect of such sales (provided that, as to sales by Sublicensees, MirnaRx shall report only the net sales numbers (using the definition for such term in the applicable sublicense agreement) as reported by the Sublicensee, if such Sublicensee does not report gross invoiced sales numbers). With respect to sales of Licensed Product invoiced in US dollars, the gross invoiced sales, Net Revenues and royalties payable shall be expressed in the Royalties Report in US Dollars. With respect to sales of Licensed Product invoiced in a currency other than US dollars, the gross invoiced sales, Net Sales and royalties payable shall be expressed in the Royalties Report in the domestic currency of the party making the sale as well as in the US dollar equivalent of the Royalty payable and the exchange rate used in determining the amount of US dollars. The US dollar equivalent shall be calculated on a calendar-month basis using the average monthly interbank rate listed in the Wall Street Journal.

5.8 Currency Restrictions. If at any time legal restrictions in any country in the world prevent the prompt remittance of any payments with respect to sales in that country, MirnaRx shall have the right anti option upon written notice to Marina Bio to make such payments by depositing the amount thereof in local currency to Marina Bio's account (or such other designated nominee by Marina Bin) in a bank or depository in such country.

5.9 Taxes. In the event that laws, rules or regulations require MirnaRx to withhold taxes with respect to any payment to be made by MirnaRx to Marina Bio pursuant to this Agreement, MirnaRx will notify Marina Bio of such withholding requirement prior to making the payment to Marina Bio and shall make such withholding from such payment of the required amount of withholding and shall make the required tax payment to the appropriate tax authority, and provide such assistance to Marina Bio, including the provision of such documentation as may be required by a tax authority, as may be reasonably necessary in Marina Bio's efforts to claim an exemption from or reduction of such taxes.

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5.10 Late Payments. All fees and royalties due under this Agreement not received within the period due shall bear interest from the date they are due until the date they are paid at the rate of [***] percent ([***]%) per annum or the maximum rate permitted by law, whichever is less.

5.11 Audit. MirnaRx and its Affiliates shall keep complete and accurate records of the underlying revenue and expense data relating to the calculations of Net Sales, Sublicensee Revenues and payments required under this Agreement. Marina Bio shall have the right, at its own expense and no more than [***], to have an independent, certified public accountant, selected by Marina Bio and reasonably acceptable to MirnaRx, review all such records upon reasonable notice and during regular business hours and under obligations of strict confidence, for the sole purpose of verifying the basis and accuracy of payments required and made under this Agreement within the prior [***] period. No calendar quarter may be audited more than one time. MirnaRx shall receive a copy of each audit report promptly from Marina Bio. Should the inspection lead to the discovery of a discrepancy to Marina Bio's detriment, MirnaRx shall pay the amount of the discrepancy in Marina Bio's favor within [***] after being notified thereof. Marina Bio shall pay the full cost of the inspection unless the discrepancy is greater than [***] percent ([***]%), in which case MirnaRx shall pay to Marina Bio the actual cost charged by such accountant for such inspection. If such audit shows a discrepancy in MirnaRx's favor, then MirnaRx may credit the amount of such discrepancy against

subsequent amounts owed to Marina Bio, or if no further amounts are owed under this Agreement, then Marina Bio shall pay MirnaRx the amount of the discrepancy within [***] after being notified thereof.

ARTICLE 6

INTELLECTUAL PROPERTY

6.1 Intellectual Property Ownership. Any information, know-how, data, results, and inventions, and any associated intellectual property, that is made, discovered, created, invented or generated by MirnaRx or its Affiliate in any activities or work under this Agreement shall be owned by MirnaRx.

6.2 Grant-Back License. Subject to the terms of the Agreement, MirnaRx hereby grants to Marina Bio (and its Affiliates) the [***] license, with the right to sublicense (subject to the limitation below) in the Territory under the Improvement Patent Claims solely to use and practice the Improvement Patent Claims in connection with the manufacture. use or sale of the Licensed Technology. In no event shall Marina Bio or its Affiliates or sublicensees) grant, or have any rights to grant, any sublicense under the foregoing license that is separate from a license (to the applicable sublicensee) under Marina Bio Technology. Marina Bio shall pay to MirnaRx a royalty of [***]% of the net sales of any products sold by Marina Bio or its Affiliate or sublicensee where the manufacture, use or sale of such product is claimed by a valid claim in the issued Improvement Patent Claims (where the terms "net sales" and "valid claim" have the same meanings as Net Sales and Valid Claims applied *mutatis mutandis* to the situation involving such product sold by Marina Bio (or its Affiliate or sublicensee) and Improvement Patent Claim).

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6.3 Prosecution and Maintenance. Marina Bio shall, at its expense, file, prosecute, defend and maintain, including conducting re-examination, reissue, opposition and interference proceedings (and any other similar patent proceedings) regarding, the Licensed Patents before all patent authorities (collectively, "***Prosecution***"). Marina Bio shall keep MirnaRx reasonably informed of such Prosecution efforts and results. Marina Bio shall not abandon any patent rights in the Licensed Patents without first notifying MirnaRx in writing at least [***] prior to any such abandonment. If Marina Bio intends to abandon any such rights of Licensed Patent, or does not conduct the Prosecution of any claim or patent application or patent within the Licensed Patents in any specific country, after MirnaRx's request, then MirnaRx shall have the right, on written notice to Marina Bio, to undertake the Prosecution of such claims, applications or patents at MirnaRx's sole cost and expense, and in such case Marina Bio shall do all things to provide MirnaRx with the right and opportunity to conduct the Prosecution of such claim or patent application or patent.

6.4 Infringement by Third Parties. If requested by MirnaRx, Marina Bio shall use Commercially Reasonable Efforts to enforce the Licensed Patents against infringers that are causing a material negative impact on MirnaRx (or its Affiliate or Sublicensee) in the market for Licensed Product due to the infringement of the Licensed Patents. Marina Bio shall keep MirnaRx fully informed of the progress and results of any such enforcement action. Any recoveries in any such enforcement actions against an infringement brought under this Section 6.2 shall be used first to reimburse Marina Bio's out-of-pocket costs and expenses (including attorneys' fees) for such action and any remainder shall be shared equally by the licensees of the Licensed Patents affected by the infringement action. Marina Bio shall not enter into any settlement of any action under this Section 6.2 that materially negatively affects MirnaRx's (or its Affiliate's or Sublicensee's) rights or interests under this Agreement without MirnaRx's written consent, which consent shall not be unreasonably withheld or delayed. If a third party is infringing a Licensed Patent by making, using or selling a Licensed .Product (a "***Field Infringement***"), and Marina Bio does not enforce the Licensed Patent against such Field Infringement within [***] after request by MirnaRx, or ceases such enforcement without causing the Field Infringement to terminate, then thereafter MirnaRx shall have the right to enforce the applicable Licensed Patents against such Field Infringement, at its expense, and shall keep Marina Bio reasonably informed of such enforcement: In any such enforcement by MirnaRx, Marina Bio agrees to join the action as a party plaintiff (at MirnaRx's expense) if required for MirnaRx to have standing to pursue the action and to cooperate and provide all reasonable assistance in MirnaRx's enforcement.

6.5 Defense of Third Party Actions. Each Party shall promptly notify the other Party upon receiving written notice of any potential infringement, or any Third Party claim or action against Marina Bio or MirnaRx or any of their Affiliates or Sublicensees for possible infringement, of a Third Party patent right resulting from the practice or use by MirnaRx (or its Affiliate or Sublicensee) of the Licensed Technology under this Agreement. Each Party shall be responsible for defending, and shall control the defense of, any such action brought against such Party.

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ARTICLE 7

REPRESENTATIONS, WARRANTIES AND COVENANTS

7.1 Representations and Warranties of Marina Bio. As of the Effective Date, Marina Bio hereby represents and warrants to MirnaRx as follows:

(a) Corporate Existence and Power. Marina Bio is a corporation duly organized, validly existing and. in good standing under the laws of the State of Delaware, and has full corporate power and authority and the legal right to own and operate its property and assets and to carry on its business as it is now being conducted.

(b) Authority and Binding Agreement. Marina Bio has the corporate power and authority and the legal right to enter into this Agreement and perform its obligations hereunder. Marina Bio has taken all necessary corporate action on its part required to authorize the execution and delivery of the Agreement and the performance of its obligations hereunder. The Agreement has been duly executed and delivered by Marina Bio and constitutes a legal, valid and binding obligation of Marina Bio that is enforceable against it in accordance with its terms.

(c) No Conflict. The execution, delivery. and performance of this Agreement by Marina Bio does not conflict with, and will not result in a breach of, any material agreement, instrument or understanding, oral or written, to which it is a party or by which it may be bound, nor violate any

material law or regulation of any court, governmental body or administrative or other agency having jurisdiction over it. Marina Bio hereby covenants that it and its Affiliates shall not enter into any agreement that will conflict with its obligations and covenants in this Agreement or prevent or interfere with its performance of such obligations.

(d) IP Rights. Marina Bio owns all the Licensed Technology has the full legal rights and authority to grant the licenses and rights under the Licensed Technology granted under this Agreement and has not assigned, transferred, conveyed or licensed its right, title and interest in the Licensed Technology in any manner inconsistent with such license grant or the other terms of this Agreement. There is no pending litigation or, to the best of Marina Bio's knowledge, written threat of litigation that has been received by Marina Bio (and has not been resolved by taking a license or otherwise), which alleges that Marina Bio's activities with respect to the Licensed Patents or Licensed Products have infringed, or misappropriated any of the intellectual property rights of any Third Party. To the best of Marina Bio's knowledge, the practice of the Licensed Technology as contemplated by this Agreement does not infringe any patent rights, or misappropriate any other intellectual property, owned by a Third Party.

(e) Disclaimer. EXCEPT FOR THE WARRANTIES EXPRESSLY SET FORTH ABOVE IN THIS SECTION 7.1, MARINA BIO MAKES NO OTHER REPRESENTATIONS OR WARRANTIES, EXPRESS OR IMPLIED, OF ANY KIND, INCLUDING AS TO MERCHANTABILITY, FITNESS FOR A PARTICULAR USE OR NON-INFRINGEMENT OF THE LICENSED TECHNOLOGY OR THE LICENSED PRODUCTS.

7.2 Representations and Warranties of MirnaRx. As of the Effective Date, MirnaRx hereby represents and warrants to Marina Bio as follows:

(a) Corporate Existence and Power. MirnaRx is a corporation duly organized, validly existing and in good standing under the laws of Delaware, and has full corporate power and authority and the legal right to own and operate its property and assets and to carry on its business as it is now being conducted.

(b) Authority and Binding Agreement. MirnaRx has the corporate power and authority and the legal right to enter into this Agreement and perform its obligations hereunder. MirnaRx has taken all necessary corporate action on its part required to authorize the execution and delivery of the Agreement and the performance of its obligations hereunder. The Agreement has been duly executed and delivered by MirnaRx and constitutes a legal, valid and binding obligation of MirnaRx that is enforceable against it in accordance with its terms.

(c) No Conflict. The execution, delivery and performance of this Agreement by MirnaRx does not conflict with, and would not result in a breach of, any material agreement, instrument or understanding, oral or written, to which it is a party or by which it may be bound, nor violate any material law or regulation of any court, governmental body or administrative or other agency having jurisdiction over it.

(d) EXCEPT FOR THE WARRANTIES EXPRESSLY SET FORTH ABOVE IN THIS SECTION 7.2, MIRNARX MAKES NO OTHER .REPRESENTATIONS OR WARRANTIES, EXPRESS OR IMPLIED, OF ANY KIND, INCLUDING AS TO MERCHANTABILITY, FITNESS FOR A PARTICULAR USE OR NON-INFRINGEMENT, OR THAT THE DEVELOPMENT OR COMMERCIALIZATION OF ANY LICENSED PRODUCT WILL BE SUCCESSFUL.

ARTICLE 8

INDEMNIFICATION

8.1 Indemnification by Marina Bio. Marina Bio hereby agrees to defend, hold harmless and indemnify MirnaRx and its Affiliates, and each of their respective officers, directors and employees (collectively, the "***MirnaRx Indemnitees***"), from and against any and all Losses arising out of any Third Party Claim based upon or resulting from: (i) any of Marina Bio's representations and warranties set forth in Section 7.1 of this Agreement being untrue in any material respect when made; (ii) Marina Bio's failure to perform, in any material respect, any covenant or obligation of Marina Bio set forth in this Agreement; and (iii) Marina Bio's gross negligence or willful misconduct; except, in each case, to the extent any such Losses result from the gross negligence or willful misconduct of MirnaRx Indemnitees or from the breach of any representation, or warranty or obligation under this Agreement by MirnaRx or its Affiliate.

8.2 Indemnification by MirnaRx. MirnaRx hereby agrees to defend, hold harmless and indemnify Marina Bio and its Affiliates, and each of their respective officers, directors and employees (collectively, the "***Marina Bio Indemnitees***"), from and against any and all Losses arising out of any Third Party Claim based upon or resulting from: (1) any of MirnaRx's

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representations and warranties set forth in Section 7.2 of this Agreement being untrue in any material respect when made; (ii) MirnaRx's or its Affiliate's failure to perform, in any material respect, any covenant or obligation of MirnaRx set forth in this Agreement; (iii) the exercise or practice by MirnaRx, its Affiliates or Sublicensees of the licenses granted to MirnaRx under Sections 2.1 (*excluding* any such Claim that alleges that the exercise or practice of the Licensed Technology infringes a patent or misappropriates- other intellectual property of the Third Party); or (iv) the development, manufacture or Commercialization of any Licensed Product by or for MirnaRx, its Affiliates or Sublicensees; except. in each ease, to the extent any such Losses result from the gross negligence or willful misconduct of Marina Bio Indemnitees or from the breach of any representation or warranty or covenant or obligation under this Agreement by Marina Bio.

8.3 Indemnification Procedures. Each Party (Marina Bio on behalf of Marina Bio Indemnitees, or MirnaRx on behalf of MirnaRx Indemnitees) will promptly notify the other Party when it becomes aware of a Claim for which indemnification may be sought hereunder. To be eligible to be indemnified for a Claim, a Person seeking indemnification (the "***indemnified Party***") shall (i) provide the Party required to indemnify such Person (the "***Indemnifying Party***") with prompt written notice of the Claim giving rise to the indemnification obligation under this Article 8, provided that, the failure to provide such prompt notice shall not relieve the Indemnifying Party of any of its obligations under this Article 8 except to the extent the Indemnifying Party is actually prejudiced thereby; (ii) provide the Indemnifying Party with the exclusive ability to defend (with the reasonable cooperation of the Indemnified Party) against the Claim; and (iii) not settle, admit or materially prejudice the Claim, without the Indemnifying Party's prior written consent. The Indemnified Party shall reasonably cooperate with the Indemnifying Party, at the Indemnifying Party's expense, in the defense of any Claim. Notwithstanding the foregoing, the Indemnified Party shall have the right to participate in and have its own counsel participate in any action or proceeding for which the

Indemnified Party seeks to be indemnified by the Indemnifying Party. Such participation shall be at the Indemnified Party's expense, unless (i) the Indemnifying Party and the Indemnified Party shall have mutually agreed to the retention of such counsel or (ii) the named parties to any such proceeding (including any impleaded parties) include both the Indemnifying Party and the Indemnified Party and representation of both Parties by the same counsel would be inappropriate due to actual or potential differing interests between them. The Indemnifying Party's obligations under Section 8.1 or 8.2, as the case may be, shall not apply to the extent of the Indemnified Party's failure to take reasonable action to mitigate any Losses. The :Indemnifying Party shall not settle or compromise or consent to the entry of any judgment with respect to any Claim, without the prior written consent of the indemnified Party, which will not be unreasonably withheld or delayed.

8.4 Insurance. MirnaRx shall, at its own expense, procure and maintain during the Term and for a period of [***] thereafter, insurance policy/policies, including product liability insurance, adequate to cover its obligations hereunder and which are consistent with normal business practices of prudent companies similarly situated.

[***] Certain information in this document has been omitted and filed separately with the Securities and Exchange Commission. Confidential treatment has been requested with respect to the omitted portions.

ARTICLE 9

CONFIDENTIALITY

9.1 Treatment of Confidential Information. The Parties agree that during the Term, and for a period of [***] after this Agreement expires or terminates, a Party receiving Confidential Information of the other Party shall (i) maintain in confidence such Confidential information; (ii) not disclose such Confidential Information to any Third Party without prior written consent of the disclosing Party, except as otherwise permitted in this Article 9; and (iii) not use such Confidential Information for any purpose other than the performance of or exercise of its rights under this Agreement.

9.2 Authorized Disclosure.

(a) If, based upon the advice of legal counsel skilled in the subject matter, a Party is required to disclose specific Confidential Information of the other Party to comply with an applicable law, regulation, legal process, or order of a government authority or court of competent jurisdiction, the Party may disclose such Confidential Information only to the entity or person required to receive such disclosure; provided, however, that the Party required to disclose such Confidential Information shall (a) to the extent permitted by such law, regulation, process, order or rules, first have given prompt (but in no event less than five (5) business days) advance notice to such other Party to enable it to seek any available exemptions from or limitations on such disclosure requirement and shall reasonably cooperate in such efforts by the other Party, (b) furnish only the portion of the Confidential Information which is legally required to be disclosed; (c) use all reasonable efforts to secure confidential protection of such Confidential Information, and (d) continue to perform its obligations of confidentiality and non-use set out in this Article 9.

(b) MirnaRx (and its Affiliates and Sublicensees) may disclose Confidential Information of Marina Bio to Regulatory Authorities to the extent such disclosure is reasonably necessary in regulatory filings required for the development and/or commercialization of Licensed Products. In addition, each Party may disclose Confidential Information of the other Party to the extent such disclosure is reasonably necessary in the following instances: filing or prosecuting, patents as permitted by this Agreement; and disclosure to Affiliates and Sublicensees and potential Sublicensees or other similar commercial partners, who need to know such information for the development, manufacture and commercialization of Licensed Products, to bankers, lawyers, accountants, agents or other Third Parties in connection with due diligence or similar investigations, and to potential Third Party investors in confidential financing documents or potential acquirers or merger partners in confidence pursuant to due diligence; provided that any such Sublicensee, licensee, contractor, employee, consultant, banker, lawyer, accountant, agent or Third Party is bound by obligations of confidentiality and non-use at least as restrictive as those set forth herein. In the case of each disclosure, the Party making such disclosure shall use reasonable efforts to obtain confidential treatment of any such disclosure, and shall not disclose Confidential Information of the other Party other than is reasonably necessary.

[***] Certain information in this document has been omitted and filed separately with the Securities and Exchange Commission. Confidential treatment has been requested with respect to the omitted portions.

9.3 Publicity; Terms of Agreement. The Parties shall treat the existence and material terms of this Agreement as confidential and shall not disclose such information to Third Parties without the prior written consent of the other Party or except as provided in Section 9.2 (treating such information as Confidential Information for purposes of Section 9.2) or as provided below. The Parties agree that upon execution of this Agreement or shortly thereafter, the Parties shall issue a joint press release, such press release attached hereto as Appendix C. Except for such press release or as otherwise required by applicable law or applicable stock exchange requirements, neither Marina Bio nor MirnaRx shall issue or cause the publication of any other press release or public announcement with respect to the transactions contemplated by this Agreement without the express prior approval of the other Party, which approval shall not be unreasonably withheld or delayed; provided that, each of Marina Bio and MirnaRx may make any public statement in response to questions by the press, analysts, investors or those attending industry conferences or financial analyst calls, or issue press releases, so long as any such public statement or press release is not inconsistent with prior public disclosures or public statements approved by the other Party pursuant to this Section 9.3 and which do not reveal non-public information about the other Party. With respect to complying with the disclosure requirements of the Securities and Exchange Commission or other regulatory agencies, in connection with any required filing of this Agreement with such agency, the Parties shall consult with one another concerning which terms of this Agreement shall be requested to be redacted in any public disclosure of the Agreement by the agency, and each Party shall seek confidential treatment by the agency in public disclosure of the Agreement by the agency for all sensitive commercial, financial and technical information, including the definitions of Licensed Products and Field of Use, and any dollar amounts set forth herein. Marina Bio agrees that the Side Letter contains the highly confidential information of MirnaRx and such information shall be deemed and treated as the Confidential Information of MirnaRx, and Marina Bio shall not disclose the contents of the Side Letter without MirnaRx's prior written consent or use such information for any purpose other than performing under this Agreement, *except* to the extent that specific information in such contents are within the exceptions in Section 1.9(a)-(d).

9.4 Injunctive Relief. Given the nature of the Confidential information and the competitive damage that would result to a Party upon unauthorized disclosure, use or transfer of its Confidential Information to any Third Party, the Parties agree that monetary damages may not be a sufficient

remedy for any breach of this .Article 9. In addition to all other remedies, a Party shall be entitled to seek specific performance and injunctive and other equitable relief as a remedy for any breach or threatened breach of this Article 9.

ARTICLE 10

TERM AND TERMINATION

10.1 Term. The term of this Agreement, as to a particular Licensed Product in a particular country, shall expire (on a country-by-country basis) upon the earlier of: (i) the expiration of the Royalty Term for such Licensed Product in such country, or (ii) the end of calendar quarter in which sales in such country of Generic Products exceed [***]% (on a "per unit" basis) of the sales of the Licensed Product in such country. Upon expiration of the Royalty Term with respect to a Licensed Product in a particular country, then the licenses granted in Section 2.1 for such Licensed Product in such country shall become non-exclusive, fully paid up

[***] Certain information in this document has been omitted and filed separately with the Securities and Exchange Commission. Confidential treatment has been requested with respect to the omitted portions.

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and irrevocable, and shall survive any expiration or termination of this Agreement. This Agreement shall expire in its entirety upon the expiration of the last Royalty Term for any Licensed Product with respect to which MirnaRx has a license under this Agreement, unless earlier terminated pursuant to this Article 10.

10.2 Termination.

(a) Termination for Convenience. MirnaRx shall have the right to terminate this Agreement for convenience by giving sixty (60) days prior written notice to Marina Bio, *provided that* no such termination shall be effective sooner than the date that is six (6) months after the Effective Date.

(b) Termination for Bankruptcy/Insolvency. A Party- may immediately terminate this Agreement on written notice in the event (each, a "***Financial Event***") any of the following occurs with respect to the other Party (the "***Bankrupt Party***"): (a) such Bankrupt Party files a petition in bankruptcy or makes a general assignment for the benefit of creditors or otherwise acknowledges in writing insolvency, or is adjudged bankrupt, and such Bankrupt Party (i) fails to assume this Agreement in any such bankruptcy proceeding within thirty (30) days after filing or (ii) assumes and assigns this Agreement to a Third Party; (b) such Bankrupt Party goes into or is placed in a process of complete liquidation; (c) a trustee or receiver is appointed for any substantial portion of such Bankrupt Party's business and such trustee or receiver is not discharged within sixty (60) days after appointment; (d) any case or proceeding shall have been commenced or other action taken against such Bankrupt Party in bankruptcy or seeking liquidation; reorganization, dissolution, a winding-up arrangement, composition or readjustment of its debts or any other relief under any bankruptcy, insolvency, reorganization or similar act or law of any jurisdiction now or hereafter in effect and is not dismissed or converted into a voluntary proceeding governed by clause (a) above within sixty (60) days after filing; or (e) there shall have been issued a warrant of attachment, execution, distraint or similar process against any substantial part of the property of such Bankrupt Party and such event shall have continued for a period of sixty (60) days and none of the following has occurred: (i) it is dismissed, (ii) it is bonded in a manner reasonably satisfactory to the other Party, or (iii) it is discharged.

(c) Termination for MirnaRx Default. Upon any Default by MirnaRx under this Agreement, Marina Bio may notify MirnaRx of such Default and require that MirnaRx cure such Default, which cure period shall be not shorter than thirty (30) days of Marina Bio's notice for any Default of a payment obligation under this Agreement, or ninety (90) days of Marina Bin's notice for any other Default. In the event MirnaRx shall not have cured the Default by the end of the applicable cure period, Marina Bio may terminate this Agreement immediately upon written notice to MirnaRx. Notwithstanding the foregoing cure period, non-payment of the upfront license fee set forth in Section 5.1 by [***], shall automatically and immediately terminate this Agreement.

(d) Termination for Marina Bio Default. Upon any Default by Marina Bio under this Agreement, MirnaRx may notify Marina Bio in writing of such Default and require that Marina Bio cure such Default within ninety (90) days of MirnaRx's notice. In the event Marina Bio shall not have cured the Default by the end of the cure period, MirnaRx may terminate this Agreement immediately upon written notice to Marina Bio.

[***] Certain information in this document has been omitted and filed separately with the Securities and Exchange Commission. Confidential treatment has been requested with respect to the omitted portions.

10.3 Effects of Termination. Upon termination of this Agreement pursuant to Section 10.2: (a) all licenses granted hereunder to MirnaRx shall revert to Marina Bio; (b) sublicenses granted by MirnaRx under the rights or licenses granted to MirnaRx under this Agreement shall survive such termination, *provided that* the applicable Sublicensees are not in material breach of such sublicense agreements, and shall become direct licenses with Marina Bio *except that* Marina Bio shall not have any obligations under any such sublicense agreements that are greater than the obligations of Marina Bio under this Agreement; and (c) MirnaRx (and its Affiliates) shall immediately cease all development and Commercialization of any Licensed Products that contain Licensed Know-How that is Confidential Information of Marina Bio and/or are claimed by a Valid Claim, and shall return to Marina Bio all physical manifestations of the Licensed Technology and Marina Bio Confidential Information.

10.4 Survival. The following provisions shall survive any expiration or termination of this Agreement: Articles [***] and [***], and. Sections [***] and [***] and the applicable Sections of Article 1 (as needed to apply to the foregoing surviving Sections and Articles). Termination of this Agreement shall not relieve the Parties of any liability which accrued hereunder prior to the effective date of such termination nor preclude either Party from pursuing all rights and remedies it may have hereunder or at law or in equity with respect to any Default of this Agreement nor prejudice either Party's right to obtain performance of any obligation.

ARTICLE 11

DISPUTE RESOLUTION

11.1 Disputes. In the event that any issue, controversy or claim between the Parties arises out of, relating to or in connection with, any provision of this Agreement, or the rights or obligations of the Parties hereunder (a "***Dispute***"), the Parties shall try to settle such Dispute and their differences amicably between themselves. Either Party may initiate such informal dispute resolution by sending written notice of the Dispute to the other Party. and within [***] after such notice appropriate representatives of the Parties shall meet for attempted resolution by good faith negotiations. If such representatives are unable to resolve promptly such Dispute, it shall be referred to the Executive Officers for discussion and resolution. If such personnel are unable to resolve such Dispute within [***] of initiating such negotiations, unless otherwise agreed by the Parties, such dispute shall be finally settled under Section 11.2.

11.2 Arbitration. For any Dispute involving amounts owed under the Agreement, or whether a Party has breached its obligations under the Agreement (and/or has cured such breach), such Dispute (if not resolved by the Parties under Section 11.1) shall be resolved by final and binding arbitration in accordance with this Section 11.2, under the Commercial Arbitration Rules and Supplementary Procedures for Large Complex Disputes of the American Arbitration Association ("***AAA***") by a single arbitrator. Either Party may, following the end of the good faith negotiation period referenced in Section 11.1, refer any such Dispute to arbitration by submitting written notice to the other Party. Within [***] of delivery of such notice, the Parties shall meet and discuss in good faith and agree on (a) an arbitrator to resolve the issue, which arbitrator shall be neutral and independent of both Parties and all of their respective Affiliates, shall have significant experience and expertise in licensing and partnering agreements in the pharmaceutical industry and other relevant experience and (b) any changes in these

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arbitration provisions or the rules of arbitration which are herein adopted, in an effort to expedite the process and otherwise ensure that the process is appropriate given the nature of the dispute and the values at risk. If the Parties cannot agree on such arbitrator within [***] of request by a Party for arbitration, then such arbitrator shall be appointed by AAA, which arbitrator must meet the foregoing criteria. The arbitration shall be held in New York, New York, and the proceedings shall be conducted in the English language. The arbitrators may proceed to an award, notwithstanding the failure of either Party to participate in the proceedings. The arbitrator shall be instructed that time is of the essence in the arbitration proceeding. The arbitrator shall, within [***] after the conclusion of the arbitration hearing, issue a written award and statement of decision describing the essential findings and conclusions on which the award is based, including the calculation of any damages awarded (if applicable). The arbitrator shall be authorized to award compensatory damages, but shall not be authorized to (i) award non-economic or punitive damages to the extent expressly excluded under this Agreement, or (ii) reform, modify or materially change this Agreement or any other agreements contemplated hereunder; provided, however, that the damage limitations described in part (i) of this sentence will not apply if such damages are statutorily imposed. Judgment on the award rendered by the arbitrator may be enforced in any court having competent jurisdiction thereof, or application may be made to the court for a judicial recognition of the award or an order of enforcement as the case may be, subject only to revocation on grounds of fraud or clear bias on the part of the arbitrator. Notwithstanding anything contained in this Section 11.2 to the contrary, either Party shall have the right to seek equitable relief or interim or provisional relief from a court of competent jurisdiction, including a temporary restraining order, preliminary injunction or other interim equitable relief; concerning a dispute either prior to or during any arbitration if necessary to protect the interests of such Party or to preserve the status quo pending the arbitration proceeding. The Parties agree that the arbitration shall be kept confidential and that the existence of the proceeding and any element of its (including any pleadings, briefs or other documents submitted or exchanged, any testimony or other oral submissions and any awards) shall not be disclosed beyond the arbitrator, the Parties, their counsel and any person necessary to the conduct of the proceeding, except as may lawfully be required in judicial proceedings relating to the arbitration or otherwise.

ARTICLE 12

MISCELLANEOUS

12.1 Entire Agreement; Amendment. This Agreement, including the appendices, constitutes the entire agreement between the Parties (or their Affiliates) related to the subject matter hereof. All prior and contemporaneous negotiations, representations, warranties, agreements, statements, promises and understandings related to the subject matter hereof are superseded by and merged into and extinguished and completely expressed by this Agreement, including the exhibits. No Party shall be bound by or charged with any written or oral agreements, representations, warranties, statements, promises or understandings not specifically set forth in this Agreement. As of the Effective Date, the Confidentiality Agreement is hereby superseded by this Agreement as to Marina Bio and MirnaRx, provided that all Confidential information (as defined in the Confidentiality Agreement) disclosed thereunder shall be treated as Confidential Information disclosed under, and subject to the terms of, this Agreement. No

[***] Certain information in this document has been omitted and filed separately with the Securities and Exchange Commission. Confidential treatment has been requested with respect to the omitted portions.

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subsequent alteration, amendment, change or addition to this Agreement shall be binding upon the Parties unless reduced to writing and signed by an authorized officer of each Party.

12.2 Notices. Any notice required or permitted to be given under this Agreement shall be in writing and shall be deemed to have been sufficiently given for all purposes (i) when delivered, if sent by recognized overnight courier or personally delivered, or (ii) upon confirmation of receipt, if sent by facsimile transmission (provided a duplicate hard copy is promptly delivered by one of the other foregoing means), in each case using the mailing addresses of the Parties as set forth below (or such other mailing address of which a Party is notified pursuant to this Section 11.2):

For MirnaRx:	Mirna Therapeutics, Inc. 2150 Woodward St., Suite 100 Austin, TX 78744 Attn: Chief Executive Officer Tel : (512) 901-0900 Fax : (512) 681-5201
With a copy to:	Cooley LLP

Five Palo Alto Square
3000 El Camino Real
Palo Alto, CA 94306-2155
Attn: Barclay James Kamb, Esq.
Facsimile: (650) 849-7400

For Marina Bio:

Marina Bio Biotech, Inc.
3830 Monte Villa Parkway
Bothell, Washington 98021
Attn: President & CEO
Facsimile: (425) 908-3650

With a copy to:

Pryor Cashman LLP
7 Times Square
New York, NY 10036
Attn: Lawrence Remmel
Facsimile: (212) 798-365

12.3 Governing Law. This Agreement shall be governed and construed in accordance with the laws of the State of New York, without regard to any applicable principles of conflicts of law.

12.4 Limitation of Liability. EXCEPT FOR LIABILITY FOR BREACH OF OBLIGATIONS UNDER ARTICLE 9 OR FOR FRAUD OR COMPARABLE INTENTIONAL MISCONDUCT, NEITHER PARTY SHALL BE ENTITLED TO RECOVER FROM THE OTHER PARTY ANY INDIRECT, SPECIAL, INCIDENTAL, CONSEQUENTIAL OR PUNITIVE DAMAGES IN CONNECION WITH THIS AGREEMENT OR ANY LICENSE GRANTED HEREUNDER. However, the foregoing limitations in this Section 12.4 shall not

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apply with respect to either Party's indemnification Obligations under Sections 8.1 or 8.2 for Third Party Claims.

12.5 Interpretation. Marina Bio and MirnaRx have each participated in negotiations and due diligence and consulted their respective counsel regarding this Agreement. In the event an ambiguity or question of intent or interpretation arises, this Agreement shall be construed as if drafted jointly by the Parties and no presumption or burden of proof shall arise favoring or disfavoring any Party by virtue of the authorship of any provisions of this Agreement.

12.6 Assignment. This Agreement may not be assigned by either party without the express written consent of the other party, except that either Party may assign the Agreement to its Affiliate or to its successor in interest in connection with. a merger, consolidation or sale of all or substantially all of its assets.

12.7 Performance by Affiliates. Each of Marina Bio and MirnaRx acknowledge that obligations under this Agreement may be performed by Affiliates of MirnaRx.

12.8 Severability. In the event that any one or more of the provisions contained herein, or the application thereof in any circumstances, is held invalid, illegal or unenforceable in any respect for any reason, the Parties shall negotiate in good faith with a view to the substitution therefor of a suitable and equitable provision in order to carry out, so far as may be valid and enforceable, the intent and purpose of such invalid provision; provided, however, that the validity, legality and enforceability' of any such provision in every other respect and of the remaining provisions contained herein shall not be in any way impaired thereby, it being intended that all of the rights and privileges of the Parties hereto shall be enforceable to the fullest extent permitted by law.

12.9 Headings. The heading for each article and section in this Agreement has been inserted for convenience of reference only and is not intended to limit or expand on the meaning of the language contained in the particular article or section.

12.10 Further Actions. Each Party agrees to execute, acknowledge and deliver such further instruments, and to do all such other acts, as may be necessary or appropriate in order to carry out the purposes and intent of the Agreement,

12.11 Independent Contractors. The relationship between MirnaRx and Marina Bio created by this Agreement is solely that of independent contractors. This Agreement does not create any agency, distributorship, employee-employer, partnership, joint venture or similar business relationship between the Parties. Neither Party is a legal representative of the other Party, and neither Party can assume or create any obligation, representation, warranty or guarantee, express or implied, on behalf of the other Party for any purpose whatsoever. Each Party shall use its own discretion and shall have complete and authoritative control over its employees and the details of performing its obligations under this Agreement.

12.12 No Waiver. A Party's consent to or waiver, express or implied, of the other Party's breach of its obligations hereunder shall not be deemed to be or construed as a consent to or waiver of any other breach of the same or any other obligations of the other Party. A Party's failure to complain of any act, or failure to act, by the other Party, to declare the other Party in

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default, to insist upon the strict performance of any Obligation or condition of this Agreement or to exercise any right or .remedy consequent upon a breach thereof, no matter how long such failure continues, shall not constitute a waiver by such Party of its rights hereunder, of any such breach, or of any other obligation or condition. A Party's consent in any one instance shall not limit or waive the necessity to obtain such Party's consent in any future instance and in any event no consent or waiver shall be effective for any purpose .hereunder unless such consent or waiver is in writing and signed by the Party granting such consent or waiver.

12.13 Fees and Expenses. Regardless of whether or not the transactions contemplated by this Agreement are consummated, each Party shall bear its own fees and expenses incurred in connection with the negotiation and execution of this Agreement.

12.14 No Other Rights. The Parties acknowledge and agree that, except as expressly set forth in this Agreement, neither Party grants any fights or licenses to the other Party under this Agreement nor shall either Party have any rights or obligations under this Agreement.

12.15 Parties in Interest. This Agreement shall be binding upon and inure solely to the benefit of each Party hereto and its respective successors and permitted assigns, and nothing in this Agreement, express or implied, is intended to or shall confer upon any other person any right, benefit or remedy of any nature whatsoever under or by reason of this Agreement (with the exception of MirnaRx Indemnitees and Marina Bio Indemnitees under Sections 8.1 and 8.2, respectively).

12.16 Rules of Construction. The use in this Agreement of the term "***including***" (or any cognates thereof, such as "***include***" or "***includes***") means "***including*** (or the applicable cognate thereof), without limitation." The words "***herein***," "***hereof***," "***hereunder***," and other words of similar import refer to this Agreement as a whole, including the exhibits, and not to any particular section, subsection, paragraph, subparagraph or clause contained in this Agreement. All references to sections and exhibits mean those sections of this Agreement and the Appendixes attached to this Agreement, except where otherwise-stated.

12.17 Counterparts. This Agreement may be executed in two (2) or more counterparts, each of which shall be deemed an original, but all of which together shall constitute one and the same instrument.

[Signature page follows]

IN WITNESS WHEREOF, the Parties have executed this Agreement by their duly authorized representatives as of the Effective Date.

MARINA BIOTECH, INC.	**MIRNA THERAPEUTICS, INC.**
By: /s/ J. Michael French	By: /s/ Paul Lammers
Print Name: J. Michael French	Print Name: Dr. Paul Lammers
Title: President and CEO	Title: President and CEO

APPENDIX A

LIST OF CERTAIN LICENSED PATENTS

Case No.	Title	Jurisdiction	Application Number	Filing Date	Patent Number	Date Issued	Estimated Expiration Date	Status
[***]	[***]	[***]	[***]	[***]	[***]	[***]	[***]	[***]

[***] 8 pages in this document have been omitted and filed separately with the Securities and Exchange Commission. Confidential treatment has been requested with respect to the omitted portions.

APPENDIX B

EXAMPLE OF CALCULATION OF CUMULATIVE SUBLICENSE FEES

The following is an example of the calculation of payment of Sublicense Fees under Section 5.6, under a hypothetical sublicense agreement under this Agreement:

Hypothetical: Assume that MirnaRx grants a sublicense to a Sublicensee to develop and commercialize its Licensed Product "[***]" when such product has [***] but before [***]. Assume further that under such sublicense agreement, the Sublicensee pays MirnaRx an upfront sublicense fee of $[***], pays no milestone payment on [***], and pays MirnaRx the following milestone payments with respect to such sublicense grant on achieving the listed milestone events: (a) $[***] on [***], $[***] on [***], and $[***] on [***].

Based on the foregoing assumptions (and understanding that this is just a hypothetical example and provides no precedence or assumption of the terms of an actual sublicense deal), MirnaRx would pay to Marina Bio Sublicense Fees in the following amounts and times under such hypothetical:

- Sublicense Fee of $[***], by the date [***] after the upfront sublicense fee is paid ([***]% of the upfront)
- Sublicense Fee of $[***], by the date [***] after the [***] milestone for [***] is achieved by Sublicensee (the "True-Up Payment" of $[***] equal to the difference between the "[***]" milestone payment amount under Section 5.3(a)(i)(2) and the "Cumulative Sublicense Fees" paid to Marina Bio up to that point for such product)
- Sublicense Fee of $[***], by the date [***] after [***] (equal to [***]% of the milestone payment made by the Sublicensee, plus a "True-up Payment" of $[***], such that the Cumulative Sublicensee Fees as of such date (such cumulative amount equal to $[***] after such True-Up Payment) equals the Milestone Payment Sum as of such date (which is $[***], including the milestone payment amount under Section 5.3(a)(i)(3) for achieving a [***] milestone)

- Sublicense Fee of $[***] by the date [***] after [***] ([***]% of the milestone payment paid by Sublicensee to MirnaRx for [***])

- Sublicense Fee of $[***], by the date [***] after [***] (equal to [***]% of the milestone payment by the Sublicensee, plus a "True-up Payment" of $[***], such that the Cumulative Sublicensee Fees as of such date (such cumulative amount equal to $[***] after such True-Up Payment) equals the Milestone Payment Sum as of such date (which is $[***], including the milestone payment amount under Section 5:3(a)(i)(4) for [***])

[***] Certain information in this document has been omitted and filed separately with the Securities and Exchange Commission. Confidential treatment has been requested with respect to the omitted portions.

APPENDIX C

JOINT PRESS RELEASE

Marina Biotech and Mirna Therapeutics Announce License Agreement for the Development of microRNA-based Therapeutics

- Mirna Therapeutics will develop oncology-focused compounds utilizing their proprietary microRNAs combined with Marina Biotech's novel SMARTICLES® liposomal delivery technology -

Bothell, WA and Austin, TX December 23, 2011 — Marina Biotech, Inc. (Nasdaq: MRNA), a leading oligonucleotide-based drug discovery and development company, and Mirna Therapeutics, Inc. (Mirna), a privately-held biotechnology company pioneering microRNA (miRNA) replacement therapy for cancer, announced today that they have entered into a license agreement regarding the development and commercialization of microRNA-based therapeutics utilizing Mirna's proprietary microRNAs and Marina Biotech's novel SMARTICLES liposomal delivery technology. Mirna will have full responsibility for the development and commercialization of any products arising under the Agreement and Marina Biotech will support pre-clinical and process development efforts. Under terms of the Agreement, Marina Biotech could receive up to $63 million in total upfront, clinical and commercialization milestone payments, as well as royalties on sales, based on the successful outcome of the collaboration. Further terms of the Agreement were not disclosed.

"Given the challenge of effectively delivering oligonucleotides to target tissues, we devoted considerable effort to identifying an optimal delivery technology that would allow for systemic administration of our potent miRNA tumor suppressors and which is already in clinical testing," said Paul Lammers, M.D., M.Sc., President and CEO of Mirna Therapeutics. "With the dramatic in vivo results achieved with our miRNA. mimics, we believe the SMARTICLES technology solves the delivery challenge for us, and we are now looking forward to bringing our miRNA mimics into the clinic in the next 18 months as promising targeted cancer therapeutics.

"We are extremely pleased to have entered into this relationship with a company as well respected in the area of microRNA-based therapeutics as Mirna Therapeutics," stated J. Michael French, President and CEO of Marina Biotech. "We are excited to see the continued advancement of oligonucleotide-based therapeutics and to be able to provide a technology capable of effectively delivering, in this case, systemically administered miRNA mimetics. We look forward to the rapid advancement. of Mirna. Therapeutics' clinical pipeline and the opportunity to bring novel therapeutics to patients in need."

In a recent poster entitled "The Development of a miRNA-based Therapeutic Candidate for Hepatocellular Carcinoma," presented at the November, 2011 AACR-.NCI-EORTC International Conference on Molecular Targets and Cancer Therapeutics in San Francisco, CA, Mirna scientists showed that mimics of five tumor suppressor miRNAs, including miR-34 and let-7, all significantly inhibited the growth of liver tumors compared to animals treated with formulated negative control miRNAs. The five miRNA mimics were complexed. with Marina

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Biotech's SMARTICLES delivery formulation and injected into NOD/SCID mice with orthotopically grown Hep3B human liver cancer xenografts.

The companies will present their respective science and technologies at the upcoming Biotech Showcase™ 2012, January 9-11, 2012 at the Parc 55 Wyndham San Francisco - Union Square at 55 Cyril Magnin Street, San Francisco, CA. Mirna Therapeutics will present on Monday, 9 January at 3:00 pm and Marina Biotech will present on Tuesday, 10 January at 2:30 pm.

About Marina Biotech, Inc.

Marina Biotech is a biotechnology company focused on the development and commercialization. of oligonucleotide-based therapeutics utilizing multiple mechanisms of action including RNA interference (RNAi) and messenger RNA translational blocking. The Marina Biotech pipeline currently includes a clinical program in Familial Adenomatous Polyposis (a precancerous syndrome) and two preclinical programs — in bladder cancer and malignant ascites. Marina Biotech entered into an exclusive agreement with The Debiopharm Group for the development and commercialization of the bladder cancer program. Marina Biotech's goal is to improve human health through the development of RNAi- and oligonucleotide-based compounds and drug delivery technologies that together provide superior therapeutic options for patients. Additional information about Marina Biotech is available at http://www.marinabio.com.

About Mirna Therapeutics, Inc.

Mirna Therapeutics is a biotechnology company focused on the development and commercialization of microRNA (miRNA) therapeutics. The Company has a substantial intellectual property portfolio on the therapeutic use of miRNAs developed by its own scientists as well as in-licensed from other institutions. Mirna's IP portfolio contains >300 miRNAs with applications in oncology and other diseases. Oncology-directed miRNAs include those that are key tumor suppressors in cancer, such as miR-34 and let-7 that have proven to block tumor growth in. a number of different pre-clinical animal studies. The Company, founded in 2007, is located in Austin, Texas, and has received significant funding from the State of Texas, both through the State's Emerging Technology Fund and from the Cancer Prevention and Research Institute of Texas (CPRIT). Mirna Therapeutics is the recipient of a $10.3 million commercialization award from CPRIT. For more information, visit www.MirnaRx.com

Forward-Looking Statements

Statements made in this news release may be forward-looking statements within the meaning of Federal Securities laws that are subject to certain risks and uncertainties and involve factors that may cause actual results to differ materially from those projected or suggested. Factors that could cause actual results to differ materially from those in forward-looking statements include, but are not limited to: (i) the ability of Marina Biotech to obtain additional funding; (ii) the ability of Marina Biotech to attract and/or maintain manufacturing, research, development and commercialization partners; (iii) the ability of Marina Biotech and/or a partner to successfully complete product research and development, including preclinical and clinical studies and commercialization; (iv) the ability of Marina Biotech and/or a partner to obtain required governmental approvals; and (v) the ability of Marina Biotech and/or a partner to develop and

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commercialize products prior to, and that can compete favorably with those of, competitors. Additional factors that could cause actual results to differ materially from those projected or suggested in any forward-looking statements are contained in Marina Biotech's most recent periodic reports on Form 10-K and Form 10-Q that are filed with the Securities and Exchange Commission. Marina Biotech assumes no obligation to update and supplement forward-looking statements because of subsequent events.

Marina Biotech, Inc.
Philip Ranker
Interim Chief 'Financial Officer
(425) 908-3615
pranker@marinabio.com

Mirna Therapeutics, Inc.
Paul Lammers, M.D., M.Sc.
President and Chief Executive Officer
(512) 901-0900
plammers@mirnarx.com

Exhibit 10.3(B)

[***] Certain information in this document has been omitted and filed separately with the Securities and Exchange Commission. Confidential treatment has been requested with respect to the omitted portions.

CONFIDENTIAL

December 22, 2011

Marina Biotech, Inc.
3830 Monte Villa Parkway
Bothell, Washington 98021
Attn: Michael French, Chief executive Officer

Re: Agreement re Option Compound and miR-34 Sequences

Dear Michael:

As you know, Mirna Therapeutics, Inc. ("MirnaRx") and Marina Biotech, Inc. ("Marina Bio") are entering into that certain License Agreement effective as of the date set forth above (the "License Agreement"). This letter agreement is that certain Side Agreement referred to in the License Agreement, and it sets forth the RNA oligonucleotide sequences of certain MirnaRx Compounds which are covered by rights under the Licensed Agreement.

The Parties hereby agree that the list of RNA oligonucleotide sequences attached as the Appendix of this letter agreement comprises sequences of the Option Compounds and miR-34, as such terms are used in the Licensed Agreement, and that such list may be amended by MirnaRx as provided in Section 2.6 of the Licensed Agreement, to [***]. The Parties further agree that such sequences are the highly confidential information of MirnaRx, and Marina Bio shall not disclose such sequences to any third party or use them for any purpose outside of the License Agreement.

AGREED TO BY

Mirna Therapeutics, Inc.

Signature: /s/ Paul Lammers
Paul Lammers, M.D., M.Sc.
Chief Executive Officer

Marina Biotech, Inc.

Signature: /s/ Michael French
Michael French
Chief Executive Officer

APPENDIX

Option Compound Sequences:

[***]

miR-34 Sequence:

[***]

[***] Certain information in this document has been omitted and filed separately with the Securities and Exchange Commission. Confidential treatment has been requested with respect to the omitted portions.

Exhibit 10.3(C)

[***] Certain information in this document has been omitted and filed separately with the Securities and Exchange Commission. Confidential treatment has been requested with respect to the omitted portions.

November 16, 2012 M0389

Marina Biotech, Inc.
3830 Monte Villa Parkway
Bothell, Washington 98201

Re: Amendment Regarding Payment of Certain Milestone Payments (the "Amendment")

Gentlemen:

Reference is made to that certain License Agreement (the "*Agreement*") effective December 22, 2011 by and between Mirna Therapeutics, Inc., a Delaware corporation ("*MirnaRx*"), and Marina Biotech, Inc., a Delaware corporation ("*Marina Bio*"). Each of MirnaRx and Marina Bio may be referred to herein as a "*Party*" or together as the "*Parties*." Capitalized words used but not defined herein shall have the meaning ascribed to such terms in the Agreement. MirnaRx and Marina Bio agree as follows:

1. With respect to the first Licensed Product, the Milestone Payment of [***] set forth in Section 5.3(a)(i)(1) of the Agreement related to [***] shall be reduced to [***] provided that such Milestone Payment is paid in full by MirnaRx to Marina Bio on or before [***].

2. In order to induce MirnaRx to enter into this Amendment, Marina Bio hereby affirms and restates as of the date hereof each of its representations and warranties contained in Section 7.1 of the Agreement. Without limiting the foregoing, Marina Bio affirms that it owns all the Licensed Technology, has full legal rights and authority to grant the licenses and rights under the Licensed Technology granted under the Agreement, and has not assigned, transferred, conveyed or licensed its right, title and interest in the Licensed Technology in any manner inconsistent with such license grant or the other terms of the Agreement. Marina Bio further agrees that in the event that Marina Bio sells, assigns, conveys or otherwise transfers any of its right, title and interest in the Licensed Technology, it shall require, as a condition of any such sale, assignment, conveyance or transfer, that the purchaser or assignee, as the case may be, of such Licensed Technology expressly assume Marina Bio's obligations under the Agreement with respect to such Licensed Technology. Nothing contained in the foregoing sentence shall amend the restrictions on assignment of the Agreement set forth in Section 12.6 of the Agreement.

3. Marina Bio hereby further represents and warrants to MirnaRx as follows:

(a) As of the date hereof Marina Bio has the corporate power and authority and legal right to enter into this Amendment and perform its obligations hereunder. Marina Bio has taken all necessary corporate action on its part required to authorize the execution and delivery of this Amendment and the performance of its obligations hereunder. This Amendment constitutes the legal, valid and binding obligation of Marina Bio that is enforceable against it in accordance with its terms.

(b) The execution, delivery and performance of this Amendment by Marina Bio does not conflict with, and will not result in a breach of, any material agreement, instrument or understanding, oral or written to which it is a party or by which it may be bound, nor violate any material law or regulation of any court, governmental body or administrative or other agency having jurisdiction over it.

4. Except as expressly amended by this Amendment, all terms and conditions of the Agreement are and shall remain in full force and effect.

5. This Amendment shall be governed by the laws of the State of New York, without regard to any applicable principles of conflicts of laws.

6. This Amendment may be executed in two (2) or more counterparts, each of which shall be deemed an original, but all of which together shall constitute one and the same instrument.

7. This Amendment shall be treated as Confidential Information by the Parties hereto and neither Party shall disclose this Amendment, or any of the terms included herein, to Third Parties without the prior written consent of the other Party or except as provided in Section 9.2 or 9.3 of the Agreement (treating such information as Confidential Information for purposes of Sections 9.2 and 9.3 of the Agreement).

8. To the extent that the terms set forth in this Amendment conflict with the terms of the Agreement, the terms of this Amendment shall govern and control.

If the foregoing accurately reflects our agreement with respect to the subject matter set forth herein, please indicate your acceptance by countersigning below and returning to us a copy of this letter, which shall thereupon constitute a binding agreement between MirnaRx and Marina Bio effective as of the date set forth above.

Best regards.

Mirna Therapeutics, Inc.

By: /s/ Paul Lammers

Paul Lammers
Chief Executive Officer

Acknowledged and Agreed on Behalf of Marina Biotech, Inc. by its duly authorized representative:

By: /s/ J. Michael French
Name: J. Michael French
Title: President and CEO

[***] Certain information in this document has been omitted and filed separately with the Securities and Exchange Commission. Confidential treatment has been requested with respect to the omitted portions.

AMENDMENT No. 1 to LICENSE AGREEMENT

This AMENDMENT NO. 1 to LICENSE AGREEMENT (this "**Amendment**") is made and entered into effective as of December 27, 2013 (the "**Amendment Effective Date**"), by and between Mirna Therapeutics, Inc., a Delaware corporation with offices at 2150 Woodward Street, Suite 100, Austin, Texas 78744 ("**MirnaRx**"), and Marina Biotech, Inc., a Delaware corporation with offices at 3830 Monte Villa Parkway, Bothell, Washington 98021 ("**Marina Bio**").

WHEREAS, MirnaRx and Marina Bio are parties to a License Agreement dated December 22, 2011 (the "**License Agreement**"), pursuant to which Marina Bio granted to MirnaRx a license under Marina Bio's technology and intellectual property rights relating to Marina Bio's liposomal delivery technology known as NOV340 (the "**Marina Technology**"), to develop and commercialize drug products incorporating such Marina Technology in combination with MirnaRx's proprietary compound miR-34, and other specified compounds selected by MirnaRX pursuant to the terms of the License Agreement; and

WHEREAS, MirnaRx and Marina Bio desire to amend the License Agreement to modify the consideration payable by MirnaRX to Marina Bio upon selection by MirnaRx of certain additional compounds for further development and commercialization using the Marina Technology, the timing of the payment of such consideration, and to modify certain milestone and royalty payment obligations relating to the development and commercialization of products containing miR-34 using the Marina Technology.

NOW THEREFORE, in consideration of the foregoing premises, the mutual promises and covenants of the Parties hereinafter set forth, and other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the Parties, intending to be legally bound, do hereby agree as follows.

1.1. Amendment of License Agreement. In accordance with Section 12.1 of the License Agreement, the Parties hereby agree to amend the License Agreement, effective as of the Amendment Effective Date, in accordance with the remainder of this Section 1. Capitalized terms not defined in this Amendment shall have the meaning given to those terms in the License Agreement. With the exception of those sections of the License Agreement that are expressly amended by this Amendment, the remainder of the Master Agreement shall remain in full force and effect as provided therein.

1.2. Section 1.48 of the License Agreement shall be amended and restated in its entirety with the following:

1.48 "**Selected MirnaRx Compound**" means: (a) the MirnaRx Compound known as miR-34 (the sequence of which is set forth in the Side Letter); or (b) any other MirnaRx Compound that MirnaRx selects, as provided in Section 2.6, to combine with the Marina Bio Technology and to develop (or have developed) as a Licensed Product, and including, for any such Selected MirnaRx Compound, any other MirnaRx Compound that

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has at least [***] sequence homology with such Selected MirnaRx Compound, and for each of (a) and (b) including without limitation the compounds listed on Appendix D.

1.3. Section 5.2 of the License Agreement shall be amended and restated in its entirety with the following:

5.2 **Selection Fee Payments:**

(a) As permitted by Section 2.6, in addition to miR-34, MirnaRx has selected three (3) Option Compounds that are listed on Appendix D to be Selected MirnaRx Compounds. In partial consideration of the license rights granted by Marina Bio under this Agreement, and for the right to develop and commercialize such additional Selected MirnaRx Compounds, MirnaRx shall pay Marina Bio [***] for the designation of such [***] as Selected MirnaRx Compounds equal to [***], which amount shall be paid in full on or before December 27, 2013

(b) With respect to any new MirnaRx Compound that is selected by MirnaRx as a Selected MirnaRx Compound in accordance with Section 2.6 (including without limitation any Option Compound not listed on Appendix D), then MirnaRx shall pay Marina Bio an additional compound selection fee of [***], such amount to be paid as follows: (i) with respect to any Option Compound (other than those listed on Appendix D) that is selected by MirnaRx as a Selected MirnaRx Compound in accordance with Section 2.6, (i) [***] of such amount shall be paid within [***] of the date that MirnaRx selects the Selected MirnaRx Compound under Section 2.6, and (ii) the balance [***] will be paid [***], and (b) with respect to any Selected MirnaRx Compounds that are not Option Compounds when selected by MirnaRx under Section 2.6, the total amount of [***] for such Selected MirnaRx Compound shall be paid within [***] of the date that MirnaRx selects the Selected MirnaRx Compound under Section 2.6. All such selection fees shall be in addition to any amounts due based on sublicensing Revenue received by MirnaRx (if any) for sublicensing a Licensed Product containing the applicable Selected MirnaRx Compound, as set forth in Section 5.6 below.

1.4. A new Appendix D shall be added to the License Agreement entitled "Selected MirnaRx Compounds", which shall read in its entirety as follows:

Appendix D

miR-34
[***]

1.5. Simultaneous with the execution of this Amendment, MirnaRx shall provide to Marina Bio the sequences of each of the Selected MirnaRx Compounds listed an Appendix D in a separate side letter (the "**Amendment Side Letter**"). The Amendment Side Letter shall also set forth the sequences of the remaining Option Compounds that have not been designated by MirnaRx as Selected MirnaRx Compounds as of the Amendment Effective Date.

[***] Certain information in this document has been omitted and filed separately with the Securities and Exchange Commission. Confidential treatment has been requested with respect to the omitted portions.

1.6. Section 5.3 shall be amended and restated in its entirety with the following:

5.3 **Milestone Payments**.

(a) In partial consideration of the license rights granted by Marina Bio under this Agreement, MirnaRx shall pay to Marina Bio a milestone payment upon the first achievement by MirnaRx (independently of work done by or in collaboration with a Sublicensee) of the applicable milestone event set forth in the table below, such payments to be in the listed amounts for the applicable Milestone Event:

Milestone Event	**Milestone Payment**
(i) For each Licensed Product:	
[***]	[***]
(ii) For each Additional Indication for the Licensed Product, up to total of [***] Additional Indications:	
(1) [***]	[***]

(b) For clarity, each of the above milestone payments shall be paid only once for a particular Licensed Product, regardless if any such Milestone Event is achieved more than once, except that [***]. Further, if a particular Licensed Product achieves a particular Milestone Event under subclause (i) of the above table without having achieved a previous Milestone Event in such subclause (i), then such previous Milestone Event shall be deemed also achieved, and the Milestone Payment associated with such Milestone Event shall then be paid with the achievement of the subsequent Milestone Event. For illustrative purposes only, if the [***] Milestone Event as set forth in (i)(3) in the table above is not achieved for a Licensed Product but the [***] Milestone Event as set forth in (i)(4) above is achieved for such Licensed Product, then the Milestone Payment for achievement of the Milestone Event in clause (i)(3) [***] will be paid when the Milestone Payment for (i)(4) is paid. The total amount of milestone payments payable for a particular Licensed Product under the above shall not, in any event, exceed $6,000,000 under subclause (i) of the above table and $10,000,000 in total. For additional clarity, if MirnaRx (or its Affiliate) enters into a sublicense Agreement under which the applicable Sublicensee is granted sublicense rights to Commercialize a Licensed Product, then achievement of any of the above Milestone Events by such Sublicensee, or by MirnaRx or its Affiliate working in collaboration with such Sublicensee under the sublicense agreement, shall not create a Milestone Payment obligation, but instead MirnaRx shall have the obligation to share Sublicense Revenues received under such sublicense agreement as provided in Section 5.6 below.

(c) Notwithstanding Sections 5.3(a) and 5.3(b) and the milestone table above, (i) no Milestone Payment for achievement of [***] of the milestone table above, and (ii) no

[***] Certain information in this document has been omitted and filed separately with the Securities and Exchange Commission. Confidential treatment has been requested with respect to the omitted portions.

Milestone Payments for [***] of the milestone table above, shall be payable with respect to any Licensed Product containing or incorporating miR-34. For clarity, Sections 5.3(a) and 5.3(b) and the milestone table above shall apply in full to all Licensed Products other than any Licensed Product containing or incorporating miR-34, unless the Parties mutually agree otherwise in writing.

1.7. The Parties acknowledge and agree that as of the Amendment Effective Date, the Milestone Payment for the achievement of the Milestone Event [***] of the milestone table above has been paid in full by MirnaRx [***].

1.8. Section 5.4 shall be amended and restated in its entirety with the following:

5.4 **Royalties.** In part consideration of the license rights granted by Marina Bio under this Agreement, and subject to the provisions of Sections 5.5, MirnaRx shall pay royalties to Marina Bio on sales by MirnaRx or any of its Affiliates of Licensed Products during the Royalty Term, as follows:

(a) For sales of Licensed Product in country(ies) where such sale would infringe, absent the license granted in Section 2.1, a Valid Claim of an issued Licensed Patent, MirnaRx shall pay to Marina Bio royalties equal to [***] of the Net Sales revenue recognized by MirnaRx or any of its Affiliates from such sales, provided that solely with respect to any Licensed Product containing or incorporating miR-34, no royalty shall be payable by MirnaRx with respect to sales in any country.

(b) For sales of Licensed Product in country(ies) where either (i) there is no Valid Claim in an issued Licensed Patent that would be infringed, absent the license granted in Section 2.1, by such sale of the Licensed Product, or (b) there are sales of Generic Products during the same royalty period as such sales of Licensed Product, then MirnaRx shall pay to Marina Bio royalties equal to [***] of the Net Sales revenue recognized by MirnaRx or any of its Affiliates from such Licensed Product sales, provided that solely with respect to any Licensed Product containing or incorporating miR-34, no royalty shall be payable by MirnaRx with respect to sales in any country.

1.9. Section 12.1 shall be amended and restated in its entirety with the following:

12.1 **Entire Agreement; Amendment**. This Agreement, including the appendices, and the Side Letter, constitutes the entire agreement between the Parties (or their Affiliates) related to the subject matter hereof. All prior and contemporaneous negotiations, representations, warranties, agreements, statements, promises and understandings related to the subject matter hereof are superseded by and merged into and extinguished and completely expressed by this Agreement, including the exhibits and the Side Letter. No Party shall be bound by or charged with any written or oral agreements, representations, warranties, statements, promises or understandings not specifically set forth in this Agreement and the Side Letter. As of the Effective Date, the Confidentiality Agreement is hereby superseded by this Agreement as to Marina Bio and MirnaRx, provided that all Confidential Information (as defined in the Confidentiality Agreement) disclosed thereunder shall be treated as Confidential Information disclosed

[***] Certain information in this document has been omitted and filed separately with the Securities and Exchange Commission. Confidential treatment has been requested with respect to the omitted portions.

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under, and subject to the terms of, this Agreement. No subsequent alteration, amendment, change or addition to this Agreement or the Side Letter shall be binding upon the Parties unless reduced to writing and signed by an authorized officer of each Party.

1.10. Counterparts; Facsimile Execution. This Amendment may be executed in two (2) or more counterparts, each of which shall be deemed an original, but all of which together shall constitute one and the same instrument. This Amendment may be executed by facsimile signatures and such signatures shall be deemed to bind each Party as if they were original signatures.

[*Signature Page Follows*]

IN WITNESS WHEREOF, the Parties have caused this Agreement to be executed by their respective officers thereunto duly authorized as of the Amendment Effective Date.

MIRNA THERAPEUTICS, INC.		**MARINA BIOTECH, INC.**	
Signature:	/s/ Paul Lammers	Signature:	/s/ J. Michael French
Name:	Dr. Paul Lammers	Name:	J. Michael French
Title:	President and CEO	Title:	President and CEO

Exhibit 10.3(E)

[***] Certain information in this document has been omitted and filed separately with the Securities and Exchange Commission. Confidential treatment has been requested with respect to the omitted portions.

CONFIDENTIAL

January 9, 2014

Marina Biotech, Inc.
3830 Monte Villa Parkway
Bothell, Washington, 98021
Attn: Michael French, Chief executive Officer

Re: **Agreement re Option Compound and miR-34 Sequences**

Dear Michael:

As you know, Mirna Therapeutics, Inc. ("**MirnaRx**") and Marina Biotech, Inc. ("**Marina Bio**") have entered into an amendment, effective as December 27, 2013, to that certain license agreement dated December 22, 2011 (the "**License Agreement**", and such amendment the "**Amendment**"). This letter agreement is that certain Amendment Side Letter referred to in the Amendment, and it sets forth the RNA oligonucleotide sequences of the Option Compounds that the Parties are agreeing to designate as Selected MirnaRx Compounds pursuant to the terms of the License Agreement. Capitalized terms not defined in this Amendment Side Letter shall have the meaning given to those terms in the License Agreement.

The Parties hereby agree that the list of RNA oligonucleotide sequences attached as the Appendix of this Amendment Side Letter comprises sequences of miR-34, [***] as well as the sequences of two Option Compounds [***] under the terms of the License Agreement. The Parties further agree that such sequences are the highly confidential information of MirnaRx, and Marina Bio shall comply with the confidentiality obligations set forth in the License Agreement with respect thereto, and shall not disclose such sequences to any third party or use them for any purpose outside of the License Agreement.

AGREED TO BY:

Mirna Therapeutics, Inc.

Signature: /s/ Paul Lammers
Paul Lammers, M,D., M.Sc.
Chief Executive Officer

Marina Biotech, Inc.

Signature: /s/ Michael French
Michael French
Chief Executive Officer

CONFIDENTIAL

APPENDIX

miR-34 Sequence:
[***]

[***]

[***] Certain information in this document has been omitted and filed separately with the Securities and Exchange Commission. Confidential treatment has been requested with respect to the omitted portions.

[***] Certain information in this document has been omitted and filed separately with the Securities and Exchange Commission. Confidential treatment has been requested with respect to the omitted portions.

AMENDED AND RESTATED AGREEMENT

THIS AMENDED AND RESTATED AGREEMENT (the "Agreement") by and between YALE UNIVERSITY, a corporation organized and existing under and by virtue of a charter granted by the general assembly of the Colony and State of Connecticut and located in New Haven, Connecticut ("YALE"), and Mirna Therapeutics, Inc., a corporation organized and existing under the laws of the State of Delaware and with principal offices located in Austin, Texas ("LICENSEE") is effective as of the date of final signature below ("EFFECTIVE DATE").

Article 1. BACKGROUND

1.1 As of August 28, 2006 YALE and Asuragen, Inc., a corporation organized and existing under the law of the State of Delaware with principal offices located in Austin, Texas ("ASURAGEN") entered into an exclusive license agreement ("ORIGINAL AGREEMENT") related to certain patents which arose in the course of research conducted under YALE auspices by [***] in the Department of Molecular, Cellular and Developmental Biology at YALE (the "INVENTOR"), including an invention entitled [***] (the "INVENTION").

1.2 On November 9, 2009, ASURAGEN transferred all of its assets related to research and development of microRNA therapeutics to LICENSEE, including the ORIGINAL AGREEMENT (with notice of such transfer having been sent to YALE on December 19, 2009).

1.3 YALE and LICENSEE have decided to expand the scope of the ORIGINAL AGREEMENT to include (a) certain additional intellectual property which [***] (the "INVENTORS") related to [***] including, without limitation, the INVENTION (the " INVENTIONS") and (b) certain intellectual property [***] (collectively, the "POOLED PATENTS" as defined below).

1.4 To the extent that the INVENTORS of any claims of the INVENTIONS were employees or agents of YALE at the time any of the INVENTIONS were invented (including, without limitation, the INVENTION), such INVENTORS have assigned to YALE all of their right, title and interest in and to the INVENTIONS and any resulting patents.

1.5 YALE wishes to have the INVENTIONS and any resulting patents commercialized to benefit the public good.

1.6 LICENSEE has represented to YALE to induce YALE to enter into this Agreement that it shall act diligently to develop and commercialize the PRODUCTS for public use throughout the LICENSED TERRITORY (as defined below).

1.7 YALE is willing to grant a license to LICENSEE, subject to the terms and conditions of this Agreement.

1.8 In consideration of these statements and mutual promises, YALE and LICENSEE agree to the terms of this Agreement and amend and restate, in their entirety, the terms of the ORIGINAL AGREEMENT as of the EFFECTIVE DATE.

Article 2. DEFINITIONS

The following terms used in this Agreement shall be defined as set forth below:

2.1 "AFFILIATE" shall mean any entity or person that directly or indirectly controls, is controlled by or is under common control with LICENSEE. For purposes of this definition, "control" means possession of the power to direct the management of such entity or person, whether through ownership of more than fifty percent (50%) of voting securities, by contract or otherwise.

2.2 "CONFIDENTIAL INFORMATION" shall mean all information disclosed by one party to the other during the negotiation of or under this Agreement in any manner, whether orally, visually or in tangible form, that relates to ALL PATENTS or the Agreement itself, unless such information is subject to an exception described in Article 8.2; provided, however, that CONFIDENTIAL INFORMATION that is disclosed in tangible form shall be marked "Confidential" at the time of disclosure and CONFIDENTIAL INFORMATION that is disclosed orally or visually shall be identified as confidential at the time of disclosure and subsequently reduced to writing, marked confidential and delivered to the other party within thirty (30) days of such disclosure. CONFIDENTIAL INFORMATION shall include, without limitation, materials, know-how and data, technical or non-technical, trade secrets, inventions, methods and processes, whether or not patentable. Notwithstanding any other provisions of this Article 2.2, CONFIDENTIAL INFORMATION of LICENSEE that is subject to Article 8 of this Agreement is limited to information that LICENSEE supplies pursuant to LICENSEE's obligations under Articles 7 and 9 of this Agreement, unless otherwise mutually agreed to in writing by the parties.

2.3 "EARNED ROYALTY" is defined in Article 6.1.

2.4 "EFFECTIVE DATE" is defined in the introductory paragraph of this Agreement.

2.5 "FDA" shall mean the United States Food and Drug Administration or any comparable regulatory authority in a country or group of countries other than the United States.

2.6 "FIELD" shall mean all human therapeutic uses.

2.7 "FIRST SALE" shall mean the first sale to a THIRD PARTY of any PRODUCT in any country.

2.8 "ND" shall mean an investigational new drug application filed with the United States Food and Drug Administration prior to beginning clinical trials in humans in the United States or any comparable application filed with regulatory authorities in or for a country or group of countries other

than the United States.

2.9 "INVENTION", "INVENTIONS", "INVENTORS" and "INVENTOR" are defined in Article 1.1.

2.10 "INSOLVENT" shall mean that LICENSEE (i) has ceased to pay its debts in the ordinary course of business, (ii) has current assets that are insufficient to pay its current obligations and has been in this situation for at least 12 months, (iii) is insolvent as defined by the United States Federal Bankruptcy Law, as amended from time to time, or (iv) has commenced bankruptcy, reorganization, receivership or insolvency proceedings, or any other proceeding under any Federal, state or other law for the relief of debtors.

2.11 "LICENSE" refers to the licenses granted under Article 3.1.

2.12 "LICENSED TERRITORY" shall mean The United States of America, including its territories and possessions, and any foreign countries where either party may have filed or obtained corresponding foreign patents or applications for one or more POOLED PATENTS.

2.13 "NDA" shall mean a new drug application filed with the United States Food and Drug Administration to obtain marketing approval for a PRODUCT in the United States or any comparable application filed with a regulatory authority in or for a country or group of countries other than the United States.

2.14 "NET SALES" shall mean:

(a) gross revenues actually received from the sale, lease or other transfer or disposition of ROYALTY PRODUCTS, or from services performed using ROYALTY PRODUCTS, by LICENSEE, SUBLICENSEES or AFFILIATES to THIRD PARTIES, except as set forth in Article 2.16(b), less the following deductions, provided they actually pertain to the disposition of the ROYALTY PRODUCTS [***]:

(i) all discounts, credits and allowances on account of returns;

(ii) transportation and insurance; and

(iii) duties, taxes and other governmental charges levied on the import, export, sale, transportation or delivery of ROYALTY PRODUCTS, but not including revenue taxes.

(b) No deductions shall be made for any other costs or expenses, including but not limited to [***].

(c) "NET SALES" shall not include the gross revenues for ROYALTY PRODUCTS sold to, or services performed using ROYALTY PRODUCTS for, any AFFILIATE unless such AFFILIATE is an end-user of any ROYALTY PRODUCT, in which case such consideration shall be included in NET SALES at the [***] during the same quarter.

2.15 "POOLED PATENTS" shall mean all United States and foreign patent application(s) and patents(s) listed in Exhibit A and owned or controlled in whole or in part by YALE and/or LICENSEE during the TERM of this Agreement, together with any continuations, divisionals, and continuations-in-part, to the extent the claims of any such patent or patent application are directed to subject matter specifically described in the patent applications listed on Exhibit A; any reissues, re-examinations, or extensions thereof, or substitutes therefor; and

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the relevant international equivalents of any of the foregoing. Exhibit A shall be updated by the parties as necessary but at least on an annual basis.

(1) It is understood that the parties will co-operate as promptly as possible after the EFFECTIVE DATE and on an on-going basis during the TERM of the Agreement, in good faith, to expeditiously determine and update as necessary, legally proper inventorship for the POOLED PATENTS. Such determination shall involve the selection and engagement of an independent intellectual property attorney with no prior relationship to either party within [***] days following the EFFECTIVE DATE by mutual written agreement of the parties. Such attorney shall provide to both parties a full written disclosure of any prior relationship or potential conflict with either party. The parties shall endeavor to have the determination completed for all inventorship determinations [***] as soon as possible following the selection of the intellectual property attorney in accordance with the process set out in 2.12(2).

(2) The attorney selected and engaged pursuant to the above this Paragraph shall be required to conduct [***] of the POOLED PATENTS to [***]. As part of his/her engagement, such attorney shall [***] upon completion of his/her analysis [***], and the parties shall request that such analysis to be completed within [***] days of the attorney's engagement to the extent that such is practicable. The parties agree that the determination by such attorney [***] and is [***].

(3) The parties agree to [***] associated with the review by such attorney.

(4) If, as a result of the procedure outlined in Article 2.12(1), it is determined that, with respect to either party to this Agreement, there is no employee or agent of that party that is a joint or sole inventor of [***] POOLED PATENT, then: (i) that party acknowledges and agrees that it shall [***]. In such event, the [***], and (ii) in such event, LICENSEE acknowledges that, notwithstanding the result of the procedure referenced in Article 2.12(1), the results of such determination [***] in Articles 4.3, 5.1, 5.2, 6.1, 6.3, 7.3 and 11.2(a).

YALE and LICENSEE agree and understand that [***] as a result of the procedure referenced in Article 2.12(1) and 2.12(2) above or [***]. The parties agree that the rights licensed by YALE herein shall include whatever rights YALE has or will have to any patents or patents applications that [***] the POOLED PATENTS.

2.16 "PRODUCT" shall mean any product (including any apparatus or kit) or component part thereof, the manufacture, use or sale of which would infringe a VALID CLAIM of a POOLED PATENT in a country in the LICENSED TERRITORY.

2.17 "REASONABLE COMMERCIAL EFFORTS" shall mean documented efforts that are [consistent with those utilized by companies of similar size and type, in similar commercial circumstances, that are developing, or have successfully developed, products and/or services similar to PRODUCTS. In determining REASONABLE COMMERCIAL EFFORTS with respect to a particular PRODUCT, LICENSEE may not reduce such efforts due to the competitive, regulatory or other impact of any other product or method that it owns, licenses or is developing or commercializing.

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2.18 "ROYALTY PRODUCT" shall mean any PRODUCT [***], the manufacture, use or sale of which would infringe a VALID CLAIM of a POOLED PATENT in a country in the LICENSED TERRITORY and is either a LET7 PRODUCT, a MIR34 PRODUCT or a MIR16 PRODUCT.

(a) "LET7 PRODUCT" shall mean any PRODUCT in the FIELD which contains [***] of the let-7 microRNA (miRNA) family as the [***]. For the sake of clarity it is understood that LET7 PRODUCTS shall include, without limitation, any PRODUCT which comprises [***].

(b) "MIR34 PRODUCT" shall mean any PRODUCT in the FIELD which contains [***] of the miR-34 microRNA (miRNA) family as the [***] which may or may not be [***], provided that any additional miRNA may not be [***]. For the sake of clarity it is understood that MIR34 PRODUCTS shall include, without limitation, any PRODUCT which comprises [***].

(c) "MIR16 PRODUCT shall mean any PRODUCT in the FIELD which contains [***] of the miR-16 microRNA (miRNA) family as the [***] which may or may not be [***], provided that any [***] may not be a [***].

2.19 "SUBLICENSE REVENUES" shall mean the [***] actually received by LICENSEE or an AFFILIATE from any SUBLICENSEE in connection with the grant of or the option to a grant of a sublicense or other right, license, privilege or immunity under the POOLED PATENTS to make, have made, use, sell, have sold, distribute, import or export ROYALTY PRODUCTS, but excluding consideration included within NET SALES. SUBLICENSE REVENUE shall include without limitation [***], provided that SUBLICENSE REVENUE excludes specifically any amounts received by LICENSEE from a SUBLICENSEE (1) as [***], (2) [***], (3) as [***] LICENSEE.

2.20 "SUBLICENSEE" shall mean any THIRD PARTY sublicensed by LICENSEE to make, have made, use, sell, have sold, import or export any of the PRODUCTS.

2.21 "TERM" is defined in Article 3.4.

2.22 "THIRD PARTY(IES)" shall mean any person other than YALE and LICENSEE or their respective AFFILIATES.

2.23 "THIRD PARTY LICENSE(S)" is defined in Article 4.3(d).

2.24 "VALID CLAIM" shall mean (a) subject to subsection (b), an issued and unexpired claim of a POOLED PATENT existing as of the EFFECTIVE DATE so long as such claim shall not have been irrevocably abandoned or declared to be invalid in an unappealable decision of a court or other authority or competent jurisdiction, or (b), if within [***] after the EFFECTIVE DATE, a pending claim of a POOLED PATENT existing as of the EFFECTIVE DATE, provided that such pending claim [***] at the time of the relevant event; and further provided that, if such claim shall ultimately issue, such claim shall be considered a VALID CLAIM but [***] date of issuance. For the sake of clarity, it is understood that in order to

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qualify or potentially qualify as a VALID CLAIM, a claim of a POOLED PATENT must be [***].

Article 3. LICENSE GRANT AND TERM

3.1 Subject to all the terms and conditions of this Agreement, YALE hereby grants to LICENSEE an exclusive license, with the right to sublicense, under the POOLED PATENTS to the extent of YALE's rights therein, to make, have made, use, sell, have sold, import or export PRODUCTS in the FIELD in the LICENSED TERRITORY.

3.2 To the extent that any invention included within the POOLED PATENTS which is owned in whole or in part by YALE has been funded in whole or in part by the United States government ("Yale US Gov't Funded Pooled Patents"), the United States government retains certain rights in such invention as set forth in 35 U.S.C. §200-212 and all regulations promulgated thereunder, as amended, and any successor statutes and regulations (the "Federal Patent Policy"). As a condition of the license granted hereby, LICENSEE acknowledges and shall comply with all aspects of the Federal Patent Policy applicable to the Yale US Gov't Funded Pooled Patents, including the obligation that PRODUCTS used or sold in the United States which are covered by one of more Yale US Gov't Funded Pooled Patents at the time of such use or sale be manufactured substantially in the United States. Nothing contained in this Agreement obligates or shall obligate YALE to take any action that would conflict in any respect with its past, current or future obligations to the United States Government under the Federal Patent Policy with respect to Yale US Gov't Funded Pooled Patents.

3.3 The LICENSE is expressly made subject to YALE's reservation of the right to make, use and practice the POOLED PATENTS (but only to the extent of YALE's rights therein) and PRODUCTS (but only to the extent of YALE's rights therein) for research, clinical, teaching or other non-commercial purposes, and to grant to other academic research institutions non-exclusive licenses to the POOLED PATENTS (but only to the extent of YALE's rights therein) and PRODUCTS (but only to the extent of YALE's rights therein) for research, clinical, or teaching purposes and not for purposes of

commercial development, use, manufacture or distribution. LICENSEE shall use REASONABLE COMMERCIAL EFFORTS to [***]. Nothing in this Agreement shall be construed to grant by implication, estoppel or otherwise any licenses under patents of YALE other than the POOLED PATENTS.

3.4 Unless terminated earlier as provided in Article 13, the term of this Agreement (the "TERM") shall commence on the EFFECTIVE DATE and shall automatically expire, on a country-by-country basis in the LICENSED TERRITORY, on the date on which the last VALID CLAIM of the POOLED PATENTS, whether owned in whole or in part by YALE or LICENSEE, in such country expires, lapses or is declared to be invalid by a non-appealable decision of a court or other authority of competent jurisdiction through no fault or cause of LICENSEE, and LICENSEE'S payment obligations shall also terminate on such date in such country. This Agreement shall terminate in its entirety on the date on which the last VALID CLAIM of the POOLED PATENTS, whether owned in whole or in part by YALE or LICENSEE, in all countries of the LICENSED TERRITORY expires, lapses or is declared to be invalid by a non-appealable decision of a court or other authority of competent jurisdiction through no fault or cause of LICENSEE. Notwithstanding the foregoing, all of LICENSEE's

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payment obligations shall survive any early termination of this Agreement pursuant to Article 13 as set forth in Article 13.4(c), and such payment obligations shall expire until the earlier of the events to occur in Article 6.1.(d) (i) for each ROYALTY PRODUCT except that LICENSEE shall have no such payment obligations in the event of LICENSEE'S termination due to breach by YALE under Article 13.3(b) in which case the payment obligations shall terminate on the effective date of LICENSEE'S termination.

3.5 Except as expressly provided in this Agreement, under no circumstances will either party, as a result of this Agreement, obtain any interest in or any other right to any technology, know-how, patents, patent applications, materials or other intellectual or proprietary property of the other party.

Article 4. SUBLICENSES

4.1 In the event LICENSEE sublicenses the rights granted to it under this Agreement the provisions of Articles 4.2, 4.3 and 4.4 shall apply.

4.2 Any sublicense granted by LICENSEE shall include substantially the same definitions and provisions regarding Due Diligence, Confidentiality and Publicity, Reporting Requirements, Indemnification, Insurance and Warranties, Patent Notices and Use of YALE's Name, as are agreed to in this Agreement, and such other provisions as are needed to enable LICENSEE to comply with this Agreement. LICENSEE will provide YALE with a copy of each Sublicense Agreement promptly after execution. LICENSEE shall remain responsible for the enforcement of all sublicense agreements including but not limited to payment of any royalties other payments provided for hereunder, regardless of whether the terms of any sublicense provide for such amounts to be paid by the SUBLICENSEE directly to YALE.

4.3 LICENSEE shall pay [***] SUBLICENSEES to LICENSEE under a sublicense agreement. In addition, based on the particular ROYALTY PRODUCT, LICENSEE shall pay to YALE a certain percentage of any SUBLICENSE REVENUE from sublicenses [***] executed between LICENSEE and a THIRD PARTY [***] and a certain percentage of any SUBLICENSE REVENUE from sublicenses [***] executed between LICENSEE and a THIRD PARTY [***] as follows:

(a) [***] PRODUCTS, the manufacture, use or sale of which would infringe a

VALID CLAIM of one or more POOLED PATENTS [***] at the time of the execution of the sublicense between LICENSEE and a THIRD PARTY:

(i) [***]

(ii) [***]

(b) [***] PRODUCTS or [***] PRODUCTS, the manufacture, use or sale of which would infringe a VALID CLAIM of one or more POOLED PATENTS [***] at the time of the execution of the sublicense between LICENSEE and a THIRD PARTY:

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(i) [***]

(ii) [***]

(c) [***] PRODUCTS, [***], the manufacture, use or sale of which would infringe a VALID CLAIM of one or more POOLED PATENTS, [***] at the time of the execution of the sublicense between LICENSEE and a THIRD PARTY:

(i) [***]

(d) In the event that during the term of the Agreement, LICENSEE or its AFFILIATES are required to pay SUBLICENSE REVENUE for [***] PRODUCTS, and at least one of which is [***], or which are [***], the parties shall [***] PRODUCTS under this Article 4.3.

(e) for the sake of clarity, it is understood that, in the event the ROYALTY PRODUCT that is the subject of the SUBLICENSE REVENUE paid to LICENSEE is [***] at the time the event occurs which triggers the obligation for the relevant THIRD PARTY to pay SUBLICENSE REVENUE to LICENSEE, then [***].

4.4 LICENSEE agrees that it has sole responsibility to promptly:

(a) provide YALE with a copy of any amendments to sublicenses granted by LICENSEE under this Agreement and to notify YALE of termination of any sublicense; and

(b) provide copies of all reports prepared by SUBLICENSEES for LICENSEE under this Agreement.

Article 5. LICENSE ISSUE ROYALTY; LICENSE MAINTENANCE ROYALTY; MILESTONE FEES

5.1 During the TERM of this Agreement for as long as at least one ROYALTY PRODUCT is being researched, developed or sold by LICENSEE, its AFFILIATES and/or its SUBLICENSEES, the manufacture, use or sale of which is covered by one or more VALID CLAIMS of one or more POOLED PATENTS [***], LICENSEE agrees to pay to YALE an annual license maintenance royalty ("LMR") commencing on the first anniversary of the EFFECTIVE DATE and every anniversary thereafter until [***]. The LMR shall be [***].

5.2 (a) LICENSEE shall pay the following milestone fees to YALE for each [***] PRODUCT developed by LICENSEE, its SUBLICENSEES, or AFFILIATES, the manufacture, use or sale of which would infringe a VALID CLAIM of one or more POOLED PATENTS that is [***]:

(i) a non-refundable milestone fee of [***].

(ii) a non-refundable milestone fee of [***].

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(b) LICENSEE shall pay the following milestone fees to YALE for each [***] PRODUCT developed by LICENSEE, its SUBLICENSEES, or AFFILIATES, the manufacture, use or sale of which would infringe a VALID CLAIM of one or more POOLED PATENTS at the time the milestone occurs, [***]:

(i) a non-refundable milestone fee of [***].

(ii) a non-refundable milestone fee of [***].

(c) Each such milestone fee shall be due [***] for a [***] PRODUCT [***]. No milestone fee shall be owed to YALE for any PRODUCT under this Section 5.2 [***].

(d) for the sake of clarity, it is understood that, in the event the [***] PRODUCT that is the subject of the relevant milestone event is not covered at the time the milestone event occurs by one or more VALID CLAIMS, then LICENSEE shall not owe any payment to YALE for the achievement of such milestone.

5.3 [***].

Article 6. EARNED ROYALTIES: MINIMUM ROYALTY PAYMENTS

6.1 During the TERM of this Agreement, as partial consideration for the LICENSE, LICENSEE shall pay to YALE an earned royalty on NET SALES of ROYALTY PRODUCTS by LICENSEE or its SUBLICENSEES or AFFILIATES in any country of the LICENSED TERRITORY as follows ("EARNED ROYALTIES"):

(a) LICENSEE shall pay to YALE an EARNED ROYALTY of [***] of the NET SALES of each [***] PRODUCT in all countries of the LICENSED TERRITORY where there is at least one VALID CLAIM of one or more POOLED PATENTS [***] PRODUCT sold in such country at the time of the sale.

(b) LICENSEE shall pay to YALE an EARNED ROYALTY of [***] of the NET SALES of each [***] PRODUCT in all countries of the LICENSED TERRITORY where there is at least one VALID CLAIM of one or more POOLED PATENTS [***] PRODUCT sold in such country at the time of the sale, [***].

(c) LICENSEE shall pay to YALE an EARNED ROYALTY of [***] of the NET SALES of each [***] PRODUCT in all countries of the LICENSED TERRITORY where there is at least one VALID CLAIM of one or more POOLED PATENTS [***] PRODUCT sold in such country at the time of the sale.

(d) LICENSEE shall pay to YALE an EARNED ROYALTY of [***] of the NET SALES of each [***] PRODUCT in all countries of the LICENSED TERRITORY where there is at least one VALID CLAIM of one or more POOLED PATENTS [***] PRODUCT sold in such country at the time of the sale, [***].

provided that:

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(i) the obligation to pay an EARNED ROYALTY shall terminate, on a ROYALTY PRODUCT by ROYALTY PRODUCT and country by country basis in the LICENSED TERRITORY, upon the earlier of (a) the expiration or invalidation of the last VALID CLAIM of a POOLED

PATENT that covers the particular ROYALTY PRODUCT in the particular country, or (b) the [***].

(ii) Notwithstanding the above, if during the term of the Agreement, LICENSEE, its AFFILIATES and/or its SUBLICENSEES are required to pay royalties on sales of ROYALTY PRODUCTS to a THIRD PARTY licensor in order to avoid infringing such THIRD PARTY's patent(s) in the development, manufacture and/or sale of ROYALTY PRODUCTS under this Agreement ("THIRD PARTY LICENSE(S)"), [***] under the THIRD PARTY LICENSES shall be deducted from the EARNED ROYALTY for ROYALTY PRODUCTS owed to YALE [***], provided that:

a In the event that the NET SALES of a particular ROYALTY PRODUCT which is the subject of the royalty obligation under THIRD PARTY LICENSES during such period is covered by one or more VALID CLAIMS of a POOLED PATENT [***], then (i) if the particular ROYALTY PRODUCT is [***] PRODUCT, the amount of royalties payable by the LICENSEE to YALE for the NET SALES for [***] of such NET SALES, and (b) if the particular ROYALTY PRODUCT is a [***] PRODUCT, the amount of royalties payable by the LICENSEE to YALE for the NET SALES for [***] of such NET SALES,

b In the event that the NET SALES of a particular ROYALTY PRODUCT which is the subject of the royalty obligation under THIRD PARTY LICENSES during [***] is covered by one or more VALID CLAIMS of a POOLED PATENT, [***], then the amount of royalties payable by the LICENSEE to YALE for the NET SALES for such period shall [***] of such NET SALES.

6.2 LICENSEE shall pay all EARNED ROYALTIES accruing to YALE within [***] days from the end of each calendar quarter (March 31, June 30, September 30 and December 31), beginning in the first calendar quarter in which NET SALES occur.

6.3 During the TERM of this Agreement, LICENSEE agrees to pay YALE annual Minimum Royalty Payments ("MRP") with respect to [***] PRODUCTS [***], consistent with LICENSEE'S obligations under Article 6.2, above, commencing in [***] following the date of the first sale of a [***] PRODUCT that results in NET SALES ("FIRST NET SALES"). The MRP shall be in the annualized amount of [***] twelve (12) month periods following the FIRST NET SALES, and shall [***] to an annualized amount of [***] twelve (12) months periods following FIRST NET SALES and [***] every twelve (12) month period thereafter. LICENSEE shall continue to pay the MRP so long as any one of [***] PRODUCTS being manufactured, used or sold in the United States would infringe one or more VALID CLAIMS of any POOLED PATENTS in the United States [***] at the time of the sale, YALE shall fully credit all MRP made against any EARNED ROYALTIES on [***] PRODUCTS payable by LICENSEE in [***] twelve (12) month period.

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6.4 All EARNED ROYALTIES and other payments due under this Agreement shall be paid to YALE in United States Dollars. Conversion of foreign currency to U.S. dollars shall be made at the conversation rate existing in the United States in amounts based on the average rate of exchange for the reporting period as calculated on the Web site www.oanda.com. If the www.oanda.com Web site is not available, LICENSEE will use the conversion rate as reported in the Wall Street Journal on the last working day of the royalty period. If overdue, the royalties and any other payments due under this Agreement shall bear interest until payment at a [***] and YALE shall be entitled to [***]. The payment of such interest shall not foreclose YALE from exercising any other right it may have as a consequence of the failure of LICENSEE to make any payment when due.

Article 7. DUE DILIGENCE

7.1 LICENSEE shall use all REASONABLE COMMERCIAL EFFORTS after the EFFECTIVE DATE of this Agreement, at its sole expense, to diligently commercialize [***] the PRODUCTS,

7.2 Within [***] days after each anniversary of the EFFECTIVE DATE of this Agreement, LICENSEE shall provide a written report to YALE indicating LICENSEE's [***] developing and commercializing [***] PRODUCTS.

7.3 Subject to Article 7.4, and only for so long as [***] POOLED PATENTS which has a VALID CLAIM which would be infringed by a ROYALTY PRODUCT (i.e., a LET7 PRODUCT, a MIR34 PRODUCT or a MIR16 PRODUCT), YALE shall have the right to terminate the AGREEMENT with respect to the relevant ROYALTY PRODUCT category (but not with respect to any other ROYALTY PRODUCT category or any other PRODUCTS) as follows:

(a) If LICENSEE has [***] for [***] within [***] after the EFFECTIVE DATE, LICENSEE may extend such time period by [***] by paying YALE [***] within [***] days after the [***] anniversary of the EFFECTIVE DATE, and may further extend such time period by [***] by paying YALE [***] within [***] days after the [***] anniversary of the EFFECTIVE DATE, and may further extend such time period by [***] by paying YALE [***] within [***] days after the [***] anniversary of the EFFECTIVE DATE. In the event that LICENSEE has [***] within the relevant timeframe (or extension of such, as provided above), YALE may terminate this AGREEMENT with respect to [***], provided, however, that YALE has (1) notified LICENSEE in writing of YALE'S intention to terminate the AGREEMENT with respect to [***], (2) given LICENSEE [***] days to respond to YALE's written notice, and (3) if requested by LICENSEE, given LICENSEE [***] within such timeframe. If the [***] is beyond LICENSEE'S reasonable control, YALE shall [***] for an additional time extension to enable LICENSEE to [***], provided that [***].

(b) If LICENSEE does not demonstrate [***] for [***] PRODUCTS, YALE may terminate this AGREEMENT with respect to [***], provided, however, that YALE has (1) notified LICENSEE in writing of YALE's intention to terminate the AGREEMENT with respect to [***], (2) given LICENSEE [***] days to respond to YALE's written notice, and (3) if requested by LICENSEE, given LICENSEE [***] has not been demonstrated. If the

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demonstration of such [***] is beyond LICENSEE's reasonable control, YALE shall [***] for an additional time extension to enable LICENSEE to [***], provided that [***].

(c) If after [***], LICENSEE does not demonstrate [***] for [***] PRODUCTS, YALE may terminate this AGREEMENT with respect to [***] only, but not with respect to [***], provided, however, that YALE has (1) notified LICENSEE in writing of YALE's intention to terminate the AGREEMENT with respect to [***], (2) given LICENSEE [***] days to respond to YALE's written notice, and (3) if requested by LICENSEE, given LICENSEE [***] has not been demonstrated. If the demonstration of [***] is beyond LICENSEE'S reasonable control, YALE shall [***] for an additional time extension to enable LICENSEE to [***], provided that YALE [***].

7.4 LICENSEE and YALE may at any time mutually agree in writing to amend the date [***] under Article 7.3, above.

7.5 LICENSEE shall immediately notify YALE if at any time LICENSEE (a) abandons or suspends, or intends to abandon or suspend, its research, development or marketing of [***] PRODUCTS, or (b) fails to comply with its due diligence obligations under this Article for a period exceeding [***]. In such event, this Agreement shall terminate with respect to that category of ROYALTY PRODUCTS only, and not with respect to any other category of ROYALTY PRODUCTS or any other PRODUCTS.

Article 8. CONFIDENTIALITY AND PUBLICITY

8.1 Subject to the parties' rights and obligations pursuant to this Agreement, YALE and LICENSEE agree that during the TERM of this Agreement and for [***] years thereafter, each of them:

(a) will keep confidential and will cause their AFFILIATES and, in the case of LICENSEE, its SUBLICENSEES, to keep confidential, CONFIDENTIAL INFORMATION disclosed to it by the other party, by taking whatever action the party receiving the CONFIDENTIAL INFORMATION would take to preserve the confidentiality of its own CONFIDENTIAL INFORMATION, which in no event shall be less than reasonable care; and

(b) will only disclose that part of the other's CONFIDENTIAL INFORMATION to its officers, employees or agents that is necessary for those officers, employees or agents who need to know to carry out its responsibilities under this Agreement; and

(c) will not use the other party's CONFIDENTIAL INFORMATION other than as expressly set forth in this Agreement or disclose the other's CONFIDENTIAL INFORMATION to any THIRD PARTIES under any circumstance without advance written permission from the other party; and

(d) will, within [***] days of termination of this Agreement, return all the CONFIDENTIAL INFORMATION disclosed to it by the other party pursuant to this Agreement except for one copy which may be retained by the recipient for monitoring compliance with this Article 8.

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8.2 The obligations of confidentiality described above shall not pertain to that part of the CONFIDENTIAL INFORMATION that:

(a) was known to the recipient prior to the disclosure by the disclosing party; or

(b) is at the time of disclosure or has become thereafter publicly known through no fault or omission attributable to the recipient; or

(c) is rightfully given to the recipient from sources independent of the disclosing party; or

(d) is independently developed by the receiving party without use of or reference to the CONFIDENTIAL INFORMATION of the other party; or

(e) is required to be disclosed by law in the opinion of recipient's attorney, but only after the disclosing party is given prompt written notice and an opportunity to seek a protective order.

8.3 Except as required by law, neither party may disclose the financial terms of this Agreement without the prior written consent of the other party, however LICENSEE may disclose such financial terms to potential investors in LICENSEE who have agreed to respect the confidentiality of such information.

8.4 Except as otherwise provided in Article 8.3, no public announcement or other disclosure to THIRD PARTIES concerning the existence or terms of this AGREEMENT shall be made by either Party, except to the extent legally required, without first obtaining the written approval and agreement of the other Party on the nature and text of such public announcement or disclosure.

Article 9. REPORTS, RECORDS AND INSPECTIONS

9.1 LICENSEE shall, within [***] days after the calendar year in which NET SALES first occur, and within [***] days after each calendar quarter (March 31, June 30, September 30 and December 31) thereafter, provide YALE with a written report detailing the NET SALES and uses, if any, made by LICENSEE, its SUBLICENSEES and AFFILIATES of ROYALTY PRODUCTS during the preceding calendar quarter and calculating the payments due pursuant to Article 6. NET SALES of ROYALTY PRODUCTS shall be deemed to have occurred on the date of invoice for such above-mentioned PRODUCTS. Each such report shall be signed by an officer of LICENSEE (or the officer's designee), and must include:

(a) a calculation of NET SALES for the applicable reporting period in each country, including the gross invoice prices charged for the ROYALTY PRODUCTS and any permitted deductions made pursuant to Article 2.16;

(b) a calculation of total royalties or other payment due, including any exchange rates used for conversion; and

[***] Certain information in this document has been omitted and filed separately with the Securities and Exchange Commission. Confidential treatment has been requested with respect to the omitted portions.

(c) names and addresses of all SUBLICENSEES and the type and amount of any SUBLICENSE REVENUE received from each SUBLICENSEE.

9.2 LICENSEE and its SUBLICENSEES shall keep and maintain complete and accurate records and books containing an accurate accounting of all data in sufficient detail to enable verification of EARNED ROYALTIES and other payments under this Agreement. LICENSEE shall preserve such books and records for [***] years after the calendar year to which they pertain. Such books and records shall be open to inspection by an independent certified public accountant selected by YALE and agreed upon by LICENSEE, at YALE'S expense, during normal business hours upon [***] days prior written notice, solely for the purpose of verifying the accuracy of the reports and computations rendered by LICENSEE. In the event LICENSEE underpaid the amounts due to YALE with respect to the audited period by more than [***], LICENSEE shall pay the reasonable cost of such examination, together with the deficiency not previously paid, within [***] days of receiving notice thereof from YALE. Such audits will be scheduled at the mutual convenience of the parties and no more often than annually. YALE agrees that its aforementioned independent certified public accountant shall be under an obligation of confidentiality at least as restrictive as those confidentiality obligations set forth in this Agreement.

Article 10. PATENT PROTECTION

10.1 LICENSEE shall be responsible for all costs of filing, prosecution and maintenance of all United States patents and patent applications contained in POOLED PATENTS incurred after the EFFECTIVE DATE. LICENSEE shall be responsible for all costs of filing, prosecution and maintenance of all foreign patent applications and patents contained in the POOLED PATENTS provided that, to the extent such POOLED PATENTS are [***], LICENSEE shall bear such costs [***], and wherein such costs were incurred after the EFFECTIVE DATE.

10.2 YALE's ownership interest in the POOLED PATENTS shall remain with YALE and LICENSEE's ownership interest in the POOLED PATENTS shall remain with LICENSEE.

10.3 If LICENSEE does not agree to pay the expenses of filing, prosecuting or maintaining a POOLED PATENT owned in whole or in part by YALE in any country outside the United States, or fails to pay the expenses of filing, prosecuting or maintaining a POOLED PATENT owned in whole or in part by YALE in the United States, then [***]. In the event that LICENSEE decides to abandon or discontinue paying the expenses of filing, prosecuting or maintaining any of the POOLED PATENTS owned in whole or in part by LICENSEE, then LICENSEE shall promptly inform YALE of such decision, and in no event less than [***] days before any deadline necessary to maintain patent rights with that particular POOLED PATENT. YALE may then elect, at its sole discretion and its sole expense, to continue to prosecute or maintain such POOLED PATENT. In such event, LICENSEE shall provide reasonable cooperation to YALE at YALE's sole expense. Nothing in this Agreement shall be construed to grant (by implication, estoppel or otherwise) any licenses to YALE under any patents owned or controlled by LICENSEE including, without limitation, any POOLED PATENTS owned in whole or part by LICENSEE, whether or not abandoned by LICENSEE and/or subsequently prosecuted or maintained by YALE under this Article.

[***] Certain information in this document has been omitted and filed separately with the Securities and Exchange Commission. Confidential treatment has been requested with respect to the omitted portions.

10.4 Patent Prosecution/Maintenance

(a) All patent applications falling under the definition of POOLED PATENTS which are owned solely by YALE herein shall be prepared, prosecuted, filed and maintained by patent counsel chosen by YALE and reasonably acceptable to LICENSEE. Said patent counsel shall be ultimately responsible to YALE but YALE shall consult with LICENSEE on all matters associated with the preparation, prosecution, filing and maintenance of such patent applications though the ultimate decision making authority on such matters shall reside with YALE.

(b) All patent applications falling under the definition of POOLED PATENTS which are owned solely by LICENSEE or jointly by LICENSEE and YALE shall be prepared, prosecuted, filed and maintained by patent counsel chosen by LICENSEE and reasonably acceptable to YALE. Said patent counsel shall be ultimately responsible to LICENSEE, but LICENSEE shall consult with YALE on all matters associated with the preparation, prosecution, filing and maintenance of such patent applications though the ultimate decision making authority on such matters shall reside with LICENSEE. Notwithstanding the foregoing, in the case of POOLED PATENTS that are [***], LICENSEE shall not take any actions that [***] such POOLED PATENT, to the extent that such action would result in (i) [***] and/or (ii) the [***], without YALE's prior written approval, such approval not to be unreasonably withheld or delayed. In the event the parties do not agree on the appropriate action to be taken within [***] after submission of the proposed action to YALE by LICENSEE, the parties will submit the matter to an independent intellectual property attorney [***] within [***] days following the date the parties determine that they cannot agree on the action to be taken, provided that the parties shall use the same intellectual property attorney they used for the inventorship determination under Article 2.15 if such attorney is available and if he/she does not have, at that time, [***]. The attorney selected and engaged pursuant to the above shall be required to complete his/her analysis of the action to be taken within [***] of the attorney's engagement to the extent that such is practicable. The parties agree that the determination by such attorney [***] and is purely an effort to [***] and the parties further agree that [***]. The parties agree to [***] associated with the review by such attorney.

(c) YALE and LICENSEE shall instruct patent counsel respectively responsible to them to keep both YALE and LICENSEE fully informed of the progress of all patent applications and patents, and to give both YALE and LICENSEE reasonable opportunity to consult and comment on the type and scope of useful claims, the nature of supporting disclosures and the decisions as to filing and maintenance of resulting patent applications and issued patents.

(d) Neither party shall have any liability to the other party for damages, whether direct, indirect or incidental, consequential or otherwise, allegedly arising from such Party's good faith decisions, actions and omissions in connection with the preparation, prosecution, filing or maintenance of any patent application.

10.5 LICENSEE shall mark, and shall require SUBLICENSEES to mark, all ROYALTY PRODUCTS in the LICENSED TERRITORY with the numbers of POOLED PATENTS that cover the ROYALTY PRODUCTS (but this obligation shall apply only to the extent a POOLED PATENT is owned in whole or in part by YALE). Without limiting the

foregoing, all ROYALTY PRODUCTS shall be marked in such a manner as to conform with the patent marking notices required by the law of any country where such ROYALTY PRODUCTS are made, sold, used or shipped, including, but not limited to, the applicable patent laws of that country.

Article 11. INFRINGEMENT AND LITIGATION

11.1 Each party shall promptly notify the other in writing in the event that it obtains knowledge of infringing activity by THIRD PARTIES, or is sued or threatened with an infringement suit, in any country in the LICENSED TERRITORY as a result of activities that concern the POOLED PATENTS and shall supply the other party with documentation of the infringing activities that it possesses.

11.2 During the TERM of this Agreement:

(a) LICENSEE shall have the first right and obligation to enforce the POOLED PATENTS against infringement or interference in the FIELD and in the LICENSED TERRITORY by THIRD PARTIES. This right and obligation includes bringing any legal action for infringement and defending any counter claim of invalidity or action of a THIRD PARTY for declaratory judgment for non-infringement or non-interference. If, in the reasonable opinion of LICENSEE'S and YALE's respective counsel, or if required by a court, YALE is required to be a named party to any such suit for standing purposes, LICENSEE may identify YALE as a party in the initial complaint or later join YALE as a party; provided, however, that (i) YALE shall not be the first named party in any such action, (ii) the pleadings and any public statements about the action shall state that the action is being pursued by LICENSEE and that LICENSEE has joined YALE as a party; and (iii) LICENSEE shall keep YALE reasonably apprised of all developments in any such action. LICENSEE may settle such suits solely in its own name and solely at its own expense and through counsel of its own selection; provided, however, that no settlement that requires [***] shall be entered without YALE's prior written consent. Settlements that do not [***] may be made at the sole discretion of LICENSEE. LICENSEE shall bear the expense of such legal actions. Except for providing reasonable assistance, at the request and expense of LICENSEE, YALE shall have no obligation regarding the legal actions described in Article 11.2 unless required to participate by law. However, YALE shall have the right to participate in any such action through its own counsel and at its own expense. Any recovery related to POOLED PATENTS owned in whole or in part by YALE shall [***]. YALE shall receive [***] of any excess recovery over those expenses with respect [***]. With regard to POOLED PATENTS [***], YALE shall have [***] related thereto.

(b) In the event LICENSEE fails to initiate and pursue or participate in the actions described in Article 11.2(a) with respect to a POOLED PATENT owned in whole or in part by YALE within [***] days of (i) notification of infringement from YALE, or (ii) the date LICENSEE otherwise first becomes aware of an infringement, whichever is earlier, YALE shall have the right to initiate such legal action at its own expense and YALE may use the name of LICENSEE as party plaintiff to uphold the particular POOLED PATENT. In such case, LICENSEE shall provide reasonable assistance to YALE if requested to do so. With regard to POOLED PATENTS owned solely by YALE, YALE may settle such actions solely through its own counsel, provided that any such settlement does not involve cash or other valuable

consideration to be paid by LICENSEE. Any recovery shall be [***], and secondly to [***] incurred as a result of [***]. With regard to POOLED PATENTS [***], YALE may not settle such actions without the prior written consent of LICENSEE, and any recovery shall be [***].

11.3 In the event LICENSEE is permanently enjoined from exercising its LICENSE under this Agreement pursuant to an infringement action brought by a THIRD PARTY, or if both LICENSEE and YALE elect not to undertake the defense or settlement of a suit alleging infringement for a period of [***] from notice of such suit, then either party shall have the right to terminate this Agreement in the country where the suit was filed with respect to the licensed patent following [***] written notice to the other party in accordance with the terms of Article 15.

Article 12. USE OF YALE'S NAME

12.1 LICENSEE shall not use the name "Yale" or "Yale University," nor any variation or adaptation thereof, nor any trademark, trade name or other designation owned by YALE, nor the names of any of its trustees, officers, faculty, students, employees or agents, for any purpose without the prior written consent of YALE in each instance, except that LICENSEE may state that it has licensed from YALE one or more of the patents and/or applications comprising the POOLED PATENTS.

Article 13. TERMINATION AND EXPIRATION

13.1 YALE shall have the right to terminate this Agreement after written notice to LICENSEE in the event LICENSEE:

(a) fails to make any material payment due and payable pursuant to this Agreement unless LICENSEE shall make all such payments (and all interest due on such payments under Article 6.4) within the thirty (30) day period after receipt of written notice from YALE; or

(b) commits a material breach of any other provision of this Agreement which is not cured (if capable of being cured) within the sixty (60) day period after receipt of written notice thereof from YALE, or upon receipt of such notice if such breach is not capable of being cured; or

(c) fails to obtain or maintain adequate insurance as described in Article 14, whereupon YALE may terminate this Agreement immediately upon written notice to LICENSEE.

13.2 This Agreement shall terminate automatically without any notice to LICENSEE in the event LICENSEE shall cease to carry on its business or becomes INSOLVENT, or a petition in bankruptcy is filed against LICENSEE and is consented to, acquiesced in or remains undismissed for sixty (60)

days, or LICENSEE makes a general assignment for the benefit of creditors, or a receiver is appointed for LICENSEE.

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13.3 LICENSEE shall have the right to terminate this Agreement upon written notice to YALE:

(a) at any time on three (3) months' notice to YALE, provided LICENSEE is not in breach and upon payment of all amounts due YALE throughout the effective date of termination; or

(b) in the event YALE commits a material breach of any of the provisions of this Agreement and such breach is not cured (if capable of being cured) within the sixty (60) day period after receipt of written notice thereof from LICENSEE, or upon receipt of such notice if such breach is not capable of being cured,

13.4 Upon termination of this Agreement for any reason, all rights and licenses granted to LICENSEE under the terms of this Agreement are terminated. Upon such termination, and subject to Article 13.4, YALE may elect, in its sole discretion, to cause LICENSEE, its SUBLICENSEES, or AFFILIATES to immediately cease to manufacture or sell some or all ROYALTY PRODUCTS. Within sixty (60) days after the effective date of termination LICENSEE shall return to YALE:

(a) all materials relating to or containing the POOLED PATENTS and CONFIDENTIAL INFORMATION disclosed by YALE;

(b) the last report required under Article 7 or 9; and

(c) all payments incurred up to the effective date of termination. LICENSEE'S payment obligations under the Agreement shall terminate upon the effective date of termination except with respect to payments incurred prior to such effective date. Notwithstanding the foregoing, in the event that YALE elects to allow LICENSEE, its SUBLICENSEES, or AFFILIATES to continue to manufacture and sell ROYALTY PRODUCTS, LICENSEE (or its SUBLICENSEES or AFFILIATES) shall continue to pay royalties to YALE until the earlier of the events to occur in Article 6.1(d)(i) for each such ROYALTY PRODUCT.

Also upon termination of this Agreement, all sublicenses to the POOLED PATENTS that are granted by LICENSEE pursuant to this Agreement shall also terminate on the date of termination of this Agreement subject to Article 13.4(c). Notwithstanding the foregoing, each SUBLICENSEE shall have the continuing obligation to pay EARNED ROYALTIES to YALE on any ROYALTY PRODUCT (including those covered only by POOLED PATENTS owned solely by LICENSEE) after any such termination, and shall continue until the earlier of the events to occur in Article 6.1(d)(í) for each such ROYALTY PRODUCT.

13.5 Termination of this Agreement shall not affect any rights or obligations accrued prior to the effective date of such termination and specifically LICENSEE's obligation to pay all royalties and other payments specified by Articles 4, 5 and 6. The following provisions shall survive any termination: Article 3.4 (with respect to post early termination payment obligations), Article 3.5, Article 8.1 (for the time period set forth therein), Articles 8.2 through 8.4, the preservation and inspection obligations of Article 9, Article 10.2, Article 10.4(d), Article 11 (with respect to litigation initiated prior to the effective date of termination), Article 12,

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Article 13.4, this Article 13.5, Article 13.6, Article 13.8 (with respect to post early termination payment obligations), Article 14, Article 15, Article 16.1, and Article 17. In addition, any provision hereof required to interpret and enforce the parties' rights and obligations under this Agreement shall survive, but only to the extent required for the full observation and performance of this Agreement. The parties agree that claims giving rise to indemnification may arise after the TERM or termination of the LICENSE granted herein.

13.6 The rights provided in this Article 13 shall be in addition and without prejudice to any other rights which the parties may have with respect to any default or breach of the provisions of this Agreement.

13.7 Waiver by either party of one or more defaults or breaches shall not deprive such party of the right to terminate because of any subsequent default or breach.

13.8 The TERM of this Agreement shall expire as set forth in Article 3.4.

Article 14. INDEMNIFICATION; INSURANCE; NO WARRANTIES

14.1 LICENSEE shall defend, indemnify and hold harmless YALE, its trustees, directors, officers, employees, and agents and their respective successors, heirs and assigns against any and all liabilities, claims, demands, damages, judgments, losses and expenses of any nature of any THIRD PARTY, including without limitation legal expenses and attorneys' fees, arising out of any theory of liability (including without limitation tort, warranty, or strict liability) and the death, personal injury, or illness of any person or out of damage to any property related in any way to the rights granted under this Agreement; or resulting from the production, manufacture, sale, use, lease, or other disposition or consumption or advertisement of the PRODUCTS by LICENSEE, its AFFILIATES, SUBLICENSEES or any other transferees; or in connection with any statement, representation or warranty of LICENSEE, its AFFILIATES, SUBLICENSEES or any other transferees with respect to the PRODUCTS.

14.2 LICENSEE shall purchase and maintain in effect and shall require its SUBLICENSEES to purchase and maintain in effect a policy of commercial, general liability insurance to protect YALE with respect to events described in Article 14.1. Such insurance shall:

(a) list "YALE, its trustees, directors, officers, employees and agents" as additional insureds under the policy;

(b) provide that such policy is primary and not excess or contributory with regard to other insurance YALE may have;

(c) be endorsed to include product liability coverage in amounts no less than [***] per incident and [***] annual aggregate; and

(d) be endorsed to include contractual liability coverage for LICENSEE's indemnification under Article 14.1; and

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(e) by virtue of the minimum amount of insurance coverage required under Article 14.2(c), not be construed to create a limit of LICENSEE's liability with respect to its indemnification under Article 14.1.

14.3 By signing this Agreement, LICENSEE certifies that the requirements of Article 14.2 will be met on or before the earlier of (a) the date of FIRST SALE of any PRODUCT or (b) the date any PRODUCT is tested or used on humans, and will continue to be met thereafter. Upon YALE'S request, LICENSEE shall furnish a Certificate of Insurance and a copy of the current Insurance Policy to YALE. LICENSEE shall give [***] written notice to YALE prior to any cancellation of or material change to the policy.

14.4 (a) YALE MAKES NO, AND EXPRESSLY DISCLAIMS ALL, REPRESENTATIONS OR WARRANTIES THAT ANY CLAIMS OF THE POOLED PATENTS, ISSUED OR PENDING, ARE VALID, OR THAT THE MANUFACTURE, USE, SALE OR OTHER DISPOSAL OF THE PRODUCTS DOES NOT OR WILL NOT INFRINGE UPON ANY PATENT OR OTHER RIGHTS NOT VESTED IN YALE. LICENSEE MAKES NO, AND EXPRESSLY DISCLAIMS ALL, REPRESENTATIONS OR WARRANTIES THAT ANY CLAIMS OF THE POOLED PATENTS, ISSUED OR PENDING, ARE VALID, OR THAT THE MANUFACTURE, USE, SALE OR OTHER DISPOSAL OF THE PRODUCTS DOES NOT OR WILL NOT INFRINGE UPON ANY PATENT OR OTHER RIGHTS NOT VESTED IN LICENSEE.

(b) YALE MAKES NO, AND EXPRESSLY DISCLAIMS ALL, REPRESENTATIONS AND WARRANTIES WHATSOEVER WITH RESPECT TO THE POOLED PATENTS OR PRODUCTS, EITHER EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. LICENSEE SHALL MAKE NO STATEMENTS, REPRESENTATION OR WARRANTIES WHATSOEVER TO ANY THIRD PARTIES WHICH ARE INCONSISTENT WITH SUCH DISCLAIMER BY YALE. LICENSEE MAKES NO, AND EXPRESSLY DISCLAIMS ALL, REPRESENTATIONS AND WARRANTIES WHATSOEVER WITH RESPECT TO THE POOLED PATENTS OR PRODUCTS, EITHER EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.

(c) IN NO EVENT SHALL THE TRUSTEES, DIRECTORS, OFFICERS, EMPLOYEES AND AFFILIATES OF EITHER YALE OR LICENSEE, BE LIABLE FOR SPECIAL, INCIDENTAL, CONSEQUENTIAL OR INDIRECT DAMAGES OF ANY KIND, INCLUDING ECONOMIC DAMAGE OR INJURY TO PROPERTY AND LOST PROFITS, REGARDLESS OF WHETHER LICENSEE OR YALE SHALL BE ADVISED, SHALL HAVE OTHER REASON TO KNOW, OR IN FACT SHALL KNOW OF THE POSSIBILITY OF THE FOREGOING.

IN NO EVENT SHALL THE TRUSTEES, DIRECTORS, OFFICERS, EMPLOYEES AND AFFILIATES OF EITHER YALE OR LICENSEE, BE LIABLE FOR DAMAGES IN EXCESS OF AMOUNTS THAT SUCH PARTY HAS RECEIVED FROM THE OTHER PARTY UNDER THIS LICENSE.

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Article 15. NOTICES, PAYMENTS

15.1 Any payment, notice or other communication required by this Agreement (a) shall be in writing, (b) may be delivered personally or sent by reputable overnight courier with written verification of receipt or by registered or certified first class United States Mail, postage prepaid, return receipt requested, (c) shall be sent to the following addresses or to such other address as such party shall designate by written notice to the other party, and (d) shall be effective upon receipt:

FOR YALE:	FOR LICENSEE:
Managing Director	President & CEO
YALE UNIVERSITY	Mirna Therapeutics, Inc.
Office of Cooperative Research	2150 Woodward St., Suite 100
433 Temple Street	Austin, Texas 78744
New Haven, CT 06511	cc:

Article 16. LAWS, FORUM AND REGULATIONS

16.1 Any matter arising out of or related to this Agreement shall be governed by and in accordance with the substantive laws of the State of Connecticut, without regard to its conflicts of law principles, except where the federal laws of the United States are applicable and have precedence. Any dispute arising out of or related to this Agreement shall be brought in a court of competent jurisdiction in the State of Connecticut.

16.2 LICENSEE shall comply, and shall require its AFFILIATES and SUBLICENSEES to comply, with all foreign and United States federal, state, and local laws, regulations, rules and orders applicable to the testing, production, transportation, packaging, labeling, export, sale and use of the PRODUCTS. In particular, LICENSEE shall be responsible for assuring compliance with all United States export laws and regulations applicable to this LICENSE and LICENSEE'S activities under this Agreement.

Article 17. MISCELLANEOUS

17.1 This Agreement shall be binding upon and inure to the benefit of the parties and their respective legal representatives, successors and permitted assigns.

17.2 This Agreement constitutes the entire agreement of the parties relating to the POOLED PATENTS AND PRODUCTS including, without limitation, the ORIGINAL AGREEMENT and, to the extent inconsistent therewith, the Collaboration Agreement between the parties related to a project entitled [***] and effective as of February 22, 2011, and all prior representations, agreements and understandings, written or oral, are merged into it and are superseded by this Agreement.

17.3 The provisions of this Agreement shall be deemed separable, if any part of this Agreement is rendered void, invalid, or unenforceable, such determination shall not affect the validity or enforceability of the remainder of this Agreement unless the part or parts which are void, invalid or unenforceable shall substantially impair the value of the entire Agreement as to either party.

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17.4 Paragraph headings are inserted for convenience of reference only and do not form a part of this Agreement.

17.5 No person not a party to this Agreement, including any employee of any party to this Agreement, shall have or acquire any rights by reason of this Agreement. Nothing contained in this Agreement shall be deemed to constitute the parties partners with each other or any THIRD PARTY.

17.6 This Agreement may not be amended or modified except by written agreement executed by each of the parties. This Agreement is personal to LICENSEE and shall not be assigned by LICENSEE without the prior written consent of YALE, except that LICENSEE may assign this Agreement without prior written consent of YALE to an AFFILIATE, or to a THIRD PARTY that acquires from LICENSEE the line of business of which this Agreement is a part (whether by merger, acquisition of stock or assets, or otherwise), provided that LICENSEE gives YALE timely notice of the assignment. Any attempted assignment in contravention of this Article 17.6 shall be null and void and shall constitute a material breach of this Agreement.

17.7 LICENSEE, or any SUBLICENSEE or assignee, will not create, assume or permit to exist any lien, pledge, security interest or other encumbrance on this Agreement or any sublicense.

17.8 The failure of any party hereto to enforce at any time, or for any period of time, any provision of this Agreement shall not be construed as a waiver of either such provision or of the right of such party thereafter to enforce each and every provision of this Agreement.

17.9 This Agreement may be executed in any number of counterparts and any party may execute any such counterpart, each of which when executed and delivered shall be deemed to be an original and all of which counterparts taken together shall constitute but one and the same instrument,

{*signature page follows*}

IN WITNESS to their Agreement, the parties have caused this Agreement to be executed in duplicate originals by their duly authorized representatives.

YALE UNIVERSITY	MIRNA THERAPEUTICS, INC.
By: /s/ Jonathan Soderstrom	By: /s/ Paul Lammers
E. Jonathan Soderstrom, Ph.D.	Paul Lammers, M.D., M.Sc.
Its: Managing Director, Office of Cooperative Research	Its: President & CEO
Dated: 6 Feb 2014	Dated: Feb 03, 2014

Exhibit A

POOLED PATENTS

[***]

[***] Certain information in this document has been omitted and filed separately with the Securities and Exchange Commission. Confidential treatment has been requested with respect to the omitted portions.

Exhibit B — [***]

[***] shall mean the demonstration of [***] for LICENSED PRODUCTS, which shall be evidenced by [***]:

[***]

[***] Certain information in this document has been omitted and filed separately with the Securities and Exchange Commission. Confidential treatment has been requested with respect to the omitted portions.

Exhibit 10.5

[***] Certain information in this document has been omitted and filed separately with the Securities and Exchange Commission. Confidential treatment has been requested with respect to the omitted portions.

LICENSE AGREEMENT

This agreement ("Agreement") is made by and between

University of Zurich
Rämistrasse 71
CH-8006 Zurich (Switzerland)

("UNIVERSITY")

and

Mirna Therapeutics, Inc.
2150 Woodward St., Suite 100
Austin, TX 78744 (USA)

("LICENSEE")

UNIVERSITY and LICENSEE are hereafter collectively referred to as "the Parties" or separately as a "Party".

This Agreement is effective on March 10, 2013 ("Effective Date").

RECITALS

WHEREAS, UNIVERSITY is owner of Patent Rights as defined below on [***] ("Invention");

WHEREAS, UNIVERSITY is desirous that the Invention be developed and exploited to the fullest possible extent so that its benefits can be enjoyed by the general public;

WHEREAS, LICENSEE wishes to obtain, and UNIVERSITY is willing to grant, an exclusive license to the Patent Rights on the terms and conditions set out below.

NOW, THEREFORE, the Parties agree:

ARTICLE 1. DEFINITIONS

All terms, as defined herein, shall have the same meanings in both their singular and plural forms.

1.1 "Affiliate" means any corporation or other business entity in which LICENSEE owns or controls, directly or indirectly, at least fifty percent (50%) of the outstanding stock or other voting rights entitled to elect directors, or in which LICENSEE is owned or controlled directly or indirectly by at least fifty percent (50%) of the outstanding stock or other voting rights entitled to elect directors.

1.2 "Sublicensee" means a third party to whom LICENSEE grants a sublicense of certain rights granted to LICENSEE under this Agreement.

1.3 "Field" means [***].

1.4 "Territory" means world-wide.

1.5 "Term" means the period of time beginning on the Effective Date and ending on the expiration date of the longest-lived Patent Rights.

1.6 "Patent Rights" means any of the following: the [***], and all national and regional phase applications resulting therefrom, and continuing applications thereof including divisions, substitutions, and continuations-in-part; any patents issuing on said applications including reissues, reexaminations and extensions; and any corresponding applications, patents and extensions in other countries.

1.7 "Licensed Product" means any composition, product or service which, in the course of manufacture, use, sale or importation, would be within the scope of one or more Valid Claims of Patent Rights.

1.8 "Valid Claim" means (a) any claim of an issued and unexpired patent within the Patents Rights which has not been held unenforceable or invalid by a court or other governmental agency of competent jurisdiction in an unappealed or unappealable decision, or (b) a claim in a pending patent application within the Patent Rights, which application was filed no more than [***].

1.9 "Net Sales" means the total of the gross receipts for sales of Licensed Products by or on behalf of LICENSEE or its Affiliates or its Sublicensees to third parties in bona fide arm's length transactions, and from leasing, renting, or otherwise making Licensed Products available to others without sale or other dispositions, whether invoiced or not, less the sum of the following actual and customary deductions where applicable and separately itemized on the invoice and actually paid or allowed: cash, trade, or quantity discounts; value added, sales or use taxes, and custom duties; transportation charges; or credits to customers because of rejections or returns.

For the avoidance of doubt Net Sales shall be calculated only once for the first sale of such Licensed Product by either LICENSEE, its Affiliates, or Sublicensees, as the case may be, to a third party other than an Affiliate or Sublicensee. The initial sale of Licensed Product by LICENSEE, its Affiliates, or Sublicensees to a wholesaler shall be regarded as the first sale of the Licensed Product for the purpose of calculating Net Sales.

ARTICLE 2. GRANTS

2.1 **License.** Subject to the limitations set forth in this Agreement, UNIVERSITY hereby grants to LICENSEE, and LICENSEE hereby accepts, a license under Patent Rights to make and have made, use, sell, offer for sale, and import Licensed Products in the Field within the Territory and during the Term.

[***] Certain information in this document has been omitted and filed separately with the Securities and Exchange Commission. Confidential treatment has been requested with respect to the omitted portions.

The license granted herein is exclusive for Patent Rights and UNIVERSITY shall not grant to third parties a further license under Patent Rights in the Field, within the Territory and during the Term.

2.2 **Sublicense.**

(a) The license granted in Paragraph 2.1 includes the right of LICENSEE to grant sublicenses to third parties during the Term. The terms and conditions of any sublicense shall be in accordance with sound and reasonable business practices and any fees charged shall not be unreasonable for comparable rights.

(b) With respect to any sublicense granted pursuant to Paragraph 2.2(a), LICENSEE shall:

(1) [***] from a third party under a sublicense granted pursuant to Paragraph 2.2(a) without the express written consent of UNIVERSITY;

(2) to the extent applicable, include all of the rights of and obligations due to UNIVERSITY and contained in this Agreement;

(3) promptly notify UNIVERSITY of each sublicense agreement entered into and provide UNIVERSITY with a copy of such sublicense agreement; and

(4) collect and guarantee payment of all payments due, directly or indirectly, to UNIVERSITY from Sublicensees and summarize and deliver all reports due, directly or indirectly, to UNIVERSITY from Sublicensees.

(c) Upon termination of this Agreement in accordance with its terms for whatever reasons, UNIVERSITY, at its sole discretion, shall determine whether LICENSEE shall have to cancel or to assign to UNIVERSITY any and all sublicenses provided that sublicensee wishes to receive such direct license from the UNIVERSITY. Save as otherwise agreed by UNIVERSITY and the assignee, such assignment shall be contingent upon the express acceptance by the Sublicensee of all provisions of this Agreement.

2.3 **Reservation of Rights.** UNIVERSITY reserves the right to use the Invention and Patent Rights for educational and research purposes free of charge.

ARTICLE 3. CONSIDERATIONS

3.1 **Fees and Royalties.** In consideration for the license granted herein to LICENSEE under Patent Rights LICENSEE agrees to pay to UNIVERSITY:

(a) **license maintenance fees** of i) [***] on the [***] anniversary of the Effective Date, and ii) [***] on the [***] anniversary of the Effective Date, and iii) [***] on the [***] and annually thereafter on each anniversary of the Effective date;

(b) an **earned royalty** of [***] on Net Sales;

[***] Certain information in this document has been omitted and filed separately with the Securities and Exchange Commission. Confidential treatment has been requested with respect to the omitted portions.

(c) [***] of all **sublicense fees** received by LICENSEE from its Sublicensees that are not earned royalties.

All fees and royalty payments specified in this Paragraph 3.1 shall be paid by LICENSEE in accordance with the provisions of Paragraph 4.3.

If there are multiple, stacking royalties required to be paid by LICENSEE to any third party in order to exercise its rights hereunder to make, have made, use or sell the Licensed Products and the resulting aggregate royalty rate is [***], then the royalty rate under Section 3.1.(b) will be adjusted so that the combined royalty payments from LICENSEE to all of its licensors, including UNIVERSITY, does not exceed [***]. The royalty rate payable to UNIVERSITY will be reduced [***] to a rate determined by [***], provided, however, that in no event shall the royalty rate payable to LICENSEE be less than [***]. Notwithstanding the foregoing, if LICENSEE's agreement with any of such other licensors provides for a royalty proration formula based on an aggregate royalty rate [***], LICENSEE and UNIVERSITY will replace the aggregate royalty rate set forth in this Section with [***].

3.2 **Due Diligence.**

(a) LICENSEE (directly and/or through one or more Affiliates and/or Sublicensees) shall use commercially reasonable efforts to develop, manufacture and sell and market Licensed Products.

(b) If LICENSEE fails to perform any of its obligations specified in Paragraph 3.2(a), then UNIVERSITY shall [***]. If UNIVERSITY [***], the Parties shall [***]. In the absence of [***].

ARTICLE 4. REPORTS, RECORDS AND PAYMENTS

4.1 **Reports.**

(a) **Progress Reports.**

(1) Beginning January 1, 2015 and ending on the date of first commercial sale of a Licensed Product in the United States and Europe, LICENSEE shall submit to UNIVERSITY annual progress reports covering LICENSEE's (and each Affiliate's and Sublicensee's) [***]. Such reports shall include a summary of work completed; summary of work in progress; current schedule of anticipated events or milestones; market plans for introduction of Licensed Products; and summary of resources spent in the reporting period.

(2) LICENSEE shall also report to UNIVERSITY, in its immediately subsequent progress report, the date of first commercial sale of a Licensed Product in each country.

(b) **Royalty Reports.** After the First Commercial Sale of a Licensed Product anywhere in the world, LICENSEE shall submit to UNIVERSITY annual royalty reports on or before each March 31 of each year. Each royalty report shall cover LICENSEE's (and each Affiliate's and Sublicensee's) most recently completed calendar year and shall show:

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(1) the gross sales, deductions as provided in Paragraph 1.9, and Net Sales during the precedent calendar year and the royalties payable with respect thereto;

(2) the number of each type of Licensed Product sold on a country by country basis;

(3) sublicense fees and royalties received during the precedent calendar year;

(4) the method used to calculate the royalties; and

(5) the exchange rates used.

If no sales of Licensed Products have been made and no sublicense revenues have been received by LICENSEE during any reporting period, LICENSEE shall so report.

The royalty report shall be certified as correct by an authorized officer of LICENSEE.

4.2 **Records & Audits**.

(a) LICENSEE shall keep, and shall require its Affiliates and Sublicensees to keep, accurate and correct records of all Licensed Products manufactured, used, and sold, and sublicense fees received under this Agreement. Such records shall be retained by LICENSEE for at least [***] following a given reporting period.

(b) All records shall be available during normal business hours for inspection at the expense of UNIVERSITY by UNIVERSITY'S Internal Audit Department or by a public accountant selected by UNIVERSITY, reasonably acceptable to LICENSEE, and in compliance with the other terms of this Agreement for the sole purpose of verifying reports and payments. Such inspector shall not disclose to UNIVERSITY any information other than information relating to the accuracy of reports and payments made under this Agreement or other compliance issues. In the event that any such inspection shows an underpayment in excess of [***] for any twelve (12) month period, then LICENSEE shall pay the cost of the audit as well as any additional sum which would have been payable to UNIVERSITY had LICENSEE reported correctly, plus an interest charge at a rate of [***] per year on such additional sum. Such interest shall be calculated from the date on which the correct payment was due to UNIVERSITY up to the date when such payment is actually made by LICENSEE. For underpayment not in excess of [***] for any twelve (12) month period, LICENSEE shall pay the difference within [***].

(c) LICENSEE agrees to have an audit of sales and royalties conducted by an independent auditor at least [***] if annual Net Sales by LICENSEE, its Affiliates or Sublicensees are totaling [***]. The audit shall address, at a minimum, the amount of gross sales and Net Sales by or on behalf of LICENSEE during the audit period, the amount of royalties owed to UNIVERSITY under this Agreement, and whether the royalties owed have been paid to UNIVERSITY. A report certified by the auditor shall be submitted promptly by the auditor directly to UNIVERSITY on completion. [***].

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4.3 **Payments.**

(a) All fees due to UNIVERSITY shall be paid to the following bank account, or to such other bank account specified in writing by UNIVERSITY to LICENSEE:

[***]

(b) Royalty Payments.

(1) Royalties shall accrue when Licensed Products are invoiced, or if not invoiced, when delivered to a third party or Affiliate.

(2) LICENSEE shall pay earned royalties annually on or before March 31 of each calendar year. Each such payment shall be for earned royalties accrued within LICENSEE's most recently completed calendar year.

(3) LICENSEE shall pay [***] as required by law and provide UNIVERSITY with appropriate documentation of such tax payment. LICENSEE shall use reasonable efforts to: (i) [***]; and (ii) [***].

(4) In the event that any patent or patent claim within Patent Rights is held invalid or unenforceable in a final decision by a patent office from which no appeal or additional patent prosecution has been or can be taken, or by a court of competent jurisdiction and last resort and from which no appeal has or can be taken, all obligation to pay royalties based solely on that patent or claim or any claim patentably indistinct therefrom shall cease as of the date of such final decision. LICENSEE shall not, however, be relieved from paying any royalties which (i) accrued before the date of such final decision, or (ii) are based on another patent or claim not involved and not affected by such final decision.

(c) Late Payments. In the event royalty, reimbursement and/or fee payments are not received by UNIVERSITY when due, LICENSEE shall pay to UNIVERSITY interest charges at a rate of [***] per year. Such interest shall accrue as from the date when such payment was due until the corresponding amount is actually received by UNIVERSITY.

ARTICLE 5. PATENT MATTERS

5.1 **Patent Prosecution and Maintenance.**

(a) LICENSEE, at its own expense, utilizing patent attorneys of its choice, shall be responsible for the filing, prosecution and maintenance of patent applications and patents within the Patent Rights in at least the following countries: [***]. Any such filings shall be in the name of UNIVERSITY and LICENSEE shall be acting in the best interest of UNIVERSITY in filing, prosecuting and maintaining the Patent Rights. LICENSEE, or its patent counsel shall provide UNIVERSITY on an ongoing basis with copies of all documentation relating to such filing, prosecution and maintenance and UNIVERSITY shall keep this documentation confidential.

(b) UNIVERSITY shall fully cooperate with LICENSEE in preparing, filing, prosecuting and maintaining any patent applications and patents in the Patent Rights. LICENSEE, or its patent counsel, shall consult with UNIVERSITY in all aspects of the preparation, filing, prosecution and maintenance of Patent Rights and shall provide

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UNIVERSITY sufficient opportunity to comment on any document that LICENSEE intends to file or to cause to be filed with the relevant intellectual property or patent office. LICENSEE, or its patent counsel, shall provide UNIVERSITY on an ongoing basis with copies of all documentation relating to such prosecution and UNIVERSITY shall keep this documentation confidential.

(c) LICENSEE shall apply for an extension of the term of any patent in Patent Rights if appropriate under the US Drug Price Competition and Patent Term Restoration Act and/or European, Japanese and other foreign counterparts thereof. LICENSEE shall prepare all documents for such applications, and UNIVERSITY shall execute such documents and take any other additional action as LICENSEE may reasonably request in connection therewith.

5.2 **Patent Infringement.**

(a) If LICENSEE learns of any substantial infringement of Patent Rights, LICENSEE shall so inform UNIVERSITY and provide UNIVERSITY with reasonable available evidence of such infringement. Neither Party shall notify a third party of the infringement of Patent Rights without the consent of the other Party, which consent shall not be unreasonably withheld. Both parties shall use reasonable efforts and cooperation to terminate infringement without litigation.

(b) LICENSEE may request UNIVERSITY to take legal action against such third party for the infringement of Patent Rights. Such request shall be made in writing and shall include [***]. If the infringing activity has not abated [***] following LICENSEE'S request, UNIVERSITY shall elect to or not to commence suit on its own account. UNIVERSITY shall give notice of its election in writing to LICENSEE by [***] after receiving notice of such request from LICENSEE. LICENSEE may thereafter bring suit for patent infringement at its own expense, if and only if UNIVERSITY elects not to commence suit and the infringement occurred in a jurisdiction where LICENSEE has an exclusive license under this Agreement. University shall give all necessary powers for instituting infringement proceedings. If LICENSEE elects to bring suit, UNIVERSITY may join that suit at its own expense. If however UNIVERSITY joins such suit on demand of LICENSEE because it is legally necessary, [***].

(c) Recoveries from actions brought pursuant to Paragraph 5.2(b) shall belong to the Party bringing suit except that in the event that LICENSEE brings suit for infringement of Patent Rights and an acceptable settlement is entered into or monetary damages are awarded in a final non-appealable judgment, UNIVERSITY shall be reimbursed for any amount which would have been due to UNIVERSITY under this Agreement if the products sold by the infringer actually had been sold by LICENSEE. Legal actions brought jointly by UNIVERSITY and LICENSEE and fully participated in by both shall be at the joint expense of the parties and all recoveries shall be shared jointly by them in proportion to the share of expense paid by each party.

(d) Each party shall cooperate with the other in litigation proceedings at the expense of the party bringing suit. Litigation shall be controlled by the party bringing the suit, except that UNIVERSITY may be represented by counsel of its choice in any suit brought by LICENSEE.

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5.3 **Patent Marking.** LICENSEE shall mark all Licensed Products made, used or sold under the terms of this Agreement, or their containers, in accordance with the applicable patent marking laws.

ARTICLE 6. GOVERNMENTAL MATTERS

Governmental Approval or Registration. If this Agreement or any associated transaction is required by the law of any nation to be either approved or registered with any governmental agency, LICENSEE shall assume all legal obligations to do so. LICENSEE shall notify UNIVERSITY if it becomes aware that this Agreement is subject to any government reporting or approval requirement. LICENSEE shall make all necessary filings and pay all costs including fees, penalties, and all other out-of-pocket costs associated with such reporting or approval process.

ARTICLE 7. TERMINATION OF THE AGREEMENT

7.1 **Termination by UNIVERSITY.**

(a) If LICENSEE fails to perform or violates any term of this Agreement including but not limited to if LICENSEE is [***] in arrears with payment according to Paragraph 4.3, then UNIVERSITY shall be entitled to give LICENSEE written notice of default specifying the nature of default and requiring to cure it ("Notice of Default"). If LICENSEE fails to cure the default within sixty (60) days of the Notice of Default, then UNIVERSITY shall be entitled to terminate this Agreement and the license granted herein by sending a second written notice ("Notice of Termination") to LICENSEE. If such a Notice of Termination is sent to LICENSEE, this Agreement shall automatically terminate on the effective date of that notice. Termination shall not relieve LICENSEE of its obligation to pay any fees owed at the time of termination and shall not impair any accrued right of UNIVERSITY. In case of termination caused by default of payment all respective interest for default are to be paid additionally.

(b) UNIVERSITY shall have the right to terminate this Agreement by giving written notice, in the event of the filing by LICENSEE of a petition of bankruptcy or insolvency or both, or in the event of an adjudication that LICENSEE is bankrupt or insolvent or both, or after filing by LICENSEE of any petition or pleading asking reorganization, readjustment or rearrangement of its business under any law relating to bankruptcy or insolvency, or upon or after appointment of a receiver for all or substantially all of the property of LICENSEE or upon or after the making of any assignment for the benefit of creditors or upon or after the institution of any proceedings for the liquidation or winding-up of LICENSEE's business or for the termination of its corporate charter, and this Agreement shall terminate upon the date specified in such written notice.

(c) If at any time during the term of this Agreement LICENSEE directly or indirectly opposes or assists any third party to oppose the grant of letters patent or any patent application within the Patent Rights or disputes or directly or indirectly assists any third party to dispute the validity of any patent within the Patent Rights or any of the claims thereof, then UNIVERSITY shall be entitled at any time thereafter to terminate all or any of the licenses granted hereunder forthwith by written notice thereof to LICENSEE.

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(d) UNIVERSITY shall be entitled to terminate this Agreement immediately in accordance with Paragraph 3.2(b).

7.2 **Termination by Licensee.**

(a) LICENSEE shall have the right at any time and for any reason to terminate this Agreement upon a six (6) months written notice to UNIVERSITY. Said notice shall state LICENSEE's reason for terminating this Agreement.

(b) Any termination under Paragraph 7.2(a) shall not relieve LICENSEE of any obligation or liability accrued under this Agreement prior to termination or rescind any payment made to UNIVERSITY or action by LICENSEE prior to the time termination becomes effective. Termination shall not affect in any manner any rights of UNIVERSITY arising under this Agreement prior to termination.

7.3 **Survival on Termination.** Upon expiration or termination of the Agreement, the obligations which by their nature are intended to survive expiration or termination of the Agreement shall survive.

7.4 **Disposition of Licensed Products on Hand.** Upon termination of this Agreement, LICENSEE may dispose of all previously made or partially made Licensed Product within a period of [***] of the effective date of such termination provided that the sale of such Licensed Product by LICENSEE, its Sublicensees, or Affiliates shall be subject to the terms of this Agreement, including but not limited to the rendering of reports and payment of royalties required under this Agreement.

7.5 In the event of the termination of this Agreement, LICENSEE shall provide UNIVERSITY without delay with all necessary information, documents etc. relating to the application, filing and/or prosecution of the Patent Rights in order to prepare and effect a transfer to patent attorneys of UNIVERSITY's choice and take all actions at its own costs to ensure patent maintenance until termination becomes effective.

ARTICLE 8. LIMITED WARRANTY AND INDEMNIFICATION

8.1 **Limited Warranty.**

(a) UNIVERSITY warrants that it has the lawful right to grant this license.

(b) The license granted herein is provided "AS IS" and without WARRANTY OF MERCHANTABILITY or WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE or any other warranty, express or implied. UNIVERSITY makes no representation or warranty that the Licensed Product or the use of Patent Rights will not infringe any other patent or other proprietary rights.

(c) In no event shall UNIVERSITY be liable for any incidental, special or consequential damages resulting from exercise of the license granted herein or the use of the Invention or Licensed Product.

[***] Certain information in this document has been omitted and filed separately with the Securities and Exchange Commission. Confidential treatment has been requested with respect to the omitted portions.

(d) Nothing in this Agreement shall be construed as:

(1) a warranty or representation by UNIVERSITY as to the validity or scope of any Patent Rights;

(2) a warranty or representation that anything made, used, sold or otherwise disposed of under any license granted in this Agreement is or shall be free from infringement of patents of third parties;

(3) an obligation to bring or prosecute actions or suits against third parties for patent infringement except as provided in Paragraph 5.2 hereof.

8.2 **Indemnification.**

(a) LICENSEE shall indemnify, hold harmless and defend UNIVERSITY, its officers, employees, and agents and the inventors of the patents and patent applications in Patent Rights against any and all claims, suits, losses, damage, costs, fees, and expenses resulting from or arising out of exercise of this license or any sublicense. This indemnification shall include, but not be limited to, any product liability.

(b) LICENSEE, at its sole cost and expense, shall insure its activities in connection with the work under this Agreement and obtain, keep in force and maintain insurance or an equivalent program of self insurance. For the purposes of this provision, a general liability corporate insurance will be deemed sufficient.

(c) UNIVERSITY shall notify LICENSEE in writing of any claim or suit brought against UNIVERSITY in respect of which UNIVERSITY intends to invoke the provisions of this Article. LICENSEE shall keep UNIVERSITY informed on a current basis of its defense of any claims under this Article.

ARTICLE 9. USE OF NAMES AND TRADEMARKS, CONFIDENTIALITY

9.1 Nothing contained in this Agreement confers any right to use in advertising, publicity, or other promotional activities any name, trade name, trademark, or other designation of either Party hereto (including contraction, abbreviation or simulation of any of the foregoing).

9.2 UNIVERSITY may disclose to the inventors of the Invention the terms and conditions of this Agreement upon their request. If such disclosure is made, UNIVERSITY shall request the Inventors not disclose such terms and conditions to any other persons or entities.

9.3 UNIVERSITY may disclose the existence of this Agreement and the extent of the grant in Article 2 to third parties, but UNIVERSITY shall refrain from disclosing the financial terms of this Agreement to third parties, except where UNIVERSITY is required by law to do so.

ARTICLE 10. MISCELLANEOUS PROVISIONS

10.1 **Correspondence.** Any notice required to be given to either Party under this Agreement shall be deemed to have been properly given and effective:

(a) on the date of delivery if delivered in person or by facsimile, or

(b) five (5) business days after mailing if mailed by registered mail, postage paid, to the respective addresses given below, or to such other address as is designated by written notice given to the other Party.

If sent to LICENSEE:

Mirna Therapeutics, Inc.
2150 Woodward St., Suite 100
Austin, Texas 78744
United States of America
Tel.: +1-512-901-0900
Attn: Chief Executive Officer

If sent to UNIVERSITY:

University of Zurich, c/o Unitectra, Technology Transfer Office; Ref. UZ-12/394; Möhrlistrasse 23; CH 8006 Zurich (SWITZERLAND); Facsimile 0041 44 634 44 09

10.2 **Assignability.** This Agreement shall not be assigned by LICENSEE except:

(a) with the prior written consent of UNIVERSITY, which consent shall not be withheld unreasonably; or

(b) as part of a sale or transfer of substantially the entire business of LICENSEE relating to operations which concern this Agreement.

LICENSEE shall notify UNIVERSITY within ten (10) days of any assignment of this Agreement by LICENSEE pursuant to Section 10.3(b).

10.3 **No Waiver.** No waiver by either Party of any breach or default of any covenant or agreement set forth in this Agreement shall be deemed a waiver as to any subsequent and/or similar breach or default.

10.4 **Governing Laws and Jurisdiction.** THIS AGREEMENT SHALL BE INTERPRETED AND CONSTRUED IN ACCORDANCE WITH THE LAWS OF SWITZERLAND. For any and all disputes arising from this Agreement, the Commercial Court of the Canton of Zurich shall have exclusive jurisdiction, subject to the appeal to the Swiss Supreme Court.

10.5 **Force Majeure.** A Party to this Agreement may be excused from any performance required herein if such performance is rendered impossible or unfeasible due to any catastrophe or other major event beyond its reasonable control, including, without limitation, war, riot, and insurrection; laws, proclamations, edicts, ordinances, or regulations; strikes, lockouts, or other serious labor disputes; and floods, fires, explosions, or other natural disasters. When such events have abated, the non-performing Party's obligations herein shall resume.

10.6 **Headings.** The headings of the several sections are inserted for convenience of reference only and are not intended to be a part of or to affect the meaning or interpretation of this Agreement.

10.7 **Entire Agreement.** This Agreement embodies the entire understanding of the Parties and supersedes all previous communications, representations or understandings, either oral or written, between the Parties relating to the subject matter hereof.

10.8 **Amendments.** No amendment or modification of this Agreement shall be valid or binding on the parties unless made in writing and signed on behalf of each Party.

10.9 **Severability.** Should some or several provisions of this Agreement be ineffective or invalid, or should there be an omission in this Agreement, the effectiveness, respectively the validity of the remaining provisions shall not be affected thereby. An ineffective, respectively, invalid provision shall be replaced by the interpretation of the agreement which comes nearest to the meaning and the envisaged purpose of the ineffective respectively, invalid provision. The same applies in the case of a contractual gap.

10.10 The terms and conditions of this Agreement shall, at UNIVERSITY's sole option, be considered by UNIVERSITY to be withdrawn from LICENSEE's consideration and the terms and conditions of this Agreement, and the Agreement itself to be null and void, unless this Agreement is executed by the LICENSEE and a fully executed original is received by UNIVERSITY within sixty (60) days from the date of UNIVERSITY signature found below.

IN WITNESS WHEREOF, both UNIVERSITY and LICENSEE have executed this Agreement, in duplicate originals, by their respective and duly authorized officers on the day and year first above written.

UNIVERSITY

Date: 7.3.13

By: **Stefan Schnyder**
Director Finance, Human Resources
and Infrastructure

/s/ Stefan Schnyder
(Signature)

Date: 5.3.13

By: **Prof. Dr. Daniel Wyler**
Vice President

/s/ Daniel Wyler
(Signature)

LICENSEE (Mirna Therapeutics, Inc.)

Date: 18 March 2013

By: Dr. Paul Lammers
President and CEO

/s/ Paul Lammers
(Signature)

Exhibit 10.6

[***] Certain information in this document has been omitted and filed separately with the Securities and Exchange Commission. Confidential treatment has been requested with respect to the omitted portions.

CANCER PREVENTION &
RESEARCH INSTITUTE OF TEXAS

STATE OF TEXAS
COUNTY OF TRAVIS

This **CANCER RESEARCH GRANT CONTRACT** ("**Contract**") is by and between the Cancer Prevention and Research Institute of Texas ("**CPRIT**"), hereinafter referred to as the "**INSTITUTE**", acting through its Executive Director, and **Mirna Therapeutics, Inc.**, hereinafter referred to as the "**RECIPIENT**", acting through its authorized signing official.

RECITALS

WHEREAS, pursuant to TEX. HEALTH & SAFETY CODE, Ch. 102, the INSTITUTE may make grants to public and private persons in this state for research into the causes and cures for all types of cancer in humans; facilities for use in research into the causes and cures for cancer; research to develop therapies, protocols, medical pharmaceuticals, or procedures for the cure or substantial mitigation of all types of cancer; and cancer prevention and control programs.

WHEREAS, Article III, Section 67 of the Texas Constitution expressly authorizes the State of Texas to sell general obligation bonds on behalf of the INSTITUTE and for the INSTITUTE to use the proceeds from the sale of the bonds for the purposes of cancer research and Prevention programs in this state.

WHEREAS, the INSTITUTE issued a request for applications for RFA R40-COMP1: Company Investment on or about November 2009.

WHEREAS, pursuant to TEX. HEALTH & SAFETY CODE § 102.251, and after a review by the INSTITUTE's scientific research and prevention program committees, the INSTITUTE's Executive Director has approved a Grant (defined below) to be awarded to the RECIPIENT.

WHEREAS, to ensure that the Grant provided to the RECIPIENT pursuant to this Contract is utilized in a manner consistent with Tex. Const. Article III, Section 67 and other laws, and in exchange for receiving such Grant, the RECIPIENT agrees to comply with certain conditions and deliver certain performance.

WHEREAS, the RECIPIENT and the INSTITUTE desire to set forth herein the provisions relating to the awarding of such monies and the disbursement thereof to the RECIPIENT.

IN CONSIDERATION of the Grant and the premises, covenants, agreements, and provisions contained in this Contract, the parties agree to the following terms and conditions:

Article I
DEFINITIONS

The following terms shall have the following meaning throughout this Contract and any Attachments and amendments. Other terms may be defined elsewhere in this Contract.

(1) **Collaborator** — any entity other than the RECIPIENT having one or more personnel participating in the Project and (a) designated as a collaborator in the application submitted by the RECIPIENT requesting the Grant funds awarded by the INSTITUTE, or (b) otherwise approved in writing as a collaborator by the INSTITUTE.

(2) **Contractor** — any person or entity, other than a Collaborator or the RECIPIENT (or their respective personnel), who is contracted by the RECIPIENT to perform activities for the Project.

(3) **Equipment** - an article of tangible, nonexpendable personal property having a useful life of more than one year and an acquisition cost of $5,000 or more per unit.

(4) **Grant** — the funding assistance authorized by TEX. HEALTH & SAFETY CODE, Ch. 102 in the amount specified in Section 2.01 and awarded by the INSTITUTE to the RECIPIENT to carry out the Project pursuant to the terms and conditions of this Contract.

(5) **Indirect Costs** — the expenses of doing business that are not readily identified with a particular grant, contract, project, function or activity, but are necessary for the general operation of the organization or the performance of the organization's activities.

(6) **Institute-Funded Activity** — all aspects of work conducted on or as part of the Project.

(7) **Non-Profit Organization** — a university or other institution of higher education or an organization of the type described in 501(c)(3) of the Internal Revenue Code of 1986, as amended (26 U.S.C. 501 (c)(3)) and exempt from taxation under 501 (a) of the Internal Revenue Code (26 U.S.C. 501 (a)) or any nonprofit scientific or educational organization qualified under a state nonprofit organization statute.

(8) **Principal investigator/Program Director** — the individual designated by the RECIPIENT to direct the Project who is principally responsible and accountable to the RECIPIENT and the INSTITUTE for the proper conduct of the Project. References herein to "Principal Investigator/Program Director" include Co-Principal Investigators or Co-Program Directors as well. The Principal Investigator/Program Director and Co-Principal Investigators or Co-Program Directors are set forth on Attachment A.

(9) **Project** — the activities specified or generally described in the Scope of Work or otherwise in this Contract (including without limitation any of the Attachments to the Contract) that are approved by the INSTITUTE for funding, regardless of whether the INSTITUTE funding constitutes all or only a portion of the financial support necessary to carry them out.

(10) **Recipient Personnel** — The RECIPIENT's Principal Investigator/Program Director and RECIPIENT's employees and consultants working on the Project.

Article II
GRANT AWARD

Section 2.01 Award of Monies. In accordance with the provisions of this Contract, the INSTITUTE shall disburse the proceeds of the Grant to the RECIPIENT in an amount not to exceed **$10,297,454** to be used solely for the Project. This award is subject to compliance with the Scope of Work and demonstration of progress towards achievement of the milestones set forth in Section 2.02. The INSTITUTE, in its sole discretion, may award supplemental funding not to exceed ten percent (10%) of the total Grant amount based upon progress made by the RECIPIENT pursuant to the Scope of Work. This Grant is not intended to be a loan of money.

Section 2.02 Scope of Work and Milestones. The RECIPIENT shall perform the Project in accordance with this Agreement and as outlined in Application **RP101219** submitted by the RECIPIENT and approved by the INSTITUTE. The RECIPIENT shall conduct the Project within the State of Texas with Texas-based employees, Contractors and/or Collaborators unless otherwise specified in the Scope of Work or the Approved Budget. The INSTITUTE and the RECIPIENT hereby adopt the terms of Attachment A in their entirety, incorporate them as if fully set forth herein, and agree that the Project description, goals, timeline and milestones included as Attachment A accurately reflect the Scope of Work of the Project to be undertaken by the RECIPIENT (the "**Scope of Work**") and the milestones expected to be achieved. RECIPIENT and the INSTITUTE mutually agree that the outcome of scientific research is unpredictable and cannot be guaranteed. The RECIPIENT shall use commercially reasonable efforts to complete the goals of the Project pursuant to the timeline reflected in Attachment A and shall timely notify the INSTITUTE if circumstances occur that materially and adversely affect completion thereof. Modifications, if any, to the Scope of Work must be agreed to in writing by both parties as set forth in Section 2.06 "Amendments and Modifications" herein. Material changes to the Scope of Work include, but are not limited to, changes in key personnel involved with the Project, the site of the Project, and the milestones expected to be achieved.

Section 2.03 Contract Term. The Contract shall be effective as of **August 1, 2010** (the "**Effective Date**") and terminate on July 31, 2013 or in accordance with the Contract termination provisions set forth in Article VIII herein, whichever shall occur first (the "**Termination Date**"). Unless otherwise approved by the INSTITUTE as evidenced by written communication from the INSTITUTE to the RECIPIENT and appended to the Contract, Grant funds distributed pursuant to the Contract shall be expended no earlier than the Effective Date or subsequent to the Termination Date. If, as of the Termination Date, the RECIPIENT has not used Grant money awarded by the INSTITUTE for the Project and has not received approval from the INSTITUTE for a no cost extension to the contract term pursuant to Section 3.10 "Carry Forward of Unspent Funds and No Cost Extension" herein, then the RECIPIENT shall not be entitled to retain such unused Grant funds from the INSTITUTE, Certain obligations as set forth in Section 9.09 of this Contract shall extend beyond the Termination Date.

Section 2.04 Contract Documentation. The Contract between the INSTITUTE and the RECIPIENT shall consist of this final, executed Contract, including the following Attachments to the Contract, all of which are hereby incorporated by reference:

(a) Attachment A — Project Description, Goals and Timeline

(b) Attachment B — Approved Budget, including changes approved by the INSTITUTE subsequent to execution of the Contract.

(c) Attachment C — Assurances and Certifications

(d) Attachment D — Intellectual Property and Revenue Sharing

(e) Attachment E — Reporting Requirements

(f) Attachment F - Approved Amendments to Contract, excluding amendments to the Scope of Work and Milestones and/or budget amendments that are reflected in Attachments A and B, respectively.

Section 2.05 Entire Agreement. All agreements, covenants, representations, certifications and understandings between the parties hereto concerning this Contract have been merged into this written Contract. No prior or contemporaneous representation, agreement or understanding, express or implied, oral or otherwise, of the parties or their agents that may have related to the subject matter hereof in any way shall be valid or enforceable unless embodied in this Contract.

Section 2.06 Amendments and Modifications. Requested amendments and modifications to the Contract must be submitted in writing to the INSTITUTE for review and approval (such approval shall not be unreasonably withheld.) Amendments and modifications (including alterations, additions, deletions, assignments and extensions) to the terms of this Contract shall be made solely in writing and shall be executed by both parties. The approved amendment shall be reflected in Attachment A if it is change to the Scope of Work, or as part of Attachment B if it is a budget amendment, or as part of Attachment F for all other changes. No handwritten changes to this Contract shall be effective unless initialed and dated by authorized signatories of both parties.

Section 2.07 Relationship of the Parties. The RECIPIENT shall be responsible for the conduct of the Project that is the subject of this Contract and shall direct the activities and at all times be responsible for the performance of Recipient Personnel, Collaborators, Contractors and other agents. The INSTITUTE does not assume responsibility for the conduct of the Project or any Institute-Funded Activity that is the subject of this Contract. The INSTITUTE and the RECIPIENT shall perform their respective obligations under this Contract as independent contractors and not as agents, employees, partners, joint venturers, or representatives of the other party. Neither party is permitted to make representations or commitments that bind the other party.

Section 2.08 Subcontracting. Any and all subcontracts entered into by the RECIPIENT in relation to the performance of activities under the Project shall be in writing and shall be subject to the requirements of this Contract. Without in any way limiting the foregoing, the RECIPIENT shall enter into and maintain a written agreement with each such permitted Contractor with terms and conditions sufficient to ensure the RECIPIENT fully complies with the terms of this Contract, including without limitation the terms set forth in Attachments C, D, and E. The RECIPIENT agrees that it shall be responsible to the INSTITUTE for the performance of and payment to any Contractor. Any reimbursements made by the RECIPIENT to a Contractor shall be made in accordance with the applicable provisions of TEX. GOV'T. CODE, Ch. 2251.

Section 2.09 Transfer or Assignment by the Recipient. This Contract is not transferable or otherwise assignable by the RECIPIENT, whether by operation of law or otherwise, without the prior written consent of the INSTITUTE, except as provided in this Section 2.09. Any such attempted transfer or assignment without the prior written consent of the INSTITUTE (except as provided in this Section 2.09) shall be null, void and of no effect. For purposes of this section, an assignment or transfer of this Contract by the RECIPIENT in connection with a merger, transfer or sale of all or substantially all of the RECIPIENT'S assets or business related to this Contract or a consolidation, change of control or similar transaction involving the RECIPIENT shall not be deemed to constitute a transfer or assignment, so long as such action does not impair or otherwise negatively impact the revenue sharing terms in Attachment D. Nothing herein shall be interpreted as superseding the requirement that the Project be undertaken in Texas with Texas-based employees.

If the Principal Investigator/Program Director leaves the employment of the RECIPIENT or is replaced by the RECIPIENT for any reason during the course of the Grant with someone who is not already designated a co-Principal Investigator/Program Director in Attachment A, the RECIPIENT shall notify the INSTITUTE prior to replacing the Principal Investigator/Program Director. Written approval by the INSTITUTE is required for the replacement of the Principal Investigator/Program Director with someone who is not already a co-Principal Investigator/Program Director in Attachment A, which approval shall not be unreasonably withheld, conditioned or delayed.

Section 2.10 Representations and Certifications. The RECIPIENT represents and certifies to the best of its knowledge and belief to the INSTITUTE as follows:

(a) It has legal authority to enter into, execute, and deliver this Contract, and all documents referred to herein, and it has taken all corporate actions necessary to its execution and delivery of such documents;

(b) It will comply with all of the terms, conditions, provisions, covenants, requirements, and certifications in this Contract, and all other documents incorporated herein by reference;

(c) It has made no material false statement or misstatement of fact in connection with this Contract and its receipt of the Grant, and all of the information it previously submitted to the INSTITUTE or that it is required under this Contract to submit to the INSTITUTE relating to the Grant or the disbursement of any of the Grant is and will be true and correct at the time such statement is made;

(d) It is in compliance in all material respects with provisions of its charter and of the laws of the State of Texas, and of the laws of the jurisdiction in which it was formed, and (i) there are no actions, suits, or proceedings pending, or threatened, before any judicial body or governmental authority against or affecting its ability to enter into this Contract, or any document referred to herein, or to perform any of the material acts required of it in such documents and (ii) it is not in default with respect to any order, writ, injunction, decree, or demand of any court or any governmental authority which would impair its ability to enter into this Contract,

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or any document referred to herein, or to perform any of the material acts required of it in such documents;

(e) Neither the execution and delivery of this Contract or any document referred to herein, nor compliance with any of the terms, conditions, requirements, or provisions contained in this Contract or any documents referred to herein, is prevented by, is a breach of, or will result in a breach of, any term, condition, or provision of any agreement or document to which it is now a party or by which it is bound; and

(f) It shall furnish such satisfactory evidence regarding the representations and certifications described herein as may be required and requested by the INSTITUTE from time to time.

Section 2.11 Reliance upon Representations. By awarding the Grant and executing this Contract, the INSTITUTE is relying, and will continue to rely throughout the term of this Contract, upon the truthfulness, accuracy, and completeness of the RECIPIENT's written assurances, certifications and representations. Moreover, the INSTITUTE would not have entered into this Contract with the RECIPIENT but for such written assurances, certifications and representations. The RECIPIENT acknowledges that the INSTITUTE is relying upon such assurances, certifications and representations and acknowledges their materiality and significance.

Section 2.12 Contingent upon Availability of Grant Funds. This Contract is contingent upon funding being available for the term of the Contract and the RECIPIENT shall have no right of action against the INSTITUTE in the event that the INSTITUTE is unable to perform its obligations under this Contract as a result of the suspension, termination, withdrawal, or failure of funding to the INSTITUTE or lack of sufficient funding of the INSTITUTE for this Contract. If funds become unavailable to the INSTITUTE during the term of the Contract, Section 8.01(c) shall apply. For the sake of clarity, and except as otherwise provided by this Contract, if this Contract is not funded, then both parties are relieved of all of their obligations under this Contract. The INSTITUTE acknowledges and agrees that the Project is a multiyear project subject to Tex. Health & Safety Code, Chr. 102, Section 102257.

Section 2.13 Confidentiality of Documents and Information. In connection with work contemplated for the Project or pursuant to complying with various provisions of this Contract, the RECIPIENT may disclose its confidential business, financial, technical, scientific information and other information

to the INSTITUTE ("Confidential Information"). To assist the INSTITUTE in identifying such information, the RECIPIENT shall mark or designate the information as "confidential," provided however that the failure to so designate does not operate as a waiver to protections provided by applicable law or this Contract. The INSTITUTE shall use no less than reasonable care to protect the confidentiality of the Confidential Information to the fullest extent permissible under the Texas Public Information Act, Texas Government Code, Chapter 552 (the "**TPIA**"), and, except as otherwise provided in the TPIA to prevent the disclosure of the Confidential Information to third parties for a period of time equal to three (3) years from the termination of the contract, unless the INSTITUTE and the RECIPIENT agree

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in writing to extend such time period, provided that this obligation shall not apply to information that:

(a) was in the public domain at the time of disclosure or later became part of the public domain through no act or omission of the INSTITUTE in breach of this Contract;

(b) was lawfully disclosed to the INSTITUTE by a third party having the right to disclose it without an obligation of confidentiality;

(c) was already lawfully known to the INSTITUTE without an obligation of confidentiality at the time of disclosure;

(d) was independently developed by the INSTITUTE without using or referring to the RECIPIENT's Confidential Information; or

(e) is required by law or regulation to be disclosed.

The INSTITUTE shall hold the Confidential Information in confidence, shall not use such Confidential Information except as provided by the terms of this Contract, and shall not disclose such Confidential Information to third parties without the prior written approval of the RECIPIENT or as otherwise allowed by the terms of the Contract. Subject in all respects to the terms of this Contract and the TPIA, the INSTITUTE has the right to use and disclose the Confidential Information reasonably in connection with the exercise of its rights under the Agreement.

In the event that the INSTITUTE is requested or required (by oral questions, interrogatories, requests for information or documents in legal proceedings, subpoena, civil investigative demand or other similar process by a court of competent jurisdiction or by any administrative, legislative, regulatory or self-regulatory authority or entity) to disclose any Confidential Information, the INSTITUTE shall provide the RECIPIENT with prompt written notice of any such request or requirement so that the RECIPIENT may seek a protective order or other appropriate remedy. If, in the absence of a protective order or other remedy, the INSTITUTE is nonetheless legally compelled to make any such disclosure of Confidential Information to any person, the INSTITUTE may, without liability hereunder, disclose only that portion of the Confidential Information that is legally required to be disclosed, provided that the INSTITUTE will use reasonable efforts to assist the RECIPIENT, at the RECIPIENT's expense, in obtaining an appropriate protective order or other reliable assurance that confidential treatment will be accorded the Confidential Information. To the extent that such Confidential Information does not become part of the public domain by virtue of such disclosure, it shall remain Confidential Information hereunder.

Article III
DISBURSEMENT OF GRANT AWARD PROCEEDS

Section 3.01 Payment of Grant Award Proceeds. The INSTITUTE will advance Grant award proceeds in an amount and schedule as provided in Attachment B.

Section 3.02 Allowable Expenses. The RECIPIENT shall use Grant proceeds only for allowable expenses consistent with applicable state law and agency administrative rules. Allowable expenses for the Project(s) shall be only as outlined in the Approved Budget and any modifications to same.

Section 3.03 Travel Expenses. Reimbursement for travel expenditures shall be in accordance with the Approved Budget. Prior written approval from the INSTITUTE must be obtained before travel that exceeds the amount included in the Approved Budget commences. Failure to obtain such prior written approval shall result in such excess travel costs constituting expenses that may not be taken into account for the purposes of calculating expenditure of Grant funds under this Contract.

Section 3.04 Budget Modifications. The total Approved Budget and the assignment of costs may be adjusted based on implementation of the Scope of Work, spending patterns, and unexpended funds, but only by an amendment to the Approved Budget. In no event shall an amendment to the Approved Budget result in payments in excess of the aggregate amount specified in Section 2.01 "Award of Monies" or in approved supplemental funding for the Project, if any. The RECIPIENT may make transfers between or among lines within budget categories without prior written approval provided that:

(a) The total dollar amount of all changes of any single line item within budget categories (individually and in the aggregate) is [***] of the total Approved Budget;

(b) The transfer will not increase or decrease the total Approved Budget;

(c) The transfer will not materially change the nature, performance level, or Scope of Work of the Project; and

(d) The RECIPIENT submits a revised copy of the Approved Budget including a narrative justification of the changes prior to incurring costs in the new category.

All other budget changes or transfers require the INSTITUTE's express prior written approval. Transfer of funds between categories in the Project's Approved Budget may be allowed if requests are in writing, fit within the Scope of Work and the total Approved Budget, are beneficial to the achievement of the objectives of the Project, and appear to be an efficient, effective use of the INSTITUTE'S funds.

Section 3.05 Withholding Payment. The INSTITUTE may withhold Grant award proceeds from the RECIPIENT if required Financial Status Reports (Form 269a) are not on file for previous quarters or for the final period, if material program requirements are not met and remain uncured after a reasonable

time period to cure, if the RECIPIENT is in breach of any material term of this Contract, or in accordance with provisions of this Contract as well as applicable state or federal laws, regulations or administrative rules, and the breach remains uncured after a reasonable time period to cure. The INSTITUTE shall have the right to withhold all or part of any future payments to the RECIPIENT to offset any prior advance payments made to the RECIPIENT for ineligible expenditures that have not been refunded to the INSTITUTE by the RECIPIENT

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Section 3.06 **Grant Funds as Supplement to Budget**. The RECIPIENT shall use the Grant proceeds awarded pursuant to this Contract to supplement its overall budget. These funds will in no event supplant existing funds currently available to the RECIPIENT that have been previously budgeted and set aside for the Project. The RECIPIENT will not bill the INSTITUTE for any costs under this Contract that also have been billed or should have been billed to any other funding source.

Section 3.07 **Buy Texas**. The RECIPIENT shall apply good faith efforts to purchase goods and services from suppliers in Texas to the extent reasonably possible, to achieve a goal of more than [***] of such purchases from suppliers in Texas.

Section 3.08 **Historically Underutilized Businesses**. The RECIPIENT shall use reasonable efforts to purchase materials, supplies or services from a Historically Underutilized Business (HUB). The Texas Procurement and Support Services website will assist in finding HUB vendors (http://www.window.state.tx.us/procurement.) The RECIPIENT shall complete a HUB report with each annual report submitted to the INSTITUTE in accordance with Attachment E.

Section 3.09 **Limitation on Use of Grant Award Proceeds to Pay Indirect Costs**. The RECIPIENT shall not spend more than [***] of the Grant award proceeds for Indirect Costs,

Section 3.10 **Carry Forward of Unspent Funds and No Cost Extension**. The RECIPIENT may carry forward unspent funds into the budget for the next year. Carryover of unspent funds in excess of [***] of the annual budget must be specifically approved in writing by the INSTITUTE. Upon request, the INSTITUTE may approve a no cost extension for the Contract for a period not to exceed [***] after the Termination Date so long as the Contract is in good fiscal and programmatic standing and additional time beyond the Termination date is required to ensure adequate completion of the approved project. All terms and conditions of the Contract shall continue during any extension period and if such extension is approved, notwithstanding Section 2.03, all references to the "Termination Date" shall be deemed to mean the date of expiration of such extension period.

Article IV
AUDITS AND INSPECTIONS

Section 4.01 **Record Keeping**. The RECIPIENT, each Collaborator and each Contractor whose costs are funded in all or in part by the Grant shall maintain or cause to he maintained books, records, documents and other evidence (electronic or otherwise) pertaining in any way to its performance under and compliance with the terms and conditions of this Contract ("**Records**"). The RECIPIENT, each Collaborator and each Contractor shall use, or shall cause the entity which is maintaining such Records to use generally accepted accounting principles in the maintenance of such Records, and shall retain or require to be retained all of such Records for a period of [***] from the Termination Date of the Contract.

Section 4.02 **Audits**. Upon request and with reasonable notice, the RECIPIENT, [***] shall allow, or shall cause the entity which is maintaining such items to allow, the INSTITUTE, or auditors working on behalf of the INSTITUTE, including the State Auditor and/or the Comptroller of Public Accounts for the State of Texas, to review, inspect, audit, copy or abstract

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all of its Records during regular working hours. Acceptance of funds directly under the Contract or indirectly through a subcontract under the Contract constitutes acceptance of the authority of the INSTITUTE, or auditors working on behalf of the INSTITUTE, including the State Auditor and/or the Comptroller of Public Accounts, to conduct an audit or investigation in connection with those funds for a period of [***] from the Termination Date of the Contract.

Notwithstanding the foregoing, any RECIPIENT expending $500,000 or more in federal or state awards during its fiscal year shall obtain either an annual single audit or a program specific audit. A RECIPIENT expending funds from only one federal program (as listed in the Catalog of Federal Domestic Assistance (CFDA) or one state program may elect to obtain a program specific audit in accordance with Office of Management and Budget (OMB) Circular A-133 or with the State of Texas Uniform Grant Management Standards (UGMS). A single audit is required if funds from more than one federal or state program are spent by the RECIPIENT. The audited time period is the RECIPIENT's fiscal year, not the INSTITUTE funding period.

Section 4.03 **Inspections**. In addition to the audit rights specified in Section 4.02 "Audits", the INSTITUTE shall have the right to conduct periodic onsite inspections within normal working hours and on a day and a time mutually agreed to by the parties, to evaluate the Institute-Funded Activity. The RECIPIENT shall fully participate and cooperate in any such evaluation efforts.

Section 4.04 **On-going Obligation to Submit Requested Information**. The RECIPIENT shall, submit other information related to the Grant to the INSTITUTE as may be reasonably requested from time-to-time by the INSTITUTE, by the Legislature or by any other funding or regulatory bodies covering the RECIPIENT's activities under this Contract.

Section 4.05 **Duty to Resolve Deficiencies**. If an audit and/or inspection under this Article IV finds there are deficiencies that should be remedied, then the RECIPIENT shall resolve and/or cure such deficiencies within a reasonable time frame specified by the INSTITUTE. Failure to do so shall constitute an Event of Default pursuant to Section 8.03 "Event of Default." Upon the RECIPIENT'S request, the parties agree to negotiate in good faith, specific extensions so that the RECIPIENT can cure such deficiencies.

Section 4.06 **Repayment of Grant Proceeds for improper Use**. In no event shall RECIPIENT retain Grant funds that have not been used by the RECIPIENT for purposes for which the Grant was intended or in violation of the terms of this Contract. The RECIPIENT shall repay any portion of Grant proceeds used by the RECIPIENT for purposes for which the Grant was not intended, as determined by the final results of an audit conducted pursuant to the provisions of this Contract. Unless otherwise expressly provided for in writing and appended to this Contract, the repayment shall be made to the INSTITUTE no later than forty-five (45) days upon a written request by the INSTITUTE specifying the amount to be repaid and detailing the basis upon which such request is being made and the amount shall include interest calculated at an amount not to exceed five percent (5%) annually. The RECIPIENT may request that the INSTITUTE waive the interest, subject in all cases to the INSTITUTE'S sole discretion.

Section 4.07 **Repayment of Grant Proceeds for Relocation Outside of Texas**. The RECIPIENT shall repay the INSTITUTE all Grant proceeds disbursed to RECIPIENT in the

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event that RECIPIENT [***] outside of the State during the Contract term or within [***] after the final payment of the Grant funds is made by the INSTITUTE.

Article V
ASSURANCES AND CERTIFICATIONS

Adoption of Attachment C. The INSTITUTE and the RECIPIENT hereby adopt the terms of Attachment C in their entirety, incorporate them as if fully set forth herein, and agree to perform and be bound by all such terms.

Article VI
INTELLECTUAL PROPERTY AND REVENUE SHARING

Adoption of Attachment D. The INSTITUTE and the RECIPIENT hereby adopt the terms of Attachment D in their entirety, incorporate them as if fully set forth herein, and agree to perform and be bound by all such terms.

Article VII
REPORTING

Adoption of Attachment E. The INSTITUTE and the RECIPIENT hereby adopt the terms of Attachment E in their entirety, incorporate them as if fully set forth herein, and agree to perform and be bound by all such terms.

Article VIII
EARLY TERMINATION AND EVENT OF DEFAULT

Section 8.01 **Early Termination of Contract**. This Contract may be terminated prior to the Termination Date specified in Section 2.03 "Contract Term" by:

(a) Mutual written consent of all parties to this Contract; or

(b) The INSTITUTE for an Event of Default (defined in Section 8.03) by the RECIPIENT; or

(c) The INSTITUTE if allocated funds should become legally unavailable during the Contract period and the INSTITUTE is unable to obtain additional funds for such purposes; or

(d) The RECIPIENT for convenience.

Section 8.02 **Repayment of Grant Proceeds upon Early Termination**. The INSTITUTE may require the RECIPIENT to repay any unused portion of the disbursed Grant proceeds in the event of early termination under 8.01 (d) above or under Section 8.01(b) above, to the extent such Event of Default resulted from Grant funds being expended in violation of this Contract. To the extent that the INSTITUTE exercises this option, the INSTITUTE shall provide written notice to the RECIPIENT stating the amount to be repaid, applicable interest calculated not to exceed [***] annually, and the schedule for such repayment. The RECIPIENT may request that

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the INSTITUTE waive the interest, subject in all cases to the INSTITUTE'S sole discretion. In no event shall the RECIPIENT retain Grant funds that have not been used by the RECIPIENT for purposes for which the Grant was intended.

Section 8.03 **Event of Default**. The following events shall, unless expressly waived in writing by the INSTITUTE or fully cured by the RECIPIENT pursuant to the provisions herein, constitute an event of default (each, an "**Event of Default**"):

(a) The RECIPIENT's failure, in any material respect, to conduct the Project in accordance with the approved Scope of Work and to demonstrate progress towards achieving the milestones set forth in Section 2.02;

(b) The RECIPIENT's failure to conduct the Project within the State of Texas to the extent required under this Contract unless as otherwise specified in the application, Scope of Work or Approved Budget;

(c) The RECIPIENT's failure to fully comply, in any material respect, with any provision, term, condition, covenant, representation, certification, or warranty contained in this Contract or any other document incorporated herein by reference;

(d) The RECIPIENT's failure to comply with any applicable federal or state law, administrative rule, regulation or policy with regard to the conduct of the Project;

(e) The RECIPIENT's material misrepresentation or false covenant, representation, certification, or warranty made by the RECIPIENT herein, in the Grant application, or in any other document furnished by the RECIPIENT pursuant to this Contract that was false or misleading at the time that it was made; or

(f) The RECIPIENT ceases its business operations, has a receiver appointed for all or substantially all of its assets, makes a general assignment for the benefit of creditors, is declared insolvent by a court of competent jurisdiction or becomes the subject, as a debtor, of a proceeding under the federal bankruptcy code, which such proceedings are not dismissed within ninety (90) days after filing.

Section 8.04 Notice Required. If the RECIPIENT intends to terminate pursuant to Section 8.01(d) "Early Termination of Contract", it shall provide written notice to the INSTITUTE pursuant to the notice provisions of Section 9.21 "Notices" no later than thirty (30) days prior to the intended date of termination.

If the INSTITUTE intends to terminate for an Event of Default under Section 8.01(b) by the RECIPIENT, as described in Section 8.03 "Event of Default", the INSTITUTE shall provide written notice to the RECIPIENT pursuant to Section 9.21 "Notices" and shall include a reasonable description of the Event of Default and, if applicable, the steps necessary to cure such Event of Default. Upon receiving notice from the INSTITUTE, the RECIPIENT shall have thirty (30) days beginning on the day following the receipt of notice to cure the Event of Default. Upon request, the INSTITUTE may provide an extension of time to cure the Event of Default(s) beyond the thirty (30) day period specified herein so long as the RECIPIENT is using reasonable

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efforts to cure and is making reasonable progress in curing such Event(s) of Default. The extension shall be in writing and appended to the Contract. If the RECIPIENT is unable or fails to timely cure an Event of Default, unless expressly waived in writing by the INSTITUTE, this Contract shall immediately terminate as of the close of business on the final day of the allotted cure period without any further notice or action by the INSTITUTE required. **In addition, and notwithstanding the foregoing, the INSTITUTE and the RECIPIENT agree that certain events that cannot be cured shall, unless expressly waived in writing by the INSTITUTE, constitute a final Event of Default under this Contract and this Contract shall terminate immediately upon the INSTITUTE giving the RECIPIENT written "Notice of Event of Default and FINAL TERMINATION."**

In the event that the INSTITUTE terminates the Contract under Section 8.01(c) above because allocated funds become legally unavailable during the Contract period, the INSTITUTE shall immediately provide written notification to the RECIPIENT of such fact pursuant to Section 9.21 "Notices." The Contract is terminated upon the RECIPIENT's receipt of that notification, subject to Section 9.09 "Survival of Terms."

Section 8.05 Duty to Report Event of Default. The RECIPIENT shall notify the INSTITUTE in writing pursuant to Section 9.21 "Notices", promptly and in no event more than (30) days after it obtains knowledge of the occurrence of any Event of Default. The RECIPIENT shall include a statement setting forth reasonable details of each Event of Default and the action which the RECIPIENT proposes to take with respect thereto,

Section 8.06 Obligations/Liabilities Affected by Early Termination. The RECIPIENT shall not incur new obligations that otherwise would have been paid for using Grant funds after the receipt of notice as provided by Section 3.04 "Notice Required", unless expressly permitted by the INSTITUTE in writing, and shall cancel as many outstanding obligations as possible. The INSTITUTE shall not owe any fee, penalty or other amount for exercising its right to terminate the Contract in accordance with Section 8.01. In no event shall the INSTITUTE be liable for any services performed, or costs or expenses incurred, after the Termination Date of the Contract. Early termination by either party shall not nullify obligations already incurred, including the RECIPIENT's revenue sharing obligations as set forth in Attachment D, or the performance or failure to perform obligations prior to the Termination Date.

Section 8.07 Interim Remedies. Upon receipt by the RECIPIENT of a notice of Event of Default, and at any time thereafter until such Event of Default is cured to the satisfaction of the INSTITUTE or this Contract is terminated, the INSTITUTE may enforce any or all of the following remedies (such rights and remedies being in addition to and not in lieu of any rights or remedies set forth herein):

(a) The INSTITUTE may refrain from disbursing any amount of the Grant funds not previously disbursed; provided, however, the INSTITUTE may make such a disbursement after the occurrence of an Event of Default without thereby waiving its rights and remedies hereunder;

(b) The INSTITUTE may enforce any additional remedies it has in law or equity.

The rights and remedies herein specified are cumulative and not exclusive of any rights or remedies that the INSTITUTE would otherwise possess.

Article IX
MISCELLANEOUS

Section 9.01 Uniform Grant Management Standards. Unless otherwise provided herein, the RECIPIENT agrees that the Uniform Grant Management Standards (UGMS), developed by the Governor's Budget and Planning Office as directed under the Uniform Grant Management Act of 1981, TEX. GOVT. CODE, Ch. 783, apply as additional terms and conditions of this Contract and that the standards are adopted by reference in their entirety, If there is a conflict between the provisions of this Contract and UGMS, the provisions of this Contract will prevail unless expressly stated otherwise.

Section 9.02 Management and Disposition of Equipment. During the term of this Contract, the RECIPIENT may use Grant funds to purchase Equipment to be used for the authorized purpose of the Project, subject to the conditions set forth below. Unless otherwise provided herein, title to Equipment shall vest in the RECIPIENT upon termination of the Contract.

(a) The INSTITUTE must authorize the acquisition in advance and in writing but an acquisition is deemed authorized if included in the Approved Budget for the Project;

(b) Equipment purchased with Grant funds must stay within the State of Texas;

(c) Equipment purchased with Grant funds must be materially deployed to the uses and purposes related to the Project;

(d) In the event the RECIPIENT is indemnified, reimbursed or otherwise compensated for any loss of, destruction of, or damage to the Equipment purchased using Grant funds, it shall use the proceeds to repair or replace said Equipment;

(e) Equipment may be exchanged (trade-in) or sold without the prior written approval of the INSTITUTE if the proceeds thereof shall he applied to the acquisition cost of replacement Equipment;

(f) The RECIPIENT may use its own property management standards and procedures provided that it observes the terms of UGMS, A-102, in all material respects;

(g) The title or ownership of the Equipment shall not be encumbered for purposes other than the Project nor or transferred other than to a permitted assignee of this Contract without the prior written approval of the INSTITUTE;

(h) If the original or replacement Equipment is no longer needed for the originally authorized purpose or for other activities supported by the INSTITUTE, the RECIPIENT shall request disposition instructions from the INSTITUTE and, upon receipt, shall fully comply therewith; and

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(i) If this Contract is terminated early pursuant to Section 8.01(b),(d), (e) or (f) above, the INSTITUTE shall determine the final disposition of Equipment purchased with Grant award money.

Section 9.03 Supplies and Other Expendable Property. The RECIPIENT shall classify as materials, supplies and other expendable property the allowable unit acquisition cost of such property under [***] necessary to carry out the Project. Title to supplies and other expendable property shall vest in the RECIPIENT upon acquisition.

Section 9.04 Acknowledgement of Grant Funding and Publicity. The parties agree to the following terms and conditions regarding acknowledging Grant funding and publicity:

(a) The parties agree to fully cooperate and coordinate with each other in connection with all press releases and publications regarding the award of the Grant, the execution of the Contract and the Institute-Funded Activities.

(b) The RECIPIENT shall notify the INSTITUTE's Information Specialist or similar personnel at least three business days prior to any press releases, advertising, publicity, use of CPRIT logo, or other promotional activities that pertain to the Project or any Institute-Funded Activity. In the event that the INSTITUTE wishes to participate in a joint press release, the RECIPIENT shall coordinate and cooperate with the INSTITUTE's Information Specialist or similar personnel to develop a mutually agreeable joint press release.

(c) Consistent with the goal of encouraging development of scientific breakthroughs and dissemination of knowledge, publication or presentation of scholarly materials is expected and encouraged. The RECIPIENT may publish in scholarly journals or other peer-reviewed journals (including graduate theses and dissertations) and may make presentations at scientific meetings without prior notice to or consent of the INSTITUTE, except as may otherwise be set forth in this Contract. The RECIPIENT shall promptly notify the INSTITUTE when any scholarly presentations or publications have been accepted for public disclosure and shall provide the INSTITUTE with final copies of all such accepted presentations and publications. The RECIPIENT shall acknowledge receipt of the INSTITUTE funding in all publications, presentations, press releases and other materials regarding the work associated with the Institute-Funded Activities. The RECIPIENT shall promptly submit an electronic version of all published manuscripts to PubMed Central in accordance with Section 9.05 "Public Access to Research Results."

(d) When grant funds are used to prepare print or visual materials for educational or promotional purposes for the general public (e.g., patients), and excluding presentations and publications discussed above in subsection (c), the RECIPIENT shall provide a copy of such materials to the INSTITUTE at least ten (10) days prior to printing. The RECIPIENT shall also acknowledge receipt of the INSTITUTE funding on all such materials including, but not limited to, brochures, pamphlets, booklets, training fliers, project websites, videos and

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DVDs, manuals and reports, as well as on the labels and cases for audiovisual or videotape/DVD presentations.

Section 9.05 Public Access to Results of Institute-Funded Activities. The RECIPIENT shall submit an electronic version of its final peer-reviewed journal manuscripts that arise from Grant funds to the digital archive National Library of Medicine's PubMed Central upon acceptance for publication. These papers must be accessible to the public on PubMed no later than 12 months after publication. This policy is subject to the terms of Attachment D and does not supplant applicable copyright law. For clarity, this policy is not intended to require the RECIPIENT to make a disclosure at a time or in any manner that would cause the RECIPIENT to abandon, waive or disclaim any intellectual property rights that it is obligated to protect pursuant to the terms of Attachment D.

Section 9.06 Work to be Conducted in State. The RECIPIENT agrees that it will use reasonable efforts to direct that any new or expanded preclinical testing, clinical trials, commercialization or manufacturing that is part of or relating to any Institute-Funded Activities take place in the State of Texas,

including the establishment of facilities to meet this purpose. If the RECIPIENT decides not to conduct such work in the State of Texas, the RECIPIENT shall provide a prior written explanation to the INSTITUTE detailing the RECIPIENT's reasons for conducting the work outside of the State of Texas and the RECIPIENT's efforts made to conduct the work in the State of Texas

Section 9.07 Duty to Notify. During the term of this Contract and for a period of [***] thereafter, the RECIPIENT is under a continuing obligation to notify the INSTITUTE's executive director at the same time it is required to notify any Federal or State entity of any unexpected adverse event or condition that materially impacts the performance or general public perception of the conduct or results of the Project and the Institute-Funded Activities, including any impact to the Scope of Work included in the Contract and events or results that have a serious adverse impact on human health, safety or welfare. By way of example only, if clinical testing of the results of the Institute-Funded Activities reveal an unexpected risk of developing serious health conditions or death, then the RECIPIENT shall, at the same time it notifies any Federal or State entity, promptly so notify the INSTITUTE's executive director even if such results are not available until after the term of this Contract. Notice required under this section shall be made as promptly as reasonably possible and shall follow the procedures set forth in Section 9.21 "Notices."

Section 9.08 Severability. If any provision of this Contract is construed to be invalid, illegal or unenforceable in any respect, such invalidity, illegality or enforceability shall not affect any other provisions hereof. The invalid, illegal or unenforceable provision shall be deemed stricken and deleted to the same extent and effect as if never incorporated herein. All other provisions shall continue as provided in this Contract.

Section 9.09 Survival of Terms. Termination or expiration of this Contract for any reason will not release either party from any liabilities or obligations set forth in this Contract that: (1) the Parties have expressly agreed shall survive any such termination or expiration; or (2) remain to be performed or by their nature would be intended to be applicable following any such termination or expiration. Such surviving terms include, but are not limited to,

[***] Certain information in this document has been omitted and filed separately with the Securities and Exchange Commission. Confidential treatment has been requested with respect to the omitted portions.

Sections 2.13, 4.01, 4.02, 4.05, 4.06, 8.02, 8.06, 9.04, 9.05, 9.06, 9.07, 9.09, 9.14, 9.15, 9.16, 9.17, 9.18, and Attachment D.

Section 9.10 Binding Effect and Assignment or Modification. This Contract and all terms, provisions and obligations set forth herein shall he binding upon and shall inure to the benefit of the parties and their successors and permitted assigns, including all other state agencies and any other agencies, departments, divisions, governmental entities, public corporations or other entities which shall be successors to either of the parties or which shall succeed to or become obligated to perform or become bound by any of the covenants, agreements or obligations hereunder of either of the parties hereto. Upon a permitted assignment of this Contract by RECIPIENT, all references to "the RECIPIENT" herein shall be deemed to refer to such permitted assignee.

Section 9.11 No Waiver of Contract Terms. Neither the failure by the RECIPIENT or the INSTITUTE, in any one or more instances, to insist upon the complete and total observance or performance of any term or provision hereof, nor the failure of the RECIPIENT or the INSTITUTE to exercise any right, privilege or remedy conferred hereunder or afforded by law, shall be construed as waiving any breach of such term or provision or the right to exercise such right, privilege or remedy thereafter. In addition, no delay on the part of either the RECIPIENT or the INSTITUTE, in exercising any right or remedy hereunder shall operate as a waiver thereof, nor shall any single or partial exercise of any right or remedy preclude other or further exercise thereof or the exercise of any other right or remedy.

Section 9.12 No Waiver of Sovereign Immunity. No provision of this Contract is in any way intended to constitute a waiver by the INSTITUTE, the RECIPIENT (if applicable), or the State of Texas of any immunities from suit or from liability that the INSTITUTE, the RECIPIENT, or the State of Texas may have by operation of law.

Section 9.13 Force Majeure. Neither the INSTITUTE nor the RECIPIENT will be liable for any failure or delay in performing its obligations under the Contract if such failure or delay is due to any cause beyond the reasonable control of such party, including, but not limited to, unusually severe weather, strikes, natural disasters, fire, civil disturbance, epidemic, war, court order or acts of God. The existence of such causes of delay or failure will extend the period of performance in the exercise of reasonable diligence until after the causes of delay or failure have been removed. Each party must inform the other in accordance with Section 9.21 "Notices" within five (5) business days, or as soon as it is practical, of the existence of a force majeure event or otherwise waive this right as a defense.

Section 9.14 Disclaimer of Damages. IN NO EVENT WILL EITHER PARTY BE GABLE TO THE OTHER PARTY FOR ANY INDIRECT, SPECIAL, PUNITIVE, EXEMPLARY, INCIDENTAL OR CONSEQUENTIAL DAMAGES. THIS LIMITATION WILL APPLY REGARDLESS OF WHETHER OR NOT THE OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

Section 9.15 Indemnification and Hold Harmless. Except as provided herein, the RECIPIENT agrees to fully indemnify and hold the INSTITUTE and the State of Texas harmless from and against any and all claims, demands, costs, expenses, liabilities, causes of action and

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damages of every kind and character (including reasonable attorneys fees) which may be asserted by any third party in any way related or incident to, arising out of, or in connection with (1) the RECIPIENT's negligent, intentional or wrongful performance or failure to perform under this Contract, (2) the RECIPIENT's receipt or use of Grant funds, or (3) any negligent, intentional or wrongful act or omission committed by the RECIPIENT as part of an Institute-Funded Activity or during the Project. In addition, the RECIPIENT agrees to fully indemnify and hold the INSTITUTE and the State of Texas harmless from and against any and all costs and expenses of every kind and character (including reasonable attorneys fees, costs of court and expert fees) that are incurred by the INSTITUTE or the State of Texas arising out of or related to a third party claim of the type specified in the preceding sentence. Notwithstanding the preceding, such indemnification shall not apply in the event of the sole or gross negligence of the INSTITUTE. If the RECIPIENT is a State of Texas agency or institution of higher education, then this Section 9.15 is subject to the extent authorized by the Texas Constitution and the laws of the State of Texas.

The RECIPIENT acknowledges and agrees that this indemnification shall apply to, but is not limited to, employment matters, taxes, personal injury, and negligence.

It is understood and agreed that it is not the intent of the parties to expand or increase the liability of the State of Texas under this Article. This provision is intended to prevent the RECIPIENT, the INSTITUTE and the State of Texas from attempting or appearing to assume liability it does not have the statutory or legal power to assume.

Section 9.16 Alternative Dispute Resolution. If applicable, the dispute resolution process provided for in TEX. GOVT. CODE, Ch. 2260 shall be used, as further described herein, to resolve any claim for breach of contract made against the INSTITUTE (excluding any uncured Event of Default). The submission, processing and resolution of a party's claim are governed by the published rules adopted by the Attorney General pursuant to TEX. GOVT. CODE, Ch. 2260, as currently effective, hereafter enacted or subsequently amended.

Section 9.17 Applicable Law and Venue. This Contract shall be construed and all disputes shall be considered in accordance with the laws of the State of Texas, without regard to its principles governing the conflict of laws. Provided that the RECIPIENT first complies with procedures set forth in Section 9.16 "Alternative Dispute Resolution," exclusive venue and jurisdiction for the resolution of claims arising from or related to this Contract shall be in the federal and state courts in Travis County, Texas.

Section 9.18 Attorneys' Fees. In the event of any litigation, appeal or other legal action to enforce any provision of the Contract, the RECIPIENT shall pay [***], if the INSTITUTE is the prevailing party. If the RECIPIENT is a State of Texas agency or institution of higher education, then this Section 9.18 is subject to the extent authorized by the Texas Constitution and the laws of the State of Texas.

Section 9.19 Counterparts. This Contract may be executed in any number of counterparts, each of which when so executed and delivered shall be an original, but such counterparts shall together constitute one and the same instrument.

[***] Certain information in this document has been omitted and filed separately with the Securities and Exchange Commission. Confidential treatment has been requested with respect to the omitted portions.

Section 9.20 Construction of Terms. The headings used in this Contract are inserted only as a matter of convenience and for reference and shall not affect the construction or interpretation of this Contract, Where context so indicates, a word in the singular form shall include the plural, a word in the masculine form the feminine, and vice-versa. The word "including" and similar constructions (such as "includes", "included", "for example", "such as", and "e.g.") shall mean "including, without limitation" throughout this Contract. The words "and" and "or" are not intended to convey exclusivity or nonexclusivity except where expressly indicated or where the context so indicates in order to give effect to the intent of the parties.

Section 9.21 Notices. All notices, requests, demands and other communications will be in writing and will be deemed given on the date received as demonstrated by (i) a courier's receipt or registered or certified mail return receipt signed by the party to whom such notice was sent, provided that such notice was sent to the address required by this Section, or (ii) a fax confirmation page showing that such fax was successfully transmitted to the fax number required by this Section. Notices shall be sent to the parties at the addresses or fax numbers specified below or as may be updated from time to time by the applicable party in a writing delivered to the other party pursuant to the terms of this Section.

If to the INSTITUTE to:

Cancer Prevention and Research Inst. of Texas
Grant Compliance
PO Box 12097
Austin, TX 78711

Phone: 512-463-3190
Fax: 512-475-2563

With a copy to:

Cancer Prevention and Research Inst. of Texas
General Counsel
PO Box 12097
Austin, TX 78711

Physical location for hand/overnight deliveries:
211 E. Seventh Street, Suite 300
Austin, Texas 78701

If to the RECIPIENT to:

[***]
(Individual to Receive Notice)
2150 Woodward, Suite 100
(Mailing Address)
Austin, TX 78744
(City, State, Zip)

Phone: (512) 681-5200

Physical location for hand/overnight deliveries
(if different):

With a copy to:
General Counsel
Mirna Therapeutics
21150 Woodward, Suite 100
Austin, Texas 78744

Fax: (512) 681-5201

[***] Certain information in this document has been omitted and filed separately with the Securities and Exchange Commission. Confidential treatment has been requested with respect to the omitted portions.

EXECUTED IN DUPLICATE ORIGINALS ON THE DATES INDICATED.

RECIPIENT	**INSTITUTE**
By /s/ Paul Lammers (Signature of Person Authorized to Sign Contracts)	By /s/ William Gimson
Name: Dr. Paul Lammers	Name: William "Bill" Gimson, Executive Director

Date: 08/31/2010 Date: August 1, 2010

RP101219
Ana Ward

ATTACHMENT A

Project Description Summary

The overall goal of the project is to generate clinical data in support of the concept of microRNA Replacement Therapy in patients with advanced solid cancers, which would form the basis for the ultimate development of a new, innovative class of targeted and effective cancer therapies.

Project Co-Directors:
[***]
[***]
Mirna Therapeutics Mirna Therapeutics

Project Goals and Timelines

Aim 1: [***]		
Milestone(s): [***]		
Estimated Budget:	**$**	**[***]**
Aim 2: [***]		
Milestone(s): [***]		
Estimated Budget:	**$**	**[***]**
· Aim 3: [***]		
Milestone(s): [***]		
Estimated Budget:	**$**	**[***]**
· Aim 4: [***]		
Milestone(s): [***]		
Estimated Budget:	**$**	**[***]**
· Aim 5: [***]		
Milestone(s): [***]		
Estimated Budget:	**$**	**[***]**

[***] Certain information in this document has been omitted and filed separately with the Securities and Exchange Commission. Confidential treatment has been requested with respect to the omitted portions.

Application ID: RP101219
Principal Investigator/Program Director: Ana Ward

ATTACHMENT B
Detailed Budget Form

BUDGET CATEGORY	Year 1	Year 2	Year 3	TOTAL
[***]	[***]	[***]	[***]	[***]
Grand TOTAL	[***]	[***]	[***]	$ 10,297,454.00

Texas/Federal Vendor ID#: 264824804
Fiscal Contact: Lynne Hohlfeld
Address: 2150 Woodward, Suite 100
Address 2: Austin, TX 78744

Phone: 512.681.5252
Fax: 512.681.5201
Email: ihohlfeld@mirnarx.com

[***] Certain information in this document has been omitted and filed separately with the Securities and Exchange Commission. Confidential treatment has been requested with respect to the omitted portions.

ATTACHMENT C

ASSURANCES AND CERTIFICATIONS

This Attachment C is hereby incorporated into and made a part of that certain **CANCER RESEARCH GRANT CONTRACT** ("**Contract**") by and between the Cancer Prevention and Research Institute of Texas ("**CPRIT**" or the "**INSTITUTE**") and the RECIPIENT. A capitalized term used in this Attachment shall have the meaning given to term in the Contract or in the Attachments to the Contract, unless otherwise defined herein. In the event of a conflict between the provisions of this Attachment and the provisions of the Contract, this Attachment shall control. Notwithstanding any other provision of this Attachment C, each reference to "compliance" in the foregoing certifications and assurances shall mean "compliance in all material respects" and the RECIPIENT shall be deemed to be in compliance with a law, regulation or policy identified in a particular certification or assurance specified in this Attachment C if the RECIPIENT is in compliance in all materials respects with such law, regulation or policy, as applicable.

By signing this Contract, RECIPIENT certifies compliance with the following assurances and certifications required by the INSTITUTE (listed below). RECIPIENT further acknowledges that its obligations pursuant to the following assurances and certifications are ongoing.

Section C1.01 Demonstration of Matching Funds. Pursuant to TEX. HEALTH & SAFETY CODE § 102.255(d) and T.A.C. § 703.11, RECIPIENT has an amount of funds equal to [***] of the amount of the Grant to be disbursed each fiscal year of the Contract term dedicated to the same area of cancer research that is the subject of the Grant as demonstrated by the form incorporated herein to Attachment C. The RECIPIENT shall update the matching funds certification annually for each fiscal year that Grant funds are disbursed. The update must be on or before the anniversary of the Effective Date.

Section C1.02 Payment of Taxes. RECIPIENT's payment of franchise taxes is current or, if the RECIPIENT is exempt from payment of franchise taxes, that it is not subject to the State of Texas franchise tax. If franchise tax payments become delinquent during the Contract term, payments under this Contract may, upon delivery of written notice by the INSTITUTE to the RECIPIENT be withheld until the RECIPIENT's delinquent franchise tax is paid in full. The RECIPIENT also acknowledges that it is not otherwise exempt from state sales or occupancy tax as a result of this Contract.

Section C1.03 Compliance with Confidentiality Guidelines Relating to Personal and Medical Information. RECIPIENT complies with all applicable laws, rules and regulations relating to personal and medical information. Without in any way limiting the foregoing, RECIPIENT maintains and enforces, to the extent applicable to RECIPIENT, appropriate facility and information technology access rules and procedures to protect against inappropriate disclosure of patient records and all other documents containing patient personal and medical information deemed confidential by law, which are maintained in connection with the Project and Institute-Funded Activities, including provisions that comply with the requirements of the INSTITUTE's rules, 25 T.A.C. Section 703.14. Upon request from the INSTITUTE,

[***] Certain information in this document has been omitted and filed separately with the Securities and Exchange Commission. Confidential treatment has been requested with respect to the omitted portions.

RECIPIENT will timely furnish a copy of the RECIPIENT's facility and information technology access rules and procedures, as well as any other applicable confidentiality guidelines.

If RECIPIENT, including any Collaborators or Contractors, works directly with patients or otherwise has access to or maintains patient personal and medical information, RECIPIENT specifically addresses Health Insurance Portability and Accountability Act of 1996 regulations concerning confidentiality of personal and medical information. Any disclosure of patient confidential information in any way related to the Project (including information that may be required by reports and inspections) must be in accordance with all applicable laws.

Section C1.04 Conduct of Research or Service Provided. RECIPIENT understands that the Project must be conducted with full consideration for the ethical and medical implications of the research performed or services delivered and comply with all applicable federal and state laws regarding the conduct of the research or service.

Section C1.05 Regulatory Certificates, licenses and Permits. All of the RECIPIENT's personnel, facilities and equipment involved or to be involved in the Project are certified, licensed, permitted, registered or approved by the appropriate regulating agency, where applicable. Any revocation, surrender, expiration, non-renewal, inactivation or suspension of any such certification, license, permit, registration or approval shall constitute grounds for Contract termination if the same is not remedied (or alternative personnel, facilities and/or equipment identified, as applicable, for use in the Project) within the applicable cure period specified in Section 8.04.

Section C1.06 Assurances and Certifications in Accordance with the NIH *Grants Policy Statement*:

(a) Civil Rights. Compliance with Title VI of the Civil Rights Act of 1964.

(b) Handicapped Individuals. Compliance with Section 504 of the Rehabilitation Act of 1973 as amended.

(c) Sex Discrimination. Compliance with Section 901 of Title IX of the Education Amendments of 1972 as amended.

(d) Age Discrimination. Compliance with the Age Discrimination Act of 1975, as amended.

(e) Patents, Licenses and Inventions. Compliance with the Standard Patent Rights clauses as specified in 37 CFR, Part 401 or 35 U.S.C. 203, if appropriate and applicable, in a manner that adequately protects the INSTITUTE'S rights in the Project Results.

(f) Human Subjects. Compliance with the requirements of federal policy concerning the safeguarding of the rights and welfare of human subjects who are involved in activities supported by federal funds. Before any funding may be utilized for any portion of the Project involving human subjects, RECIPIENT must receive approval from RECIPIENT's Institutional Review Board (IRB). Upon request, a copy of RECIPIENT's IRB approval must be provided to the INSTITUTE.

(g) Human Biological/Anatomical Material. Compliance with the recommendations of the NIH Office of Human Subject Research Medical Administrative Series (MAS) #M01-2 entitled "Procurement and Use of Human Biological Materials for Research," and any other applicable federal or state requirements pertaining; to the procurement and use of human biological material for research.

(h) Use of Animals. Compliance with applicable portions of the Animal Welfare Act (PL 89-544 as amended) and appropriate Public Health Service Policy on Humane Care and Use of Laboratory Animals regulations. Before any funding may be utilized for any portion of the Project involving animal subjects, RECIPIENT must receive approval from RECIPIENT's Institutional Animal Care and Use Committee (IACUC). Upon request, a copy of RECIPIENT's IACUC approval must be provided to the INSTITUTE.

(i) Debarment and Suspension. RECIPIENT certifies that neither it nor the Principal Investigator/Project Director or any other Recipient Personnel or personnel of any Collaborator or Contractor assigned to work on the Project are debarred, suspended, proposed for debarment, declared ineligible or otherwise excluded from participation in the Project by any federal or state department or agency.

(j) Non-Delinquency on Federal or State Debt. RECIPIENT certifies that neither it, nor, to its knowledge, any person to be paid from funds under this Contract, is delinquent in repaying any Federal debt as defined by OMB Circular A-129 or any debt to the State of Texas.

(k) Eligibility to Receive Payments on State Contracts. RECIPIENT certifies that it and, to its knowledge, the Principal Investigator/Project Director are not ineligible to receive the Grant award under this Contract pursuant to Tex. Fam. Code Ann. Section 231.006 and acknowledges that this Contract may be terminated and payment may be withheld if this certification is inaccurate.

(l) Drug-Free Workplace. Compliance with the Drug-Free Workplace Act of 1988 (45 CFR 82).

(m) Misconduct in Science. Compliance with 42 CFR Part 50, Subpart A, and Final Rule as published at 54 CFR 32446, August 8, 1989.

(n) Objectivity of Research/Conflict of Interest. Compliance with the NIH requirement to maintain a written standard of conduct and comply with 42 CFR Part 50, Subpart F, Responsibility of Applicants for Promoting Objectivity in Research. RECIPIENT must notify the INSTITUTE of any conflicting financial interests pertaining to the performance of the Project and assure that such conflict of interest has been appropriately managed, reduced or eliminated.

(o) Trafficking in Persons. Compliance with the NIH regulations on trafficking in persons as published at http://grants.nih.gov/grants/guidefnotice-files/NOT-OD-08-055.html.

(p) Criminal Misconduct. RECIPIENT shall promptly report to the INSTITUTE issues involving potential civil or criminal fraud related in any way to the Project, the Institute-Funded Activity or this Contract, such as false claims or misappropriation of federal or state funds.

ATTACHMENT C
CPRIT Matching Requirement Certification Form

FOR: Mirna Therapeutics, Inc.
Entity/Institution Name

Research Category identified by CPRIT	Award Year #1 Total CPRIT Awards	Award Year #1 Entity's/ Institution's Dedicated Funds	Award Year #2 Total CPRIT Awards	Award Year #2 Entity's/ Institution's Dedicated Funds	Award Year #3 Total CPRIT Awards	Award Year #3 Entity's/ Institution's Dedicated Funds
[***]						
Total	[***]	[***]	[***]	[***]	[***]	[***]
Total non-state funds leveraged as a match for award.		[***]		$		$

The information above is the Institution's demonstration of available funds pursuant to its certification in Attachment C.

For questions regarding this form, please contact [***].

[***] Certain information in this document has been omitted and filed separately with the Securities and Exchange Commission. Confidential treatment has been requested with respect to the omitted portions.

ATTACHMENT D

INTELLECTUAL PROPERTY AND REVENUE SHARING

This Attachment D is hereby incorporated into and made a part of that certain **CANCER RESEARCH GRANT CONTRACT** ("**Contract"**) by and between the Cancer Prevention and Research Institute of Texas ("**CPRIT**" or the "**INSTITUTE**") and the RECIPIENT. A capitalized term used in this Attachment shall have the meaning given the term in the Contract or in the Attachments to the Contract, unless otherwise defined herein. In the event of a conflict between the provisions of this Attachment and the provisions of the Contract, this Attachment shall control.

PART 1
OWNERSHIP AND INTELLECTUAL PROPERTY PROTECTION

Section D1.01 Ownership of Project Results. RECIPIENT and its Collaborators shall retain ownership of the Institute-Funded Technology and the Institute-Funded IPR, subject to the terms of the Contract.

Section D1.02 Transfer or Assignment of Rights to a Third Party. RECIPIENT shall notify the INSTITUTE of any proposed transfer or assignment of rights in any Institute-Funded IPR to a third party. RECIPIENT shall ensure that, in any assignment or transfer of Institute-Funded IPR, the transferee or assignee agrees in writing to (i) recognize that the Institute-Funded IPR is transferred or assigned subject to the licenses, interests and other rights in such Institute-Funded IPR provided to the INSTITUTE in the Contract and any applicable law or regulation, and (ii) take all actions necessary to protect all such licenses, interests and other rights.

Section D1.03 Protection of Institute-Funded IPR. Subject to Section D5.01 RECIPIENT shall use commercially reasonable efforts to appropriately protect the institute-Funded IPR, including without limitation, diligently seeking registration of patents and copyrights covering the Institute-Funded Technology, as appropriate. If RECIPIENT elects to abandon Institute-Funded IPR (including any partial abandonment of Institute-Funded IPR in specific territories), RECIPIENT shall provide the INSTITUTE with prior written notice of such election, with sufficient time (but no less than 30 days) for the INSTITUTE to exercise its rights in Section D5.01 in relation to the subject Institute-Funded IPR.

Section D1.04 Cost of Protection. The INSTITUTE shall not be responsible for, and no Grant funds may be used to pay for, any costs or expenses associated with [***].

Section D1.05 Inventions.

(a) **Disclosures**. RECIPIENT shall notify INSTITUTE of each Institute-Funded Invention by delivering a copy of the invention disclosure form (or similar document) within [***] after RECIPIENT receives the form from its Inventor. In the event that the invention disclosure form is revised or updated, RECIPIENT shall provide the INSTITUTE with the revised/updated invention disclosure form as part of the RECIPIENT's annual written report.

[***] Certain information in this document has been omitted and filed separately with the Securities and Exchange Commission. Confidential treatment has been requested with respect to the omitted portions.

(b) **Patent Prosecution and Maintenance**. For all Institute-Funded Inventions for which patent protection is pursued, RECIPIENT shall provide an annual written report to the INSTITUTE regarding the status of pending applications and issued patents .

Section D1.06 Required Agreements with Recipient Personnel and Contractors. The RECIPIENT shall have, maintain and enforce written policies or agreements applicable to Recipient Personnel and Contractors with terms sufficient to enable RECIPIENT to fully comply with all terms and conditions of this Contract. RECIPIENT shall promptly report to INSTITUTE any material breach of such policies or agreements relating to or affecting any of the material provisions of this Contract.

Section D1.07 Agreements with Collaborators. All agreements between RECIPIENT and a Collaborator relating to or affecting joint ownership of any Project Result shall recognize the licenses, interests and other rights provided to the INSTITUTE in the Contract. RECIPIENT shall provide to the INSTITUTE a copy of each such agreement affecting joint ownership of any Project Result.

PART 2
NON-COMMERCIAL LICENSES

Section D2.01 RECIPIENT License. In granting an Exclusive License to any Project Result, RECIPIENT shall retain the right to Exploit all Project Results (including material embodiments thereof) for education, research and other non-commercial purposes, and the right to grant the licenses pursuant to Section D2.02 below.

Section D2.02 INSTITUTE License. RECIPIENT agrees to grant, and does hereby grant, to the INSTITUTE a non-exclusive, irrevocable, royalty-free, perpetual, worldwide license under the Institute-Funded IPR to Exploit all Project Results (including material embodiments thereof) for or on behalf of the

INSTITUTE and other governmental entities and agencies of the State of Texas for education, research and other non-commercial purposes only. RECIPIENT shall make the Institute-Funded Technology available by reasonable means to the INSTITUTE in order for the INSTITUTE to exercise its rights under this Section. The INSTITUTE may not transfer or sublicense the licenses granted under this Section, except to the State of Texas or other Texas agency.

Section D2.03 No Implied Licenses. No implied licenses are granted under this Agreement including any license to any Intellectual Property Rights owned or controlled by RECIPIENT outside of the Institute-Funded IPR. Nothing in this Agreement shall be construed to impose an obligation on RECIPIENT to license or otherwise make available any of its Intellectual Property Rights or other resources owned or controlled by it except as expressly provided in this Agreement with respect any Institute Funded IPR.

PART 3
COMMERCIALIZATION OF PROJECT RESULTS

Section D3.01 Commercialization Strategy. RECIPIENT shall be under a continuing obligation throughout the term of this Contract to enhance and improve the commercial development plan submitted with the Application and to provide an annual written report to the

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INSTITUTE regarding the RECIPIENT's efforts to commercialize or otherwise bring to practical application Project Results. The INSTITUTE may, at its option and at any time, provide RECIPIENT with comments regarding the RECIPIENT's commercial development plan and strategy, in which case RECIPIENT shall consider in good faith and use reasonable efforts to account for and incorporate the INSTITUTE's input into such commercial development plan and strategy.

Section D3.02 Commercialization Efforts. The RECIPIENT shall, whether through its own efforts or the efforts of a licensee under a License Agreement allowed by the terms of this Attachment, use diligent and commercially reasonable efforts to commercialize or otherwise bring to practical application the Project Results in accordance with the commercial development plan described in Section D3.01.

Section D3.03 Licensing of Project Results. Each License Agreement entered into by the RECIPIENT shall include an acknowledgement by the licensee that (i) such License Agreement is subject to the INSTITUTE's licenses, interests and other rights under this Contract, and (ii) to the extent that there is a conflict between the terms of the License Agreement and the terms of this Contract, the terms of this Contract shall prevail. In addition, all License Agreements shall include terms obligating the licensee to report to the RECIPIENT such information as is required for the RECIPIENT to fully comply with the terms of the Contract, including without limitation the reporting obligations set forth in Attachment E, and to allow RECIPIENT to make the grants specified in Sections D2.02. The RECIPIENT shall monitor the performance of its licensees and such licensees' compliance with the terms of the License Agreements and shall take commercially reasonable actions to enforce the terms of all License Agreements. The RECIPIENT shall promptly report to the INSTITUTE any material breach of a License Agreement relating to or affecting any of the material provisions of this Contract.

Section D3.04 Cost of [***]. The INSTITUTE shall not be responsible for, and no Grant funds may be used to pay for, any costs or expenses associated with the RECIPIENT's [***].

Section D3.05 Survival. The licenses, rights and obligations set forth in this Attachment D shall survive any termination of this Contract, including any termination for convenience by RECIPIENT, except in the event that RECIPIENT pays the Buyout Amount as set forth in Part 4, in which case the licenses, rights and obligations set forth in this Attachment D shall automatically terminate..

Section D3.06 Recipient Opt-Out. RECIPIENT may, after diligently attempting to comply with the terms of Section D3.02, notify the INSTITUTE in writing that it is electing to cease its efforts, either directly or through a licensee, to commercialize or otherwise bring to practical application any particular Project Results. Such written notice must identify the applicable Project Results, provide a reasonable explanation of the reasons for RECIPIENT's election, including any feasibility studies, trial results, regulatory impediments, financial analyses or similar assessments, and must identify any deadlines in relation to the applicable Project. Results that then exist. Upon receipt of such notice, the INSTITUTE shall have the option, but not the obligation, to exercise its rights in Section 5.01 in relation to the subject Project Results at the INSTITUTE's expense. The INSTITUTE shall notify the RECIPIENT in writing within thirty (30) days of its receipt of the RECIPIENT's notice if the INSTITUTE elects to exercise its

[***] Certain information in this document has been omitted and filed separately with the Securities and Exchange Commission. Confidential treatment has been requested with respect to the omitted portions.

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rights in relation to the subject Project Results. In the event that the INSTITUTE exercises its option under this section, the RECIPIENT shall fully cooperate with the INSTITUTE's efforts, in commercializing or otherwise bringing to practical application the applicable Project Results.

PART 4
REVENUE SHARING

Section D4.01 Revenue Sharing; Buyout.

(a) RECIPIENT shall pay to INSTITUTE royalties as follows:

(i) [***] until the aggregate amount of royalties paid to INSTITUTE pursuant to this Section D4.01(a)(i) equals [***] of Net Grant Award Proceeds; and

(ii) [***] thereafter.

(b) Notwithstanding the foregoing, if Net Grant Award Proceeds are less than $10,297,454, the percentages set forth in clauses (i) and (ii) of this Section D4.01(a) shall be reduced. The amount of the reduction will be calculated by multiplying the percentages in clauses (i) and (ii) by a fraction, (x) the numerator of which is the Net Grant Award Proceeds, and (y) the denominator of which is $10,297,454.

(c) Notwithstanding anything to the contrary in this Section D4.01, upon RECIPIENT's written notice of the Buyout Notice Trigger Event to INSTITUTE at any time after the Termination Date (the "**Buyout Notice**"), RECIPIENT may, in lieu of paying any additional royalties to INSTITUTE pursuant to Section D4.01(a), pay to INSTITUTE the dollar amount set forth in the following table opposite the applicable period in which such Buyout Notice is delivered (the applicable dollar amount being referred to as the "**Buyout Amount**"):

Period in Which Buyout Notice is Delivered	Buyout Amount
[***]	[***]

After satisfaction of its obligations under this Section D4.01(b), RECIPIENT shall have no further obligation under this Section D4.01.

(d) "**Net Grant Award Proceeds**" means the aggregate amount of Grant award proceeds advanced to RECIPIENT, net of any Grant award proceeds repaid by RECIPIENT to INSTITUTE, including, without limitation, pursuant to Section 4.07 of the Contract.

[***] Certain information in this document has been omitted and filed separately with the Securities and Exchange Commission. Confidential treatment has been requested with respect to the omitted portions.

Section D4.02 Adjustments. If any funding sources other than the INSTITUTE (but excluding RECIPIENT) contribute funds, directly or indirectly, to the research yielding any particular Project Result(s) and such funding sources are legally or contractually entitled to receive royalty based compensation with respect to such Project Result(s) (hereinafter a "**Participating Funding Source**"), then the royalty percentages in Section D4.01(a) in effect at any time shall be reduced [***]. For the sake of clarity, Participating Funding Sources do not include [***]. In calculating such reduced rate, funds from [***] shall not be included. In addition, for clarity, the rate shall not be reduced as a result of any funds received from funding sources where such funding sources are not [***].

Section D4.03 Statements and Timing of Payments. All payments owed pursuant to this Part 4 shall be made to the Cancer Prevention and Research Institute of Texas, and are payable on or before the [***] following the end of the calendar quarter in which RECIPIENT receives the Revenue or, in the case of Section D4.04, receives the monetary recovery. For each payment specified in Section D4.01, the payment shall be accompanied by a statement specifying: (i) the Grant to which the payment relates, (ii) the identities of and amounts funded by all Participating Funding Sources, (iii) the License Agreements to which the payment relates, (iv) the quantity of all Sales of each Commercial Product and Commercial Service since the last payment, if Sales are applicable to the current payment, (v) the gross consideration from all such License Agreements and Sales, if Sales are applicable to the current payment, and (vi) the amount of the payment to the Cancer Prevention and Research Institute of Texas.

Section D4.04 Recoveries in Enforcement Actions. In the event that RECIPIENT receives any monetary recovery from its enforcement of Institute-Funded IPR against infringement by a third party, then it shall pay to the State of Texas a share of such monetary recovery, including [***], less the [***], at the same rate and in the same manner as it shares Revenue pursuant to Section D4.01 (including any adjustments allowed by Section D4.02). For clarity, if the enforcement action is resolved by way of the execution of a License Agreement with the infringing third party, such License Agreement is consistent with the Section D4.01, then this Section D4.04 is not intended to apply to such License Agreement or the consideration specified therein.

Section D4.05 Revenue-Related Records. In addition to satisfying the requirements of Article IV of the Contract and Section E1.03 of Attachment E, the RECIPIENT shall keep complete and accurate Revenue-related Records until the [***] of the date of the payment of the last royalty payment owed hereunder, in sufficient detail to permit the INSTITUTE to confirm the accuracy of the statements delivered to the INSTITUTE under Section D4.03 and the calculation of the royalties owed hereunder.

Section D4.06 Audit of Revenue-Related Records. Upon at least [***] advance written notice, the RECIPIENT shall permit the INSTITUTE or its representatives or agents, at the INSTITUTE'S expense, to examine the Revenue-related Records of the RECIPIENT pursuant to Section D4.05 at least once per calendar year during regular business hours for the purpose of and to the extent necessary to verify the RECIPIENT's compliance with this Part 4. The rights of the INSTITUTE under this Section D4.06 shall terminate on the [***] of the date of the payment of the last royalty payment owed hereunder. In the event that any such examination reveals an underpayment to the INSTITUTE of greater than [***] of the amounts previously paid

[***] Certain information in this document has been omitted and filed separately with the Securities and Exchange Commission. Confidential treatment has been requested with respect to the omitted portions.

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by the RECIPIENT to the INSTITUTE, then the RECIPIENT shall reimburse the INSTITUTE for the cost of such examination.

PART 5
OPT-OUT AND DEFAULT

Section D5.01 RECIPIENT Opt-Out. Upon receipt of RECIPIENT's notice of its election (i) under Section D1.03 to abandon any Institute-Funded IPR or (ii) under Section 3.06 to cease its efforts to commercialize or otherwise bring to practical application any particular Project Results, the INSTITUTE shall have the option, but not the obligation, to pursue protection of the applicable Institute-Funded IPR, including directing the filing, prosecution and maintenance of patents covering the applicable Institute-Funded Inventions and/or to commercialize or otherwise bring to practical application the applicable Project Results, at its own cost, either directly or through one or more licensees. If the INSTITUTE elects to exercise such option, it shall notify RECIPIENT in writing within [***] of its receipt of RECIPIENT's notice and RECIPIENT shall thereafter comply with the terms of Section D5.03.

Section D5.02 RECIPIENT Default. In the event that the INSTITUTE notifies RECIPIENT in writing of RECIPIENT's failure to materially comply with its obligations under Sections D1.03 or D3.02 with respect to any particular Project Results, and RECIPIENT fails to cure such failure within [***] of such notice, then the INSTITUTE shall have the option, but not the obligation, to direct the filing, prosecution and maintenance of patents covering the applicable Institute-Funded Inventions and/or to [***], at its own cost, either directly or through one or more licensees. If the INSTITUTE elects to exercise such option, it shall notify the RECIPIENT in writing of such election and RECIPIENT shall thereafter comply with the terms of Section D5.03.

Section D5.03 RECIPIENT Cooperation upon Opt-Out or Default. In the event that the INSTITUTE exercises its option under Section D5.01 or D5.02, the RECIPIENT shall:

(1) [***] to the INSTITUTE or the INSTITUTE'S designee, to the maximum extent allowed by law, including where relevant and necessary to facilitate the foregoing transfer, requesting and diligently attempting to obtain any approvals required by law or otherwise in relation to such transfer;
(2) to the extent that RECIPIENT is unable to [***] to the INSTITUTE as specified in item (1), and subject to any existing third party rights, RECIPIENT [***], provided that the INSTITUTE may [***] only after exercising its option under Section D5.01 or D5.02;
(3) fully cooperate with the INSTITUTE's efforts, and at the INSTITUTE's cost, in [***], including [***] for such purposes and executing any documents and taking any further action necessary to fully effectuate the intent of this Section; and
(4) not take any action that would materially impede the INSTITUTE's ability to protect the applicable Institute-Funded Inventions.

If the INSTITUTE exercises its option under Sections D5.01 or D5.02, RECIPIENT shall have [***] (except as set forth in Part 2 of this Attachment, if applicable) and shall not be entitled to [***], except to the minimum extent required by law, if any. To the extent that the INSTITUTE has exercised its option under Section D5.01 or D5.02 and RECIPIENT is unable to [***] to the

[***] Certain information in this document has been omitted and filed separately with the Securities and Exchange Commission. Confidential treatment has been requested with respect to the omitted portions.

INSTITUTE as specified in item (1), then the INSTITUTE's [***] set forth in item (2) includes [***]. Subject to the statutory duties of the Texas Attorney General, if any, RECIPIENT shall cooperate fully with the INSTITUTE in any action brought by the INSTITUTE to enforce the Intellectual Property Rights in [***], at the INSTITUTE's cost, including without limitation, joining the enforcement action in name as a party plaintiff after all required approvals are obtained; provided that the INSTITUTE or its designee shall have full control over such enforcement action and shall receive and retain all monetary recoveries resulting from such enforcement actions, including any punitive damages.

PART 6
DEFINITIONS

The following terms shall have the following meaning throughout this Attachment. Other terms may be defined elsewhere in this Attachment.

(1) **Authorized Seller** — RECIPIENT, its Collaborators, or their licensees or any other party authorized by RECIPIENT, its Collaborators or their licensees to make a Sale on their behalf.

(2) **Buyout Trigger Event** — the [***] and the Party notifies the RECIPIENT it desires to buy out the Royalty defined by this Contract.

(3) **Commercial Product** — anything that incorporates, is based on, utilizes or is developed from Project Results and is created by human or mechanical effort or by a natural process and that is capable of being sold, licensed, transferred or conveyed to another party or is capable of otherwise being Exploited or disposed of, whether in exchange for consideration or not, including without limitation any drug, chemical or biological compound, gene, nucleic acid or nucleic acid sequence, gene therapy, plant, machine, mechanical device, hardware, tool or computer program.

(4) **Commercial Service** — any service performed that incorporates, is based on, utilizes or is developed from Project Results. For clarity, Commercial Service does not include research and development performed by RECIPIENT or its Collaborators.

(5) **Exclusive License** — a License Agreement under which the specific rights granted to the licensee with respect to [***], including without limitation scope of use and territorial rights, are granted on an exclusive basis.

(6) **Exploit** — make, have made, use, sell, offer to sell, import, export or otherwise dispose of, practice, copy, distribute, create derivative works of, publicly perform or publicly display.

(7) **Institute-Funded IPR** — any and all Intellectual Property Rights in and to Institute-Funded Technology. In no event shall Institute-Funded IPR include any intellectual property rights and/or technology in existence and owned/controlled by the RECIPIENT prior to the receipt of funds from the INSTITUTE, the listing of such IPR and/or technology in existence and owned/controlled by the RECIPIENT prior to the receipt of funds from the INSTITUTE is attached herein.

[***] Certain information in this document has been omitted and filed separately with the Securities and Exchange Commission. Confidential treatment has been requested with respect to the omitted portions.

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(8) **Institute-Funded Invention** — an Invention conceived or first reduced to practice by RECIPIENT, Recipient Personnel and/or Collaborator(s) in the performance of Institute-Funded Activity.

(9) **Institute-Funded Technology** — any and all of the following resulting or arising from Institute-Funded Activity during the Contract term: (a) proprietary and confidential information, including but not limited to data, trade secrets and know-how; (b) databases, compilations and collections of data; (c) tools, methods and processes; and (d) works of authorship, excluding all scholarly works, but including, without limitation, computer programs, source code and executable code, whether embodied in software, firmware or otherwise, documentation, files, records, data and mask works; and all instantiations of the foregoing in any form and embodied in any form, including but not limited to therapeutics, drugs, drug delivery systems, drug formulations, devices, diagnostics, biomarkers, reagents and research tools. Institute-Funded Technology includes Institute-Funded Inventions. In no event shall Institute-Funded Technology include items that were conceived of, in existence, or owned/controlled by RECIPIENT prior to receipt of funds from the INSTITUTE (a) proprietary and confidential information, including but not limited to data, trade secrets and know-how; (b) databases, compilations and collections of data; (c) tools, methods and processes; and (d) works of authorship, excluding all scholarly works, but including, without limitation, computer programs, source code and executable code, whether embodied in software, firmware or otherwise, documentation, files, records, data and mask works; and

all instantiations of the foregoing in any form and embodied in any form, including but not limited to therapeutics, drugs, drug delivery systems, drug formulations, devices, diagnostics, biomarkers, reagents and research tools.

(10) **Intellectual Property Rights** — any and all of the following and all rights in, arising out of, or associated therewith: (a) all United States and foreign patents and utility models and applications therefor, and all reissues, divisions, renewals, extensions, provisionals, and continuations and continuations-in part thereof, and equivalent or similar rights anywhere in the world in inventions and discoveries; (b) all trade secrets and rights in know-how and proprietary information; (c) all copyrights, copyright registrations and applications therefor, and all other rights corresponding thereto throughout the world; (d) all mask works, mask work registrations and applications therefor, and any equivalent or similar rights in semiconductor masks, layouts, architectures or topology; and (e) any similar, corresponding or equivalent rights to any of the foregoing anywhere in the world.

(11) **Invention** — a method, device, process or discovery that is conceived and/or reduced to practice, whether patentable or not.

(12) **License Agreement** — an agreement by which an owner of a Project Result grants any right to Exploit such Project Result to another party in exchange for consideration.

(13) **Licensing Activities** — the efforts of RECIPIENT or its Collaborator to negotiate, execute or enforce a License Agreement.

(14) **Necessary Additional IPR** — any [***] Intellectual Property Rights (a) [***], and (b) [***] set forth in the applicable Section of this Attachment D.

[***] Certain information in this document has been omitted and filed separately with the Securities and Exchange Commission. Confidential treatment has been requested with respect to the omitted portions.

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(15) **Non-Exclusive License** — a License Agreement under which the rights granted to the licensee with respect to the Project Results are granted on a non-exclusive basis.

(16) **Project Results** — any and all Institute-Funded Technology and Institute-Funded IPR.

(17) **Revenue** — the [***] consideration, whether [***], received from Sales and License Agreements related to Project Results (including without limitation, any [***]), net of (a) trade or quantity discounts or rebates, credits, allowances or refunds given for rejected or returned Commercial Products or Commercial Services, (b) any sales, value-added or other tax or governmental charge levied on the sale, transportation or delivery of a Commercial Product or Commercial Service (but excluding any income tax owed by the RECIPIENT), and (c) any separately stated charges for freight, postage, shipping and insurance.

(18) **Sale** — means any sale, lease, transfer, conveyance or other exploitation or disposition of a Commercial Product or Commercial Service for which consideration is received by an Authorized Seller.

[***] Certain information in this document has been omitted and filed separately with the Securities and Exchange Commission. Confidential treatment has been requested with respect to the omitted portions.

ATTACHMENT E

REPORTING REQUIREMENTS

This Attachment E is hereby incorporated into and made a part of that certain **CANCER RESEARCH GRANT CONTRACT** ("**Contract**") by and between the Cancer Prevention and Research Institute of Texas ("**CPRIT**" or the "**INSTITUTE**") and the RECIPIENT. A capitalized term used in this Attachment shall have the meaning given to term in the Contract or in the Attachments to the Contract, unless otherwise defined herein, In the event of a conflict between the provisions of this Attachment and the provisions of the Contract, this Attachment shall control.

INSTITUTE and RECIPIENT agree as follows:

ANNUAL REPORTING

Section E1.01 Annual Reports. The RECIPIENT shall submit reports annually to the INSTITUTE within [***] of the anniversary of the Effective Date of this Contract or at such other time as may be specified herein. The reports shall be submitted by the means and in the form(s) required by the INSTITUTE and shall be signed by the Principal Investigator/Program Director and the RECIPIENT's Authorized Signing Official. To the extent possible, the reports shall only include information that may be shared publicly. However, if it is necessary to submit information in the reports that the RECIPIENT considers confidential in order to fully comply with the terms of this Contract, then the RECIPIENT shall use reasonable efforts to mark such information as "confidential" and shall, to the extent practicable, to segregate such information within the reports to facilitate its redaction should redaction ever be necessary or appropriate.

Section E1.02 Contents of Reports. Each report shall contain a signed verification (electronic signature is acceptable) of RECIPIENT's compliance with each of its obligations as set forth in the Contract and shall include the following for the period covered by such report, as may then be applicable:

(a) **Project Data**. During the term of the Contract, RECIPIENT shall include in its annual report each of the following (except that the final annual report due under this part (a) shall be due within [***] after the end of the term of the Contract):

(1) A brief statement of the progress made to under the Scope of Work, including the progress to achieve the Project Goals and Timelines set forth in Attachment A.
(2) A brief statement of the Project Goals for the twelve months following submission of the report.
(3) New jobs created in the preceding twelve month period as a result of the Grant funds awarded to RECIPIENT.
(4) An inventory of the Equipment purchased for the Project using Grant funds.
(5) A HUB report in accordance with Section 3.08 "Historically Underutilized Businesses" of the Contract,

[***] Certain information in this document has been omitted and filed separately with the Securities and Exchange Commission. Confidential treatment has been requested with respect to the omitted portions.

(b) **Commercialization Data**. During the term of the Contract and continuing thereafter for so long as RECIPIENT has ongoing obligations to the INSTITUTE with respect to protection, development, commercialization and licensing of Project Results pursuant to Attachment D, RECIPIENT shall provide information about commercialization activities in a format specified by the INSTITUTE.

(c) **Revenue Sharing Data**. During the term of the Contract and continuing thereafter for so long as RECIPIENT has ongoing obligations to the INSTITUTE with respect to revenue sharing pursuant to Attachment D:

(1) A statement of the identities of the funding sources, amounts and dates of funding for all funding sources for the Project.
(2) A brief statement of the RECIPIENT's efforts to secure additional funds to support the Project.
(3) All financial information necessary to verify the calculation of the revenue sharing amounts specified in Attachment D.

(d) **Additional Data**. In addition to the foregoing, RECIPIENT shall use commercially reasonable efforts to also promptly report any other information required by this Contract or otherwise reasonably requested by the INSTITUTE, the Legislature, or any other funding or regulatory bodies covering the RECIPIENT's activities under this Contract.

Section E1.03 Record Keeping and Audits. The provisions of Article IV of the Contract shall apply fully to all information reported to the INSTITUTE pursuant to this Attachment, except that the right of the State of Texas to audit and the RECIPIENT's obligation to maintain Records shall continue until four years after the date of each such report made by RECIPIENT hereunder.

Section E1.04 Confidentiality of Documents and Information. The provisions of Section 2.13 "Confidentiality of Documents and Information" of the Contract shall apply fully to all Confidential Information reported, delivered or submitted to the INSTITUTE pursuant to this Attachment E.

ATTACHMENT F-1

This Attachment F-1 is hereby incorporated into and made a part of that certain **CANCER RESEARCH GRANT CONTRACT** ("**Contract**") by and between the Cancer Prevention and Research Institute of Texas ("**CPRIT**" or the "**INSTITUTE**") and the RECIPIENT. A capitalized term used in this Attachment shall have the meaning given to term in the Contract or in the Attachments to the Contract, unless otherwise defined herein. In the event of a conflict between the provisions of this Attachment and the provisions of the Contract, this Attachment shall control.

INSTITUTE and RECIPIENT agree to the following change:

Section 2.09 Transfer or Assignment by Recipient is revised in the following manner: The entire text following the title is deleted and replaced with the following:

"This Contract is not transferable or otherwise assignable by the RECIPIENT, whether by operation of law or otherwise, without the prior written consent of the INSTITUTE. Any such attempted transfer or assignment without the prior written consent of the INSTITUTE shall be null, void and of no effect. If the Principal Investigator/Program Director leaves the employment of RECIPIENT for any reason during the course of the Grant, prior written approval by the INSTITUTE is required for the replacement of the Principal Investigator/Program Director. Under no circumstance shall the Grant be transferred or assigned to an organization outside of the State of Texas."

Section 4.07 Repayment of Grant Proceeds for Relocation Outside of Texas is revised by adding the following sentence to the end of Section 4.07:

"In the event that RECIPIENT is [***] outside of the State, 4.07 shall not be automatically triggered if [***]."

The RECIPIENT and the INSTITUTE agree and understand that prior to an event that may trigger Section 4.07, the RECIPIENT and the INSTITUTE will negotiate in good faith considering the circumstances as presented at that time regarding whether or not [***]. In the event that RECIPIENT is [***], the INSTITUTE will look to whether [***].

[***] Certain information in this document has been omitted and filed separately with the Securities and Exchange Commission. Confidential treatment has been requested with respect to the omitted portions.

EXECUTED IN DUPLICATE ORIGINALS ON THE DATES INDICATED.

RECIPIENT		**INSTITUTE**	
By	/s/ Paul Lammers	By	/s/ William Gimson
(Signature of Person Authorized to Sign Contracts)			
Name:	Dr. Paul Lammers	Name:	William “Bill” Gimson, Executive Director
Date:	08/31/2010	Date:	August 30, 2010

Exhibit 10.7(A)

MIRNA THERAPEUTICS, INC.

2008 LONG TERM INCENTIVE PLAN

FIRST AMENDMENT

TO THE

MIRNA THERAPEUTICS, INC.

2008 LONG TERM INCENTIVE PLAN

This First Amendment to the Mirna Therapeutics, Inc. 2008 Long Term Incentive Plan (the "**Plan**") is made by Mirna Therapeutics, Inc., a Delaware corporation (the "**Company**").

WHEREAS, the Company has established the Plan in order to attract and retain able persons as employees, directors and consultants of the Company, its parent and its subsidiaries;

WHEREAS, Section 10(f) of the Plan provides that the Company may amend the Plan under certain circumstances; and

WHEREAS, the Company desires to enter into this First Amendment to reduce the number of shares of common stock, par value $0.001, of the Company (the "**Stock**"), reserved and available for issuance in connection with awards under the Plan.

NOW, THEREFORE, Section 4(a) of the Plan is amended in its entirety, effective as of November 3, 2009, as follows:

> Overall Number of Shares Available for Delivery. Subject to adjustment in a manner consistent with any adjustment made pursuant to Section 9, the total number of shares of Stock reserved and available for issuance in connection with Awards under this Plan shall not exceed 1,500,000 shares.

IN WITNESS WHEREOF, a duly authorized officer of the Company has executed this First Amendment as set forth below.

MIRNA THERAPEUTICS, INC.

By: /S/ LYNNE HOHLFELD
Name: Lynne Hohlfeld
Title: Chief Financial Officer
Date: November 3, 2009

SECOND AMENDMENT

TO THE

MIRNA THERAPEUTICS, INC.

2008 LONG TERM INCENTIVE PLAN

This Second Amendment to the Mirna Therapeutics, Inc. 2008 Long Term Incentive Plan, as amended (the "**Plan**"), is made by Mirna Therapeutics, Inc., a Delaware corporation (the "**Company**").

WHEREAS, the Company has established the Plan in order to attract and retain able persons as employees, directors and consultants of the Company, its parent and its subsidiaries;

WHEREAS, Section 10(f) of the Plan provides that the Company may amend the Plan under certain circumstances; and

WHEREAS, the Company desires to enter into this Second Amendment to increase the number of shares of common stock, par value $0.001, of the Company, reserved and available for issuance in connection with awards under the Plan.

NOW, THEREFORE, Section 4(a) of the Plan is amended in its entirety, effective as of October 22, 2012, as follows:

> Overall Number of Shares Available for Delivery. Subject to adjustment in a manner consistent with any adjustment made pursuant to Section 9, the total number of shares of Stock reserved and available for issuance in connection with Awards under this Plan shall not exceed 4,958,740 shares.

IN WITNESS WHEREOF, a duly authorized officer of the Company has executed this Second Amendment as set forth below.

MIRNA THERAPEUTICS, INC.

By: /S/ LYNNE HOHLFELD
Name: Lynne Hohlfeld
Title: Chief Financial Officer
Date: October 22, 2012

THIRD AMENDMENT
TO THE
MIRNA THERAPEUTICS, INC.
2008 LONG TERM INCENTIVE PLAN

This Third Amendment to the Mirna Therapeutics, Inc. 2008 Long Term Incentive Plan, as amended (the "**Plan**"), is made by Mirna Therapeutics, Inc., a Delaware corporation (the "**Company**").

WHEREAS, the Company has established the Plan in order to attract and retain able persons as employees, directors and consultants of the Company, its parent and its subsidiaries;

WHEREAS, Section 10(f) of the Plan provides that the Company may amend the Plan under certain circumstances; and

WHEREAS, the Company desires to enter into this Second Amendment to increase the number of shares of common stock, par value $0.001, of the Company, reserved and available for issuance in connection with awards under the Plan.

NOW, THEREFORE, Section 4(a) of the Plan is amended in its entirety, effective as of December 31, 2013, as follows:

> Overall Number of Shares Available for Delivery. Subject to adjustment in a manner consistent with any adjustment made pursuant to Section 9, the total number of shares of Stock reserved and available for issuance in connection with Awards under this Plan shall not exceed 8,321,740 shares.

IN WITNESS WHEREOF, a duly authorized officer of the Company has executed this Third Amendment as set forth below.

MIRNA THERAPEUTICS, INC.

By: /s/ Jon Irvin

Name: Jon Irvin
Title: Chief Financial Officer
Date: December 31, 2013

FOURTH AMENDMENT

TO THE
MIRNA THERAPEUTICS, INC.
2008 LONG TERM INCENTIVE PLAN

This Fourth Amendment to the Mirna Therapeutics, Inc. 2008 Long Term Incentive Plan, as amended (the "**Plan**"), is made by Mirna Therapeutics, Inc., a Delaware corporation (the "**Company**").

WHEREAS, the Company has established the Plan in order to attract and retain able persons as employees, directors and consultants of the Company, its parent and its subsidiaries;

WHEREAS, Section 10(f) of the Plan provides that the Company may amend the Plan under certain circumstances; and

WHEREAS, the Company desires to enter into this Fourth Amendment to increase the number of shares of common stock, par value $0.001, of the Company, reserved and available for issuance in connection with awards under the Plan.

NOW, THEREFORE, Section 4(a) of the Plan is amended in its entirety, effective as of March 10, 2014, as follows:

> Overall Number of Shares Available for Delivery. Subject to adjustment in a manner consistent with any adjustment made pursuant to Section 9, the total number of shares of Stock reserved and available for issuance in connection with Awards under this Plan shall not exceed 10,049,028 shares.

IN WITNESS WHEREOF, a duly authorized officer of the Company has executed this Fourth Amendment as set forth below.

MIRNA THERAPEUTICS, INC.

By: /s/ Jon Irvin

Name: Jon Irvin
Title: Chief Financial Officer
Date: March 10, 2014

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MIRNA THERAPEUTICS, INC.

2008 Long Term Incentive Plan

1. Purpose. The purpose of the Mirna Therapeutics, Inc. 2008 Long Term Incentive Plan (the "***Plan***") is to provide a means through which Mirna Therapeutics, Inc., a Delaware corporation (the "***Company***"), and its Parent and Subsidiaries may attract and retain able persons as employees, directors and consultants of the Company, its Parent and its Subsidiaries, and to provide a means whereby those persons upon whom the responsibilities of the successful administration and management of the Company, its Parent and its Subsidiaries, rest, and whose present and potential contributions to the welfare of the Company, its Parent and its Subsidiaries, are of importance, can acquire and maintain stock ownership, or awards the value of which is tied to the performance of the Company, thereby strengthening their concern for the welfare of the Company, its Parent and its Subsidiaries, and their desire to remain employed. A further purpose of this Plan is to provide such employees, directors and consultants with additional incentive and reward opportunities designed to enhance the profitable growth of the Company. Accordingly, this Plan primarily provides for the granting of Incentive Stock Options, options which do not constitute Incentive Stock Options, Restricted Stock Awards, Restricted Stock Units, Stock Appreciation Rights or any combination of the foregoing, as is best suited to the circumstances of the particular individual as provided herein.

2. Definitions. For purposes of this Plan, the following terms shall be defined as set forth below, in addition to such terms defined in Section 1 hereof:

(a) "***Annual Incentive Award***" means a conditional right granted to a Participant under Subsection 8(c) hereof to receive a cash payment, Stock or other Award, unless otherwise determined by the Committee, after the end of a specified year.

(b) "***Award***" means any Option, SAR (including Limited SAR), Restricted Stock Award, Restricted Stock Unit, Bonus Stock, Dividend Equivalent, Other Stock-Based Award, Performance Award or Annual Incentive Award, together with any other right or interest granted to a Participant under this Plan.

(c) "***Beneficiary***" means one or more persons, trusts or other entities which have been designated by a Participant, in his or her most recent written beneficiary designation filed with the Committee, to receive the benefits specified under this Plan upon such Participant's death or to which Awards or other rights are transferred if and to the extent permitted under Subsection 10(b) hereof. If, upon a Participant's death, there is no designated Beneficiary or surviving designated Beneficiary, then the term Beneficiary means the persons, trusts or other entities entitled by will or the laws of descent and distribution to receive such benefits.

(d) "***Board***" means the Company's Board of Directors.

(e) "***Business Day***" means any day other than a Saturday, a Sunday, or a day on which banking institutions in the state of Texas are authorized or obligated by law or executive order to close.

(f) "***Change in Control***" means the occurrence of any of the following events:

(i) A "change in the ownership of the Company" which shall occur on the date that any one person, or more than one person acting as a group, acquires ownership of stock in the Company that, together with stock held by such person or group, constitutes more than 50% of the total fair market value or total voting power of the stock of the Company; provided, however, if any one person or more than one person acting as a group, is considered to own more than 50% of the total fair market value or total voting power of the stock of the Company, the acquisition of additional stock by the same person or persons will not be considered a "change in the ownership of the Company" (or to cause a "change in the effective control of the Company" within the meaning of Subsection 2(f)(ii) below) and an increase of the effective percentage of stock owned by any one person, or persons acting as a group, as a result of a transaction in which the Company acquires its stock in exchange for property will be treated as an acquisition of stock for purposes of this paragraph; provided, further, however, that for purposes of this Subsection 2(f)(i), the following acquisitions shall not constitute a Change in Control: (1) any acquisition by any employee benefit plan (or related trust) sponsored or maintained by the Company or any entity controlled by the Company, or (2) any acquisition by investors of preferred stock, common stock or other stock or similar securities of the Company or any security convertible or exchangeable into or for preferred stock, common stock or other stock or similar securities of the Company for cash in any financing transaction or series of related financing transactions, as determined by the Committee in its sole discretion. This Subsection 2(f)(i) applies only when there is a transfer of the stock of the Company (or issuance of stock) and stock in the Company remains outstanding after the transaction.

(ii) A "change in the effective control of the Company" which shall occur on the date that either (A) any one person, or more than one person acting as a group, acquires (or has acquired during the twelve month period ending on the date of the most recent acquisition by such person or persons) ownership of stock of the Company possessing 35% or more of the total voting power of the stock of the Company, except for (1) any acquisition by any employee benefit plan (or related trust) sponsored or maintained by the Company or any entity controlled by the Company, or (2) any acquisition by investors of preferred stock, common stock or other stock or similar securities of the Company or any security convertible or exchangeable into or for preferred stock, common stock or other stock or similar securities of the Company for cash in any financing transaction or series of related financing transactions, as determined by the Committee in its sole discretion; or (B) a majority of the members of the Board are replaced during any twelve-month period by directors whose appointment or election is not endorsed by a majority of the members of the Board prior to the date of the appointment or election. For purposes of a "change in the effective control of the Company," if any one person, or more than one person acting as a group, is considered to effectively control the Company within the meaning of this Subsection 2(f)(ii), the acquisition of additional control of the Company by the same person or persons is not considered a "change in the effective control of the Company," or to cause a "change in the ownership of the Company" within the meaning of Subsection 2(f)(i) above.

(iii) A "change in the ownership of a substantial portion of the Company's assets" which shall occur on the date that any one person, or more than one person

acting as a group, acquires (or has acquired during the twelve month period ending on the date of the most recent acquisition by such person or persons) assets of the Company that have a total gross fair market value equal to or more than 40% of the total gross fair market value of all the assets of the Company immediately prior to such acquisition or acquisitions. For this purpose, gross fair market value means the value of the assets of the Company, or the value of the assets being disposed of, determined without regard to any liabilities associated with such assets. Any transfer of assets to an entity that is controlled by the shareholders of the Company immediately after the transfer, as provided in guidance issued pursuant to the Nonqualified Deferred Compensation Rules, shall not constitute a Change in Control.

For purposes of this Subsection 2(f), the provisions of section 318(a) of the Code regarding the constructive ownership of stock will apply to determine stock ownership; provided, that, stock underlying unvested options (including options exercisable for stock that is not substantially vested) will not be treated as owned by the individual who holds the option. In addition, for purposes of this Subsection 2(f) and except as otherwise provided in an Award agreement, "Company" includes (x) the Company, (y) the entity for whom a Participant performs the services for which an Award is granted, and (z) an entity that is a stockholder owning more than 50% of the total fair market value and total voting power (a "***Majority Shareholder***") of the Company or the entity identified in (y) above, or any entity in a chain of entities in which each entity is a Majority Shareholder of another entity in the chain, ending in the Company or the entity identified in (y) above.

(g) "***Detrimental Activity***" means any one or more of the following activities in which the Committee determines in its sole and absolute discretion that an employee has engaged without the written consent of the Company: (i) breach or violation of any employment-related agreement between the employee and the Company, its Parent or any Subsidiary of the Company; (ii) breach or violation of any other written agreement or release of claims between the employee and the Company, its Parent or any Subsidiary of the Company; (iii) violation of a written policy of the Company, its Parent or any Subsidiary of the Company which violation is determined by the Committee in its sole discretion to be detrimental to the Company, its Parent or any Subsidiary of the Company; (iv) improper use or disclosure, either during or subsequent to the employee's employment with the Company, its Parent or any Subsidiary of the Company, of any proprietary or confidential information of the Company, its Parent or any Subsidiary of the Company; (v) conviction of, or entering a guilty plea with respect to, any felony crime, whether or not connected with the Company, its Parent or any Subsidiary of the Company; (vi) entering into employment or a consulting relationship with a competitor of the Company, its Parent or any Subsidiary of the Company under circumstances suggesting that such employee will be using unique or special knowledge gained as an employee of the Company, its Parent or any Subsidiary of the Company to compete with the Company, its Parent or any Subsidiary of the Company; (vii) solicitation or attempted solicitation of employees from the Company, its Parent or any Subsidiary of the Company; (viii) use of information obtained during the course of the employee's employment with the Company, its Parent or any Subsidiary of the Company for the employee's own purposes, such as for the solicitation of business; (ix) engaging in either gross misconduct or criminal activity harmful to the Company, its Parent or any Subsidiary of the Company; or (x) any other action that materially harms the business interests, reputation, or goodwill of the Company, its Parent or any Subsidiary of the Company.

(h) "***Code***" means the Internal Revenue Code of 1986, as amended from time to time, including regulations thereunder and successor provisions and regulations thereto.

(i) "***Committee***" means a committee of two or more directors designated by the Board to administer this Plan; provided, however, that, unless otherwise determined by the Board, the Committee shall consist solely of two or more directors, each of whom shall be (i) a "nonemployee director" within the meaning of Rule 16b-3, and (ii) an "outside director" as defined under section 162(m) of the Code unless administration of this Plan by "outside directors" is not then required in order to qualify for tax deductibility under section 162(m) of the Code.

(j) "***Covered Employee***" means an Eligible Person who is a Covered Employee as specified in Subsection 8(e) of this Plan.

(k) "***Dividend Equivalent***" means a right, granted to a Participant under Subsection 6(g), to receive cash, Stock, other Awards or other property equal in value to dividends paid with respect to a specified number of shares of Stock, or other periodic payments.

(l) "***Effective Date***" means May 15, 2008.

(m) "***Eligible Person***" means all officers and employees of the Company, its Parent or of any Subsidiary, and other persons who provide services to the Company, its Parent or any of the Subsidiaries of the Company, including directors of the Company. An employee on leave of absence may be considered as still in the employ of the Company, its Parent or a Subsidiary for purposes of eligibility for participation in this Plan. In addition, the Committee may designate such other Persons as eligible to receive an Award provided that the issuance of any Stock pursuant to such Award is exempt from registration under the Securities Act; and provided further that such other Persons shall not be entitled to receive Incentive Stock Options.

(n) "***Exchange Act***" means the Securities Exchange Act of 1934, as amended from time to time, including rules thereunder and successor provisions and rules thereto.

(o) "***Fair Market Value***" means, as of any specified date, (i) the mean of the high and low sales prices of the Common Stock either (A) if the Stock is traded on the National Market System of the NASDAQ, as reported on the National Market System of NASDAQ on that date (or if no sales occur on that date, on the last preceding date on which such sales of the Stock are so reported), or (B) if the Stock is listed on a national securities exchange, as reported on the stock exchange composite tape on that date (or if no sales occur on that date, on the last preceding date on which such sales of the Stock are so reported); (ii) if the Stock is not traded on the National Market System of the NASDAQ or a national securities exchange but is traded over the counter at the time a determination of its fair market value is required to be made under the Plan, the average between the reported high and low or closing bid and asked prices of Stock on the most recent date on which Stock was publicly traded; (iii) in the event Stock is not publicly traded at the time a determination of its value is required to be made under the Plan, the amount determined by the Committee in its discretion in such manner as it deems appropriate; or (iv) on the date of an initial public offering of Stock, the offering price under such initial public offering.

(p) "***Incentive Stock Option***" or "***ISO***" means any Option intended to be and designated as an incentive stock option within the meaning of section 422 of the Code or any successor provision thereto.

(q) "***Nonqualified Deferred Compensation Rules***" means the limitations or requirements of section 409A of the Code and the regulations promulgated thereunder.

(r) "***Option***" means a right, granted to a Participant under Subsection 6(b) hereof, to purchase Stock or other Awards at a specified price during specified time periods.

(s) "***Other Stock-Based Awards***" means Awards granted to a Participant under Subsection 6(i) hereof.

(t) "***Parent***" means Asuragen, Inc. or any other corporation or other entity that owns, directly or indirectly, a majority of the voting power of voting equity securities or equity interest of the Company.

(u) "***Participant***" means a person who has been granted an Award under this Plan which remains outstanding, including a person who is no longer an Eligible Person.

(v) "***Performance Unit***" means a right, granted to a Participant under Section 8 hereof, to receive Awards based upon performance criteria specified by the Committee.

(w) "***Person***" means any person or entity of any nature whatsoever, specifically including an individual, a firm, a company, a corporation, a partnership, a limited liability company, a trust or other entity; a Person, together with that Person's Affiliates and Associates (as those terms are defined in Rule 12b-2 under the Exchange Act), and any Persons acting as a partnership, limited partnership, joint venture, association, syndicate or other group (whether or not formally organized), or otherwise acting jointly or in concert or in a coordinated or consciously parallel manner (whether or not pursuant to any express agreement), for the purpose of acquiring, holding, voting or disposing of securities of the Company with such Person, shall be deemed a single "Person."

(x) "***Qualifying Public Offering***" shall mean a firm commitment underwritten public offering of Stock for cash where the shares of Stock registered under the Securities Act are listed on a national securities exchange or the NASDAQ National Market System.

(y) "***Qualified Member***" means a member of the Committee who is a "nonemployee Director" within the meaning of Rule 16b-3(b)(3) and an "outside director" within the meaning of Treasury Regulation 1.162-27 under section 162(m) of the Code.

(z) "***Restricted Stock***" means Stock granted to a Participant under Subsection 6(d) hereof, that is subject to certain restrictions and to a risk of forfeiture.

(aa) "***Restricted Stock Unit***" means a right, granted to a Participant under Subsection 6(e) hereof, to receive Stock, cash or a combination thereof at the end of a specified deferral period.

(bb) "***Rule 16b-3***" means Rule 16b-3, promulgated by the Securities and Exchange Commission under section 16 of the Exchange Act, as from time to time in effect and applicable to this Plan and Participants.

(cc) "***Securities Act***" means the Securities Act of 1933 and the rules and regulations promulgated thereunder, or any successor law, as it may be amended from time to time.

(dd) "***Service***" means an employee's service in his or her status as an employee of the Company, its Parent or a Subsidiary of the Company or of a corporation, or parent or subsidiary of such corporation, assuming or substituting a new award for an Award granted under this Plan.

(ee) "***Stock***" means the Company's Common Stock, par value $0.001 per share, and such other securities as may be substituted (or resubstituted) for Stock pursuant to Section 9.

(ff) "***Stock Appreciation Rights***" or "***SAR***" means a right granted to a Participant under Subsection 6(c) hereof.

(gg) "***Subsidiary***" means with respect to the Company, any corporation or other entity of which a majority of the voting power of the voting equity securities or equity interest is owned, directly or indirectly, by the Company.

3. Administration.

(a) Authority of the Committee. This Plan shall be administered by the Committee except to the extent the Board elects to administer this Plan, in which case references herein to the "***Committee***" shall be deemed to include references to the "***Board***." Subject to the express provisions of the Plan and Rule 16b-3, the Committee shall have the authority, in its sole and absolute discretion, to (i) adopt, amend, and rescind administrative and interpretive rules and regulations relating to the Plan; (ii) determine the Eligible Persons to whom, and the time or times at which, Awards shall be granted; (iii) determine the amount of cash and the number of shares of Stock, Stock Appreciation Rights, Restricted Stock Units or Restricted Stock Awards, or any combination thereof, that shall be the subject of each Award; (iv) determine the terms and provisions of each Award agreement (which need not be identical), including provisions defining or otherwise relating to (A) the term and the period or periods and extent of exercisability of the Options, (B) the extent to which the transferability of shares of Stock issued or transferred pursuant to any Award is restricted, (C) except as otherwise provided herein, the effect of termination of employment, or the service relationship with the Company, of a Participant on the Award, and (D) the effect of approved leaves of absence (consistent with any applicable regulations of the Internal Revenue Service); (v) accelerate the time of exercisability of any Award that has been granted;

(vi) construe the respective Award agreements and the Plan; (vii) make determinations of the Fair Market Value of the Stock pursuant to the Plan; (viii) delegate its duties under the Plan to such agents as it may appoint from time to time, provided that the Committee may not delegate its duties with respect to making Awards to, or otherwise with respect to Awards granted to, Eligible Persons who are subject to section 16(b) of

the Exchange Act or section 162(m) of the Code; and (ix) make all other determinations, perform all other acts, and exercise all other powers and authority necessary or advisable for administering the Plan, including the delegation of those ministerial acts and responsibilities as the Committee deems appropriate. Subject to Rule 16b-3 and section 162(m) of the Code, the Committee may correct any defect, supply any omission, or reconcile any inconsistency in the Plan, in any Award, or in any Award agreement in the manner and to the extent it deems necessary or desirable to carry the Plan into effect, and the Committee shall be the sole and final judge of that necessity or desirability. The determinations of the Committee on the matters referred to in this Subsection 3(a) shall be final and conclusive.

(b) Manner of Exercise of Committee Authority. At any time that a member of the Committee is not a Qualified Member, any action of the Committee relating to an Award granted or to be granted to a Participant who is then subject to section 16 of the Exchange Act in respect of the Company, or relating to an Award intended by the Committee to qualify as "performance-based compensation" within the meaning of section 162(m) of the Code and regulations thereunder, may be taken either (i) by a subcommittee, designated by the Committee, composed solely of two or more Qualified Members, or (ii) by the Committee but with each such member who is not a Qualified Member abstaining or recusing himself or herself from such action; provided, however, that, upon such abstention or recusal, the Committee remains composed solely of two or more Qualified Members. Such action, authorized by such a subcommittee or by the Committee upon the abstention or recusal of such non-Qualified Member(s), shall be the action of the Committee for purposes of this Plan. Any action of the Committee shall be final, conclusive and binding on all persons, including the Company, its Subsidiaries, stockholders, Participants, Beneficiaries, and transferees under Subsection 10(b) hereof or other persons claiming rights from or through a Participant. The express grant of any specific power to the Committee, and the taking of any action by the Committee, shall not be construed as limiting any power or authority of the Committee. The Committee may delegate to officers or managers of the Company, its Parent or any Subsidiary, or committees thereof, the authority, subject to such terms as the Committee shall determine, to perform such functions, including administrative functions, as the Committee may determine, to the extent that such delegation will not result in the loss of an exemption under Rule 16b-3(d)(1) for Awards granted to Participants subject to section 16 of the Exchange Act in respect of the Company and will not cause Awards intended to qualify as "performance-based compensation" under section 162(m) of the Code to fail to so qualify.

(c) Limitation of Liability. The Committee and each member thereof shall be entitled to, in good faith, rely or act upon any report or other information furnished to him or her by any officer or employee of the Company, its Parent or a Subsidiary, the Company's legal counsel, independent auditors, consultants or any other agents assisting in the administration of this Plan. Members of the Committee and any officer or employee of the Company, its Parent or a Subsidiary acting at the direction or on behalf of the Committee shall not be personally liable for any action or determination taken or made in good faith with respect to this Plan, and shall, to the fullest extent permitted by law, be indemnified and held harmless by the Company with respect to any such action or determination.

4. Stock Subject to Plan.

(a) Overall Number of Shares Available for Delivery. Subject to adjustment in a manner consistent with any adjustment made pursuant to Section 9, the total number of shares of Stock reserved and available for issuance in connection with Awards under this Plan shall not exceed 5,000,000 shares.

(b) Application of Limitation to Grants of Awards. No Award may be granted if the number of shares of Stock to be delivered in connection with such Award exceeds the number of shares of Stock remaining available under this Plan minus the number of shares of Stock issuable in settlement of or relating to then-outstanding Awards. The Committee may adopt reasonable counting procedures to ensure appropriate counting, avoid double counting (as, for example, in the case of tandem or substitute awards) and make adjustments if the number of shares of Stock actually delivered differs from the number of shares previously counted in connection with an Award.

(c) Availability of Shares Not Issued under Awards. Shares of Stock subject to an Award under this Plan that expire or are canceled, forfeited, settled in cash or otherwise terminated without an issuance of shares to the Participant, including (i) the number of shares withheld in payment of any exercise or purchase price of an Award or taxes relating to Awards, and (ii) the number of shares surrendered in payment of any exercise or purchase price of an Award or taxes relating to any Award, will again be available for Awards under this Plan, except that if any such shares could not again be available for Awards to a particular Participant under any applicable law or regulation, such shares shall be available exclusively for Awards to Participants who are not subject to such limitation.

(d) Stock Offered. The shares to be delivered under the Plan shall be made available from (i) authorized but unissued shares of Stock, (ii) Stock held in the treasury of the Company, or (iii) previously issued shares of Stock reacquired by the Company, including shares purchased on the open market.

5. Eligibility; Per Person Award Limitations. Awards may be granted under this Plan only to Persons who are Eligible Persons at the time of grant thereof or in connection with the severance or retirement of Eligible Individuals; provided, however, Options may not be granted to Persons who are Eligible Persons because they are employees or service providers of Parent. In each calendar year, during any part of which this Plan is in effect, a Covered Employee may not be granted (a) Awards (other than Awards designated to be paid only in cash or the settlement of which is not based on a number of shares of Stock) relating to more than 2,000,000 shares of Stock, subject to adjustment in a manner consistent with any adjustment made pursuant to Section 9 and (b) Awards designated to be paid only in cash, or the settlement of which is not based on a number of shares of Stock, having a value determined on the date of grant in excess of $2,000,000.

6. Specific Terms of Awards.

(a) General. Awards may be granted on the terms and conditions set forth in this Section 6. In addition, the Committee may impose on any Award or the exercise thereof, at

the date of grant or thereafter (subject to Subsection 10(f)), such additional terms and conditions, not inconsistent with the provisions of this Plan, as the Committee shall determine, including terms requiring forfeiture of Awards in the event of termination of employment by the Participant, or termination of the Participant's service relationship with the Company, and terms permitting a Participant to make elections relating to his or her Award. The Committee shall retain full power and discretion to accelerate, waive or modify, at any time, any term or condition of an Award that is not mandatory under this Plan; provided, however, that the Committee shall not have any discretion to accelerate, waive or modify any term or condition of an Award that is intended to qualify as "performance-based compensation" for purposes of section 162(m) of the Code if such discretion would cause the Award to not so qualify.

(b) Options. The Committee is authorized to grant Options to Participants on the following terms and conditions:

(i) Exercise Price. Each Option agreement shall state the exercise price per share of Stock (the "***Exercise Price***"); provided, however, that the Exercise Price per share of Stock subject to an ISO shall not be less than the greater of (A) the par value per share of the Stock or (B) 100% of the Fair Market Value per share of the Stock as of the date of grant of the Option (or in the case of an individual who owns stock possessing more than 10 percent of the total combined voting power of all classes of stock of the Company or its parent or any subsidiary, 110% of the Fair Market Value per share of the Stock on the date of grant). The exercise price per share of Stock subject to an Option other than an ISO shall not be less than the greater of (1) the par value per share of the Stock and (2) 100% of the Fair Market Value per share of the stock as of the date of grant of the Option.

(ii) Time and Method of Exercise. The Committee shall determine the time or times at which or the circumstances under which an Option may be exercised in whole or in part (including based on achievement of performance goals and/or future service requirements), the methods by which such exercise price may be paid or deemed to be paid, the form of such payment, including without limitation cash, Stock, other Awards or awards granted under other plans of the Company, its Parent or any Subsidiary, or other property (including notes or other contractual obligations of Participants to make payment on a deferred basis), and the methods by or forms in which Stock will be delivered or deemed to be delivered to Participants, including, but not limited to, the delivery of Restricted Stock subject to Subsection 6(d). In the case of an exercise whereby the Exercise Price is paid with Stock, such Stock shall be valued as of the date of exercise.

(iii) ISOs. The terms of any ISO granted under this Plan shall comply in all respects with the provisions of section 422 of the Code. Anything in this Plan to the contrary notwithstanding, no term of this Plan relating to ISOs (including any SAR in tandem therewith) shall be interpreted, amended or altered, nor shall any discretion or authority granted under this Plan be exercised, so as to disqualify either this Plan or any ISO under section 422 of the Code, unless the Participant has first requested the change that will result in such disqualification. ISOs shall not be granted more than ten years after the earlier of the adoption of this Plan or the approval of this Plan by the Company's stockholders. Notwithstanding the foregoing, the Fair Market Value of shares of Stock subject to an ISO and the aggregate Fair Market Value of shares of stock of any parent or subsidiary corporation (within the meaning of

sections 424(e) and (f) of the Code) subject to any other ISO (within the meaning of section 422 of the Code)) of the Company or a parent or subsidiary corporation (within the meaning of sections 424(e) and (f) of the Code) that first becomes purchasable by a Participant in any calendar year may not (with respect to that Participant) exceed $100,000, or such other amount as may be prescribed under section 422 of the Code or applicable regulations or rulings from time to time. As used in the previous sentence, Fair Market Value shall be determined as of the date the ISOs are granted. Failure to comply with this provision shall not impair the enforceability or exercisability of any Option, but shall cause the excess amount of shares to be reclassified in accordance with the Code.

(c) Stock Appreciation Rights. The Committee is authorized to grant SARs to Participants on the following terms and conditions:

(i) Right to Payment. An SAR shall confer on the Participant to whom it is granted a right to receive, upon exercise thereof, the excess of (A) the Fair Market Value of one share of Stock on the date of exercise over (B) the grant price of the SAR as determined by the Committee.

(ii) Rights Related to Options. An SAR granted in connection with an Option shall entitle a Participant, upon exercise, to surrender that Option or any portion thereof, to the extent unexercised, and to receive payment of an amount computed pursuant to Subsection 6(c)(ii)(B). That Option shall then cease to be exercisable to the extent surrendered. SARs granted in connection with an Option shall be subject to the terms of the Award agreement governing the Option, which shall comply with the following provisions in addition to those applicable to Options:

(A) An SAR granted in connection with an Option shall be exercisable only at such time or times and only to the extent that the related Option is exercisable.

(B) Upon the exercise of an SAR related to an Option, a Participant shall be entitled to receive payment from the Company of an amount determined by multiplying:

(1) the difference obtained by subtracting the exercise price of a share of Stock specified in the related Option from the Fair Market Value of a share of Stock on the date of exercise of the SAR, by

(2) the number of shares as to which that SAR has been exercised.

(iii) Right Without Option. An SAR granted independent of an Option shall be exercisable as determined by the Committee and set forth in the Award agreement governing the SAR, which Award agreement shall comply with the following provisions:

(A) Each Award agreement shall state the total number of shares of Stock to which the SAR relates.

(B) Each Award agreement shall state the time or periods in which the right to exercise the SAR or a portion thereof shall vest and the number of shares of Stock for which the right to exercise the SAR shall vest at each such time or period.

(C) Each Award agreement shall state the date at which the SARs shall expire if not previously exercised.

(D) Each SAR shall entitle a participant, upon exercise thereof, to receive payment of an amount determined by multiplying:

(1) the difference obtained by subtracting the Fair Market Value of a share of Stock on the date of grant of the SAR from the Fair Market Value of a share of Stock on the date of exercise of that SAR, by

(2) he number of shares as to which the SAR has been exercised.

(iv) Terms. Except as otherwise provided herein, the Committee shall determine at the date of grant or thereafter, the time or times at which and the circumstances under which an SAR may be exercised in whole or in part (including based on achievement of performance goals and/or future service requirements), the method of exercise, method of settlement, form of consideration payable in settlement, method by or forms in which Stock will be delivered or deemed to be delivered to Participants, whether or not an SAR shall be in tandem or in combination with any other Award, and any other terms and conditions of any SAR. SARs may be either freestanding or in tandem with other Awards.

(d) Restricted Stock. The Committee is authorized to grant Restricted Stock to Participants on the following terms and conditions:

(i) Grant and Restrictions. Restricted Stock shall be subject to such restrictions on transferability, risk of forfeiture and other restrictions, if any, as the Committee may impose, which restrictions may lapse separately or in combination at such times, under such circumstances (including based on achievement of performance goals and/or future service requirements), in such installments or otherwise, as the Committee may determine at the date of grant or thereafter. During the restricted period applicable to the Restricted Stock, the Restricted Stock may not be sold, transferred, pledged, hypothecated, margined or otherwise encumbered by the Participant.

(ii) Certificates for Stock. Restricted Stock granted under this Plan may be evidenced in such manner as the Committee shall determine. If certificates representing Restricted Stock are registered in the name of the Participant, the Committee may require that such certificates bear an appropriate legend referring to the terms, conditions and restrictions applicable to such Restricted Stock, that the Company retain physical possession of the certificates, and that the Participant deliver a stock power to the Company, endorsed in blank, relating to the Restricted Stock.

(iii) Dividends and Splits. As a condition to the grant of an Award of Restricted Stock, the Committee may require or permit a Participant to elect that any cash dividends paid on a share of Restricted Stock be automatically reinvested in additional shares of Restricted Stock or applied to the purchase of additional Awards under this Plan. Unless otherwise determined by the Committee, Stock distributed in connection with a Stock split or Stock dividend, and other property distributed as a dividend, shall be subject to restrictions and a risk of forfeiture to the same extent as the Restricted Stock with respect to which such Stock or other property has been distributed.

(e) Restricted Stock Units. The Committee is authorized to grant Restricted Stock Units to Participants, which are rights to receive Stock or cash, as determined by the Committee, at the end of a specified deferral period, subject to the following terms and conditions:

(i) Award and Restrictions. Settlement of an Award of Restricted Stock Units shall occur upon expiration of the deferral period specified for such Restricted Stock Unit by the Committee (or, if permitted by the Committee, as elected by the Participant). In addition, Restricted Stock Units shall be subject to such restrictions (which may include a risk of forfeiture) as the Committee may impose, if any, which restrictions may lapse at the expiration of the deferral period or at earlier specified times (including based on achievement of performance goals and/or future service requirements), separately or in combination, in installments or otherwise, as the Committee may determine. Restricted Stock Units shall be satisfied by the delivery of cash or Stock in the amount equal to the Fair Market Value of the specified number of shares of Stock covered by the Restricted Stock Units, or a combination thereof, as determined by the Committee at the date of grant or thereafter.

(ii) Dividend Equivalents. Unless otherwise determined by the Committee at date of grant, Dividend Equivalents on the specified number of shares of Stock covered by an Award of Restricted Stock Units shall be either (A) paid with respect to such Restricted Stock Units on the dividend payment date in cash or in shares of unrestricted Stock having a Fair Market Value equal to the amount of such dividends, or (B) deferred with respect to such Restricted Stock Units and the amount or value thereof automatically deemed reinvested in additional Restricted Stock Units, other Awards or other investment vehicles, as the Committee shall determine or permit the Participant to elect.

(f) Bonus Stock and Awards in Lieu of Obligations. The Committee is authorized to grant Stock as a bonus, or to grant Stock or other Awards in lieu of obligations to pay cash or deliver other property under this Plan or under other plans or compensatory arrangements, provided that, in the case of Participants subject to section 16 of the Exchange Act, the amount of such grants remains within the discretion of the Committee to the extent necessary to ensure that acquisitions of Stock or other Awards are exempt from liability under section 16(b) of the Exchange Act. Stock or Awards granted hereunder shall be subject to such other terms as shall be determined by the Committee. In the case of any grant of Stock to an officer of the Company, its Parent or a Subsidiary in lieu of salary or other cash compensation, the number of shares granted in place of such compensation shall be reasonable, as determined by the Committee.

(g) Dividend Equivalents. The Committee is authorized to grant Dividend Equivalents to a Participant, entitling the Participant to receive cash, Stock, other Awards, or other property equal in value to dividends paid with respect to a specified number of shares of Stock, or other periodic payments. Dividend Equivalents may be awarded on a free-standing basis or in connection with another Award. The Committee may provide that Dividend Equivalents shall be paid or distributed when accrued or shall be deemed to have been reinvested in additional Stock, Awards, or other investment vehicles, and subject to such restrictions on transferability and risks of forfeiture, as the Committee may specify.

(h) Other Stock-Based Awards. The Committee is authorized, subject to limitations under applicable law, to grant to Participants such other Awards that may be denominated or payable in, valued in whole or in part by reference to, or otherwise based on, or related to, Stock, as deemed by the Committee to be consistent with the purposes of this Plan, including without limitation convertible or exchangeable debt securities, other rights convertible or exchangeable into Stock, purchase rights for Stock, Awards with value and payment contingent upon performance of the Company or any other factors designated by the Committee, and Awards valued by reference to the book value of Stock or the value of securities of or the performance of specified Subsidiaries. The Committee shall determine the terms and conditions of such Awards. Stock delivered pursuant to an Award in the nature of a purchase right granted under this Subsection 6(h) shall be purchased for such consideration, paid for at such times, by such methods, and in such forms, including, without limitation, cash, Stock, other Awards, or other property, as the Committee shall determine. Cash awards, as an element of or supplement to any other Award under this Plan, may also be granted pursuant to this Subsection 6(h).

7. Certain Provisions Applicable to Awards.

(a) Termination of Employment. Except as provided herein, the treatment of an Award upon a termination of employment or any other service relationship by and between a Participant and the Company, its Parent or any Subsidiary shall be specified in the agreement controlling such Award.

(b) Stand-Alone, Additional, Tandem, and Substitute Awards. Awards granted under this Plan may, in the discretion of the Committee, be granted either alone or in addition to, in tandem with, or in substitution or exchange for, any other Award or any award granted under another plan of the Company, its Parent, any Subsidiary, or any business entity to be acquired by the Company, its Parent or a Subsidiary, or any other right of a Participant to receive payment from the Company, its Parent or any Subsidiary. Such additional, tandem and substitute or exchange Awards may be granted at any time. If an Award is granted in substitution or exchange for another Award, the Committee shall require the surrender of such other Award in consideration for the grant of the new Award. In addition, Awards may be granted in lieu of cash compensation, including in lieu of cash amounts payable under other plans of the Company, its Parent or any Subsidiary, in which the value of Stock subject to the Award is equivalent in value to the cash compensation, or in which the exercise price, grant price or purchase price of the Award in the nature of a right that may be exercised is equal to the Fair Market Value of the underlying Stock minus the value of the cash compensation surrendered.

(c) Term of Awards. Except as specified herein, the term of each Award shall be for such period as may be determined by the Committee; provided, however, that in no event shall the term of any Option or SAR exceed a period of ten years (or such shorter term as may be required in respect of an ISO under section 422 of the Code).

(d) Form and Timing of Payment under Awards; Deferrals. Subject to the terms of this Plan and any applicable Award agreement, payments to be made by the Company or a Subsidiary upon the exercise of an Option or other Award or settlement of an Award may be made in such forms as the Committee shall determine, including without limitation cash, Stock, other Awards or other property, and may be made in a single payment or transfer, in installments, or on a deferred basis. Except as otherwise provided herein, the settlement of any Award may be accelerated, and cash paid in lieu of Stock in connection with such settlement, in the discretion of the Committee or upon occurrence of one or more specified events (in addition to a Change in Control). Installment or deferred payments may be required by the Committee (subject to Subsection 10(f) of this Plan, including the consent provisions thereof in the case of any deferral of an outstanding Award not provided for in the original Award agreement) or permitted at the election of the Participant on terms and conditions established by the Committee. Payments may include, without limitation, provisions for the payment or crediting of reasonable interest on installment or deferred payments or the grant or crediting of Dividend Equivalents or other amounts in respect of installment or deferred payments denominated in Stock. Any deferral shall only be allowed as is provided in a separate deferred compensation plan adopted by the Company. This Plan shall not constitute an "employee benefit plan" for purposes of section 3(3) of the Employee Retirement Income Security Act of 1974, as amended.

(e) Forfeiture for Detrimental Activity. Notwithstanding any provision of this Plan to the contrary, if at any time prior to the third anniversary of the most recent termination of an employee's Service with the Company, its Parent or any Subsidiary of the Company, the Committee in its discretion determines that such employee, at any time during his or her most recent Service with the Company, its Parent or any Subsidiary of the Company, or within the three-year period after termination of such Service, engaged in any Detrimental Activity, such employee shall (i) immediately forfeit the right to exercise any and all Options granted to him or her under the Plan, irrespective of whether the Option Shares constitute Vested Shares, and (ii) upon demand by the Committee, promptly return to the Company any or all shares of Stock acquired pursuant to Awards granted to employee under the Plan and all associated dividends. The purchase price per share of Stock returned to the Company under this Section 7(e) will be an amount equal to employee's purchase price per share as reflected in each such Award (the "***Repurchase Price***"), as adjusted pursuant to Section 9. The Company will pay the aggregate Repurchase Price to the employee in cash within 30 days after the date of the written notice to the employee of the Company's exercise of its rights under this Section 7(e). For purposes of the foregoing, cancellation of any indebtedness of the employee to the Company associated with the purchase of the shares will be treated as payment to the employee in cash to the extent of the unpaid principal and any accrued interest canceled. The shares being repurchased will be delivered to the Company by the employee at the same time as the delivery of the Repurchase Price to the employee. If the Committee suspects prior to the third anniversary of the most recent termination of the employee's Service with the Company, its Parent or any Subsidiary of the Company, that the employee has engaged in any Detrimental Activity at any time during his or her most recent Service with the Company, its Parent or any Subsidiary of the Company or

within the three year period after termination of such Service, the exercisability of the employee's Options shall be suspended for as long as the Committee deems necessary (but not to extend past such third anniversary) to permit the investigation and final determination of the veracity of such allegation.

(f) Exemptions from Section 16(b) Liability. It is the intent of the Company that the grant of any Awards to or other transaction by a Participant who is subject to section 16 of the Exchange Act shall be exempt from such section pursuant to an applicable exemption (except for transactions

acknowledged in writing to be non-exempt by such Participant). Accordingly, if any provision of this Plan or any Award agreement does not comply with the requirements of Rule 16b-3 as then applicable to any such transaction, such provision shall be construed or deemed amended to the extent necessary to conform to the applicable requirements of Rule 16b-3 so that such Participant shall avoid liability under section 16(b) of the Exchange Act.

(g) Non-Competition Agreement. Each Participant to whom an Award is granted under this Plan may be required to agree in writing as a condition to the granting of such Award not to engage in conduct in competition with the Company, its Parent or any of its Subsidiaries for a period after the termination of such Participant's employment with the Company and its Parent and Subsidiaries as determined by the Committee.

8. Performance and Annual Incentive Awards.

(a) Performance Conditions. The right of a Participant to exercise or receive a grant or settlement of any Award, and the timing thereof, may be subject to such performance conditions as may be specified by the Committee. The Committee may use such business criteria and other measures of performance as it may deem appropriate in establishing any performance conditions, and may exercise its discretion to reduce or increase the amounts payable under any Award subject to performance conditions, except as limited under Subsections 8(b) and 8(c) hereof in the case of a Performance Award or Annual Incentive Award intended to qualify under section 162(m) of the Code.

(b) Performance Awards Granted to Designated Covered Employees. If the Committee determines that a Performance Award to be granted to an Eligible Person who is designated by the Committee as likely to be a Covered Employee should qualify as "performance-based compensation" for purposes of section 162(m) of the Code, the grant, exercise and/or settlement of such Performance Award may be contingent upon achievement of preestablished performance goals and other terms set forth in this Subsection 8(b).

(i) Performance Goals Generally. The performance goals for such Performance Awards shall consist of one or more business criteria or individual performance criteria and a targeted level or levels of performance with respect to each of such criteria, as specified by the Committee consistent with this Subsection 8(b). Performance goals shall be objective and shall otherwise meet the requirements of section 162(m) of the Code and regulations thereunder (including Treasury Regulation §1.162-27 and successor regulations thereto), including the requirement that the level or levels of performance targeted by the Committee result in the achievement of performance goals being "substantially uncertain." The

Committee may determine that such Performance Awards shall be granted, exercised, and/or settled upon achievement of any one performance goal or that two or more of the performance goals must be achieved as a condition to grant, exercise and/or settlement of such Performance Awards. Performance goals may differ for Performance Awards granted to any one Participant or to different Participants.

(ii) Business and Individual Performance Criteria

(A) Business Criteria. One or more of the following business criteria for the Company, on a consolidated basis, and/or for specified Subsidiaries or business or geographical units of the Company (except with respect to the total stockholder return criteria), shall be used by the Committee in establishing performance goals for such Performance Awards: (1) earnings per share; (2) revenues, (3) increase in revenues; (4) increase in cash flow; (5) increase in cash flow return; (6) return on net assets; (7) return on assets; (8) return on investment; (9) return on capital; (10) return on equity; (11) economic value added; (12) operating margin; (13) contribution margin; (14) net income before taxes; (15) net income after taxes; (16) pretax earnings; (17) pretax earnings before interest, depreciation and amortization; (18) pretax operating earnings after interest expense and before incentives, service fees, and extraordinary or special items; (19) total stockholder return; (20) debt reduction; (21) market share; (22) change in the Fair Market Value of the Stock; and (23) any of the above goals determined on an absolute or relative basis or as compared to the performance of a published or special index deemed applicable by the Committee including, but not limited to, the Standard & Poor's 500 Stock Index or a group of comparable companies. One or more of the foregoing business criteria shall also be exclusively used in establishing performance goals for Annual Incentive Awards granted to a Covered Employee under Subsection 8(c) hereof.

(B) Individual Performance Criteria. The grant, exercise and/or settlement of Performance Awards may also be contingent upon individual performance goals established by the Committee. If required for compliance with section 162(m) of the Code, such criteria shall be approved by the stockholders of the Company.

(iii) Performance Period; Timing for Establishing Performance Goals. Achievement of performance goals in respect of such Performance Awards shall be measured over a performance period of up to ten years, as specified by the Committee. Performance goals shall be established not later than 90 days after the beginning of any performance period applicable to such Performance Awards, or at such other date as may be required or permitted for "performance-based compensation" under section 162(m) of the Code.

(iv) Performance Award Pool. The Committee may establish a Performance Award pool, which shall be an unfunded pool, for purposes of measuring performance of the Company in connection with Performance Awards. The amount of such Performance Award pool shall be based upon the achievement of a performance goal or goals based on one or more of the criteria set forth in Subsection 8(b)(ii) hereof during the given performance period, as specified by the Committee in accordance with Subsection 8(b)(iii) hereof. The Committee may specify the amount of the Performance Award pool as a percentage of any of such criteria, a percentage thereof in excess of a threshold amount, or as another amount which need not bear a strictly mathematical relationship to such criteria.

(v) Settlement of Performance Awards; Other Terms. After the end of each performance period, the Committee shall determine the amount, if any, of (A) the Performance Award pool, and the maximum amount of the potential Performance Award payable to each Participant in the Performance Award pool, or (B) the amount of the potential Performance Award otherwise payable to each Participant. Settlement of such Performance Awards shall be in cash, Stock, other Awards or other property, in the discretion of the Committee. The Committee may, in its discretion, reduce the amount of a settlement otherwise to be made in connection with such Performance Awards, but may not exercise discretion to increase any such amount payable to a Covered Employee in respect of a Performance Award subject to this Subsection 8(b). The Committee shall specify the circumstances in which

such Performance Awards shall be paid or forfeited in the event of termination of employment by the Participant prior to the end of a performance period or settlement of Performance Awards.

(c) Annual Incentive Awards Granted to Designated Covered Employees. If the Committee determines that an Annual Incentive Award to be granted to an Eligible Person who is designated by the Committee as likely to be a Covered Employee should qualify as "performance-based compensation" for purposes of section 162(m) of the Code, the grant, exercise and/or settlement of such Annual Incentive Award shall be contingent upon achievement of preestablished performance goals and other terms set forth in this Subsection 8(c).

(i) Potential Annual Incentive Awards. Not later than the end of the 90th day of each applicable year, or at such other date as may be required or permitted in the case of Awards intended to be "performance-based compensation" under section 162(m) of the Code, the Committee shall determine the Eligible Persons who will potentially receive Annual Incentive Awards, and the amounts potentially payable thereunder, for that fiscal year, either out of an Annual Incentive Award pool established by such date under Subsection 8(c)(i) hereof or as individual Annual Incentive Awards. The amount potentially payable, with respect to Annual Incentive Awards, shall be based upon the achievement of a performance goal or goals based on one or more of the business criteria set forth in Subsection 8(b)(ii) hereof in the given performance year, as specified by the Committee.

(ii) Annual Incentive Award Pool. The Committee may establish an Annual Incentive Award pool, which shall be an unfunded pool, for purposes of measuring performance of the Company in connection with Annual Incentive Awards. The amount of such Annual Incentive Award pool shall be based upon the achievement of a performance goal or goals based on one or more of the business criteria set forth in Subsection 8(b)(ii) hereof during the given performance period, as specified by the Committee in accordance with Subsection 8(b)(iii) hereof. The Committee may specify the amount of the Annual Incentive Award pool as a percentage of any of such business criteria, a percentage thereof in excess of a threshold amount, or as another amount which need not bear a strictly mathematical relationship to such business criteria.

(iii) Payout of Annual Incentive Awards. After the end of each applicable year, the Committee shall determine the amount, if any, of (A) the Annual Incentive Award pool, and the maximum amount of the potential Annual Incentive Award payable to each Participant in the Annual Incentive Award pool, or (B) the amount of the potential Annual

Incentive Award otherwise payable to each Participant. The Committee may, in its discretion, determine that the amount payable to any Participant as a final Annual Incentive Award shall be reduced from the amount of his or her potential Annual Incentive Award, including a determination to make no final Award whatsoever, but may not exercise discretion to increase any such amount in the case of an Annual Incentive Award intended to qualify under section 162(m) of the Code. The Committee shall specify the circumstances in which an Annual Incentive Award shall be paid or forfeited in the event of termination of employment by the Participant prior to the end of the applicable year or settlement of such Annual Incentive Award.

(d) Written Determinations. All determinations by the Committee as to the establishment of performance goals, the amount of any Performance Award pool or potential individual Performance Awards, the achievement of performance goals relating to Performance Awards under Subsection 8(b), the amount of any Annual Incentive Award pool or potential individual Annual Incentive Awards, the achievement of performance goals relating to Annual Incentive Awards under Subsection 8(c) shall be made in writing in the case of any Award intended to qualify under section 162(m) of the Code. The Committee may not delegate any responsibility relating to such Performance Awards or Annual Incentive Awards.

(e) Status of Subsection 8(b) and Subsection 8(c) Awards under Section 162(m) of the Code. It is the intent of the Company that Performance Awards and Annual Incentive Awards under Subsections 8(b) and 8(c) hereof granted to persons who are designated by the Committee as likely to be Covered Employees within the meaning of section 162(m) of the Code and regulations thereunder (including Treasury Regulation §1.162-27 and successor regulations thereto) shall, if so designated by the Committee, constitute "performance-based compensation" within the meaning of section 162(m) of the Code and regulations thereunder. Accordingly, the terms of Subsections 8(b), (c), (d) and (e), including the definitions of Covered Employee and other terms used therein, shall be interpreted in a manner consistent with section 162(m) of the Code and regulations thereunder. The foregoing notwithstanding, because the Committee cannot determine with certainty whether a given Participant will be a Covered Employee with respect to a fiscal year that has not yet been completed, the term Covered Employee as used herein shall mean only a person designated by the Committee, at the time of grant of Performance Awards or an Annual Incentive Award, who is likely to be a Covered Employee with respect to that fiscal year. If any provision of this Plan as in effect on the date of adoption or any agreements relating to Performance Awards or Annual Incentive Awards that are designated as intended to comply with section 162(m) of the Code does not comply or is inconsistent with the requirements of section 162(m) of the Code or regulations thereunder, such provision shall be construed or deemed amended to the extent necessary to conform to such requirements.

9. Subdivision or Consolidation; Recapitalization; Change in Control; Reorganization.

(a) Existence of Plans and Awards. The existence of this Plan and the Awards granted hereunder shall not affect in any way the right or power of the Board or the stockholders of the Company to make or authorize any adjustment, recapitalization, reorganization or other change in the Company's capital structure or its business, any merger or consolidation of the Company, any issue of debt or equity securities ahead of or affecting Stock

or the rights thereof, the dissolution or liquidation of the Company or any sale, lease, exchange or other disposition of all or any part of its assets or business or any other corporate act or proceeding.

(b) Subdivision or Consolidation of Shares. The terms of an Award and the number of shares of Stock authorized pursuant to Section 4 for issuance under the Plan shall be subject to adjustment from time to time, in accordance with the following provisions:

(i) If at any time, or from time to time, the Company shall subdivide as a whole (by a Stock split, by the issuance of a distribution on Stock payable in Stock, or otherwise) the number of shares of Stock then outstanding into a greater number of shares of Stock, then (A) the maximum number of shares of Stock available in connection with the Plan or Awards as provided in Sections 4 and 5 shall be increased proportionately, and the kind of shares or other securities available for the Plan shall be appropriately adjusted, (B) the number of shares of Stock (or other kind of shares or securities) that may be acquired under any Award shall be increased proportionately, and (C) the price (including the exercise price) for each share of Stock

(or other kind of shares or securities) subject to then outstanding Awards shall be reduced proportionately, without changing the aggregate purchase price or value as to which outstanding Awards remain exercisable or subject to restrictions.

(ii) If at any time, or from time to time, the Company shall consolidate as a whole (by reverse Stock split, or otherwise) the number of shares of Stock then outstanding into a lesser number of shares of Stock, (A) the maximum number of shares of Stock available in connection with the Plan or Awards as provided in Sections 4 and 5 shall be decreased proportionately, and the kind of shares or other securities available for the Plan shall be appropriately adjusted, (B) the number of shares of Stock (or other kind of shares or securities) that may be acquired under any Award shall be decreased proportionately, and (C) the price (including the exercise price) for each share of Stock (or other kind of shares or securities) subject to then outstanding Awards shall be increased proportionately, without changing the aggregate purchase price or value as to which outstanding Awards remain exercisable or subject to restrictions.

(iii) Whenever the number of shares of Stock subject to outstanding Awards and the price for each share of Stock subject to outstanding Awards are required to be adjusted as provided in this Subsection 9(b), the Committee shall promptly prepare, and deliver to each Participant, a notice setting forth, in reasonable detail, the event requiring adjustment, the amount of the adjustment, the method by which such adjustment was calculated, and the change in price and the number of shares of Stock, other securities, cash, or property purchasable subject to each Award after giving effect to the adjustments.

(iv) Adjustments under Subsections 9(b)(i) and (ii) shall be made by the Committee, and its determination as to what adjustments shall be made and the extent thereof shall be final, binding, and conclusive. No fractional interest shall be issued under the Plan on account of any such adjustments.

(c) Corporate Recapitalization.

(i) If the Company recapitalizes, reclassifies its capital stock, or otherwise changes its capital structure (a "***recapitalization***"), the number and class of shares of Stock covered by an Option or an SAR theretofore granted shall be adjusted so that such Option or SAR shall thereafter cover the number and class of shares of stock and securities to which the holder would have been entitled pursuant to the terms of the recapitalization if, immediately prior to the recapitalization, the holder had been the holder of record of the number of shares of Stock then covered by such Option or SAR and the share limitations provided in Sections 4 and 5 shall be adjusted in a manner consistent with the recapitalization.

(ii) In the event of changes in the outstanding Stock by reason of recapitalization, reorganizations, mergers, consolidations, combinations, exchanges or other relevant changes in capitalization occurring after the date of the grant of any Award and not otherwise provided for by this Section 9, any outstanding Awards and any agreements evidencing such Awards shall be subject to adjustment by the Committee at its discretion as to the number and price of shares of Stock or other consideration subject to such Awards. In the event of any such change in the outstanding Stock, the share limitations provided in Sections 4 and 5 may be appropriately adjusted by the Committee, whose determination shall be conclusive.

(d) Additional Issuances. Except as hereinbefore expressly provided, the issuance by the Company of shares of stock of any class or securities convertible into shares of stock of any class, for cash, property, labor or services, upon direct sale, upon the exercise of rights or warrants to subscribe therefor, or upon conversion of shares or obligations of the Company convertible into such shares or other securities, and in any case whether or not for fair value, shall not affect, and no adjustment by reason thereof shall be made with respect to, the number of shares of Stock subject to Awards theretofore granted or the purchase price per share, if applicable.

(e) Change in Control. Upon a Change in Control the Committee, acting in its sole discretion without the consent or approval of any holder, shall affect one or more of the following alternatives, which may vary among individual holders and which may vary among Options or SARs (collectively "***Grants***") held by any individual holder: (i) accelerate the time at which Grants then outstanding may be exercised so that such Grants may be exercised in full for a limited period of time on or before a specified date (before or after such Change in Control) fixed by the Committee, after which specified date all unexercised Grants and all rights of holders thereunder shall terminate, (ii) require the mandatory surrender to the Company by selected holders of some or all of the outstanding Grants held by such holders (irrespective of whether such Grants are then exercisable under the provisions of this Plan) as of a date, before or after such Change in Control, specified by the Committee, in which event the Committee shall thereupon cancel such Grants and pay to each holder an amount of cash per share equal to the excess, if any, of the amount calculated in Subsection 9(f) (the "***Change in Control Price***") of the shares subject to such Grants over the exercise price(s) under such Grants for such shares, or (iii) make such adjustments to Grants then outstanding as the Committee deems appropriate to reflect such Change in Control; provided, however, that the Committee may determine in its sole discretion that no adjustment is necessary to Grants then outstanding; provided, further, however, that the right to make such adjustments shall include, but not be limited to, the modification of

Grants such that the holder of the Grant shall be entitled to purchase or receive (in lieu of the total shares or other consideration that the holder would otherwise be entitled to purchase or receive under the Grant (the "***Total Consideration***")), the number of shares of stock, other securities, cash or property to which the Total Consideration would have been entitled to in connection with the Change in Control (A) (in the case of Options), at an aggregate exercise price equal to the exercise price that would have been payable if the total shares had been purchased upon the exercise of the Grant immediately before the consummation of the Change in Control and (B) (in the case of SARs) if the SARs had been exercised immediately before the consummation of the Change in Control.

(f) Change in Control Price. The "***Change in Control Price***" shall equal the amount determined in clause (i), (ii), (iii), (iv) or (v), whichever is applicable, as follows: (i) the per share price offered to holders of Stock in any merger or consolidation, (ii) the per share value of the Stock immediately before the Change in Control without regard to assets sold in the Change in Control and assuming the Company has received the consideration paid for the assets in the case of a sale of the assets, (iii) the amount distributed per share of Stock in a dissolution transaction, (iv) the price per share offered to holders of Stock in any tender offer or exchange offer whereby a Change in Control takes place, or (v) if such Change in Control occurs other than pursuant to a transaction described in clauses (i), (ii), (iii), or (iv) of this Subsection 9(f), the Fair Market Value per share of the shares that may otherwise be obtained with respect to such Grants or to which such Grants track, as determined by the Committee as of the date determined by the Committee to be the date of

cancellation and surrender of such Grants. In the event that the consideration offered to stockholders of the Company in any transaction described in this Subsection 9(f) or Subsection 9(e) consists of anything other than cash, the Committee shall determine the fair cash equivalent of the portion of the consideration offered which is other than cash.

10. General Provisions.

(a) Restricted Securities. Prior to a Qualifying Public Offering, the Stock to be issued under this Plan, which may be issued in reliance on the exemption from registration set forth in Rule 701 or another exemption to registration under the Securities Act, shall be deemed to be "restricted securities" as defined in Rule 144, promulgated by the Securities and Exchange Commission under the Securities Act as from time to time in effect and applicable to the Plan and Participants. Resales of such Stock by the holder thereof shall be in compliance with the Securities Act or an exemption therefrom. Such Stock may bear a legend if determined necessary by the Committee in substantially the following form:

"THE SHARES OF STOCK REPRESENTED BY THIS CERTIFICATE HAVE NOT BEEN REGISTERED UNDER THE SECURITIES ACT OF 1933, AS AMENDED, OR ANY STATE SECURITIES LAWS. THE SHARES MAY NOT BE OFFERED FOR SALE, SOLD, PLEDGED, TRANSFERRED, OR OTHERWISE DISPOSED OF UNTIL THE HOLDER HEREOF PROVIDES EVIDENCE SATISFACTORY TO MIRNA THERAPEUTICS, INC. (WHICH, IN THE DISCRETION OF MIRNA THERAPEUTICS, INC., MAY INCLUDE AN OPINION OF COUNSEL SATISFACTORY TO MIRNA THERAPEUTICS, INC.) THAT SUCH OFFER, SALE, PLEDGE, TRANSFER, OR OTHER

DISPOSITION WILL NOT VIOLATE APPLICABLE FEDERAL OR STATE LAWS."

(b) Transferability.

(i) Permitted Transferees. The Committee may, in its discretion, permit a Participant to transfer all or any portion of an Option, or authorize all or a portion of an Option to be granted to an Eligible Person to be on terms which permit transfer by such Participant; provided that, in either case the transferee or transferees must be any child, stepchild, grandchild, parent, stepparent, grandparent, spouse, former spouse, sibling, niece, nephew, mother-in-law, father-in-law, son-in-law, daughter-in-law, brother-in-law, or sister-in-law, including adoptive relationships, in each case with respect to the Participant, any person sharing the Participant's household (other than a tenant or employee of the Company), a trust in which these persons have more than fifty percent of the beneficial interest, a foundation in which these persons (or the Participant) control the management of assets, or any other entity in which these persons (or the Participant) own more than fifty percent of the voting interests (collectively, "***Permitted Transferees***"); provided further that, (X) there may be no consideration for any such transfer and (Y) subsequent transfers of Options transferred as provided above shall be prohibited except subsequent transfers back to the original holder of the Option and transfers to other Permitted Transferees of the original holder. Agreements evidencing Options with respect to which such transferability is authorized at the time of grant must be approved by the Committee, and must expressly provide for transferability in a manner consistent with this Subsection 10(b)(i).

(ii) Qualified Domestic Relations Orders. An Option, Stock Appreciation Right, Restricted Stock Unit Award, Restricted Stock Award or other Award may be transferred, to a Permitted Transferee, pursuant to a domestic relations order entered or approved by a court of competent jurisdiction upon delivery to the Company of written notice of such transfer and a certified copy of such order.

(iii) Other Transfers. Except as expressly permitted by Subsections 10(b)(i) and 10(b)(ii), Awards shall not be transferable other than by will or the laws of descent and distribution. Notwithstanding anything to the contrary in this Section 10, an Incentive Stock Option shall not be transferable other than by will or the laws of descent and distribution.

(iv) Effect of Transfer. Following the transfer of any Award as contemplated by Subsections 10(b)(i), 10(b)(ii) and 10(b)(iii), (A) such Award shall continue to be subject to the same terms and conditions as were applicable immediately prior to transfer, provided that the term "***Participant***" shall be deemed to refer to the Permitted Transferee, the recipient under a qualified domestic relations order, or the estate or heirs of a deceased Participant, as applicable, to the extent appropriate to enable the Participant to exercise the transferred Award in accordance with the terms of this Plan and applicable law and (B) the provisions of the Award relating to exercisability shall continue to be applied with respect to the original Participant and, following the occurrence of any applicable events described therein the Awards shall be exercisable by the Permitted Transferee, the recipient under a qualified domestic

relations order, or the estate or heirs of a deceased Participant, as applicable, only to the extent and for the periods that would have been applicable in the absence of the transfer.

(v) Procedures and Restrictions. Any Participant desiring to transfer an Award as permitted under Subsections 10(b)(i), 10(b)(ii) or 10(b)(iii) shall make application therefor in the manner and time specified by the Committee and shall comply with such other requirements as the Committee may require to assure compliance with all applicable securities laws. The Committee shall not give permission for such a transfer if (A) it would give rise to short swing liability under section 16(b) of the Exchange Act or (B) it may not be made in compliance with all applicable federal, state and foreign securities laws.

(vi) Registration. To the extent the issuance to any Permitted Transferee of any shares of Stock issuable pursuant to Awards transferred as permitted in this Subsection 10(b) is not registered pursuant to the effective registration statement of the Company generally covering the shares to be issued pursuant to this Plan to initial holders of Awards, the Company shall not have any obligation to register the issuance of any such shares of Stock to any such transferee.

(c) Right of First Refusal. If any Participant ("***Transferor***"), regardless of whether such Participant is the original holder of the Award contemplated in this Subsection 10(c), proposes to sell, transfer, assign, hypothecate, make gifts of or in any manner dispose of, encumber, or alienate (each individually constituting a "***Transfer***") to a transferee, any Stock, obtained in connection with any Award held by such Transferor, either pursuant to a bona fide offer ("***Offer***") from a potential transferee ("***Offeror***") or by effecting a gift of the Stock ("***Gift***") to a donee ("***Donee***") without consideration, then the Transferor must comply with the provisions of this Subsection 10(c), including, without limitation, acknowledging and allowing the applicable time periods

to lapse with respect to the rights of the Company as provided herein, before accepting any such Offer or otherwise affecting the Transfer of any Stock pursuant to such Offer, or affecting any such Gift.

(i) Statement of Offer. Before accepting any Offer or affecting any Gift, the Transferor shall obtain from the Offeror or Donee, as the case may be, a statement ("***Statement***") in writing addressed to the Transferor and signed by the Offeror or Donee, setting forth: (i) the date of the Statement (the "***Statement Date***"); (ii) the number of shares of Stock covered by the Offer or Gift and, in the case of an Offer, the price per share to be paid by the Offeror and the terms of payment of such price; (iii) the Offeror's or Donee's willingness to be bound by the terms of this Subsection 10(c) and execute and deliver to the Company such documentation as required under this Subsection 10(c); (iv) the Offeror's or Donee's name, address and telephone number; and (v) the Offeror's or Donee's willingness to supply any additional information about himself or herself as may be reasonably requested by the Company. Promptly upon receipt of a Statement, and before accepting the Offer or affecting the Gift to which the Statement relates, the Transferor shall deliver to the Company (1) a copy of the Statement, and (2) in the case of an Offer, evidence reasonably satisfactory to the Company as to the Offeror's financial ability to consummate the proposed purchase.

(ii) Company Rights. Subject to the provisions of Subsection 10(c)(i), upon receipt of a copy of the Statement, the Company shall have the exclusive right and option

(the "***Right***"), but not the obligation, to purchase all of the shares of Stock that the Offeror proposes to purchase from the Transferor or, in the case of a Gift, that the Transferor proposes to give to the Donee (collectively, "***Subject Securities***") (A) in the case of an Offer, for the per share price and on the terms as set forth in the Statement; provided, however, that if the purchase price is payable in whole or in part in property (which term shall include the securities of any issuer other than the Company) other than cash, the Company may pay, in lieu of such property, a sum of cash equal to the fair market value of such property as determined by the Transferor and the Company in good faith or, if the Transferor and the Company do not agree on the fair market value of such property within five days after the Company delivers written notice (as described below) of its intention to exercise the Right, then the Transferor and the Company shall select one independent appraiser (with each of the Transferor and the Company jointly bearing one-half of the expense of the appraiser) to determine the fair market value of that property and the appraised fair market value of that property as determined by such appraiser shall be deemed the fair market value of that property for purposes of this Subsection 10(c)(ii), or (B) in the case of a Gift, the Fair Market Value of the Subject Securities, as determined in good faith by the Company; provided that the Transferor may elect to retain the Subject Securities rather than sell the Subject Securities at the Fair Market Value as determined by the Company by giving written notice thereof to the Company within five days after such determination by the Company is received in writing by the Transferor. The Company shall exercise the Right by giving written notice thereof to the Transferor. Upon exercising the Right, the Company shall have the obligation, to the extent it lawfully may do so, to purchase the Subject Securities within 30 days after the date of the Company's receipt of its copy of the Statement on and subject to the terms and conditions hereof. If the terms of the purchase include the Transferor's release of any pledge or encumbrance on the Subject Securities and the Transferor shall have failed to obtain the release of the pledge or encumbrance by the purchase date, at the Company's option the purchase shall occur on the scheduled date with the purchase price reduced to the extent of all unpaid indebtedness for which the Subject Securities are then pledged or encumbered. Failure by the Company to exercise the Right, or failure by the Company to otherwise perform its obligations under this Subsection 10(c)(ii), within the 30 day period herein prescribed shall be deemed an election by the Company not to exercise the Right. If the Company exercises the Right and is unable for any reason to perform its obligations thereunder in accordance with this Subsection 10(c), the Company may assign all or a portion of its rights under the Right to any one or more of the Company's stockholders (other than the Transferor) ("***Assignee Stockholder***"), as the Board shall determine, in its sole and absolute discretion.

(iii) Purchase of Less Than All Shares. Anything in Subsection 10(c) to the contrary notwithstanding, the Company and any Assignee Stockholder individually may, pursuant to the exercise of the Right, purchase fewer than all of the Subject Securities provided that such Persons in the aggregate purchase all, and not less than all, of the Subject Securities, and it shall be a condition precedent to the obligation of any of such Persons to purchase any Subject Securities, that all, and not less than all, of the Subject Securities have been elected to be purchased pursuant to the exercise of the Right.

(iv) Failure to Exercise Right or Consummate Transaction. If the Company elects not to exercise the Right, or if the Right is exercised and the obligations to be performed thereunder by the Company are not performed in accordance with this Subsection 10(c), or if the Company's rights are assigned to an Assignee Stockholder and such

Assignee Stockholder fails to perform his or her obligations under the assigned Right in accordance with this Subsection 10(c), then, subject to the application of any applicable state or federal securities laws, the Transferor may dispose of all of the Subject Securities within 90 days after the date of the Statement at the per share price and on the terms, if any, as set forth in the Statement free and clear of the terms of this Subsection 10(c); provided, however, that (A) any subsequent transfer by the Offeror or Donee, as applicable, shall once again be subject to this Subsection 10(c) and (B) if the sale or gift of the Subject Securities is not consummated within such 90-day period, then the Transfer of any such Stock shall once again be subject to the terms of this Subsection 10(c).

(v) Legend. To assure the enforceability of the Company's rights under this Subsection 10(c), until the date of a Qualifying Public Offering, each certificate or instrument representing Stock or an Award held by him, her, or it may, in the Committee's discretion, bear a conspicuous legend in substantially the following form:

> "THE SHARES [REPRESENTED BY THIS CERTIFICATE] [ISSUABLE PURSUANT TO THIS AGREEMENT] ARE SUBJECT TO THE COMPANY'S RIGHT OF FIRST REFUSAL IN THE CASE OF A TRANSFER AS PROVIDED UNDER THE COMPANY'S 2008 LONG TERM INCENTIVE PLAN AND/OR AN AWARD AGREEMENT ENTERED INTO PURSUANT THERETO. COPIES OF SUCH PLAN AND AWARD AGREEMENT ARE AVAILABLE UPON WRITTEN REQUEST TO THE COMPANY AT ITS PRINCIPAL EXECUTIVE OFFICES."

(vi) Expiration. The rights and obligations pursuant to this Subsection 10(c) hereof will terminate upon the date of a Qualifying Public Offering.

(d) Purchase Option.

(i) Except as otherwise expressly provided in any particular Award, (A) if a Participant ceases to be employed by or perform services for the Company or its Parent or Subsidiaries for any reason at any time or (B) upon the occurrence of a Change in Control, the Company (and/or its designee(s)) shall have the option (the "***Purchase Option***") to purchase, and the Participant (or the Participant's executor or the administrator of the Participant's estate in the event of the Participant's death, or the transferee of the Stock or Award in the case of any disposition, or the Participant's legal representative in the event of the Participant's incapacity) (hereinafter, collectively with such Participant, the "***Grantor***") shall sell to the Company and/or its designee(s), all or any portion (at the Company's option) of the shares of Stock issued pursuant to this Plan and held by the Grantor (such shares of Stock herein referred to as the "***Purchasable Shares***").

(ii) The Company shall give notice in writing to the Grantor of the exercise of the Purchase Option within one year of the date of the termination of the Participant's employment or service relationship or the date of the Change in Control. Such notice shall state the number of Purchasable Shares to be purchased and the determination of the Board of the Fair

Market Value per share of such Purchasable Shares, or the Change in Control Price as defined in Subsection 9(f), if applicable. If no notice is given within the time limit specified above, the Purchase Option shall terminate.

(iii) The purchase price to be paid for the Purchasable Shares purchased pursuant to the Purchase Option shall be, the Fair Market Value per share, or the Change in Control Price if applicable, as of the date of the notice of exercise of the Purchase Option times the number of shares being purchased. The purchase price shall be paid in cash. The closing of such purchase shall take place at the Company's principal executive offices within ten (10) days after the purchase price has been determined. At such closing, the Grantor shall deliver to the purchasers the certificates or instruments evidencing the Purchasable Shares being purchased free and clear of all liens and encumbrances (if any), duly endorsed (or accompanied by duly executed stock powers) and otherwise in good form for delivery, against payment of the purchase price by check of the purchasers. In the event that, notwithstanding the foregoing, the Grantor shall have failed to obtain the release of any pledge or other encumbrance on any Purchasable Shares by the scheduled closing date, at the option of the purchasers, the closing shall nevertheless occur on such scheduled closing date, with the cash purchase price being reduced to the extent of all unpaid indebtedness for which such Purchasable Shares are then pledged or encumbered.

(iv) To assure the enforceability of the Company's rights under this Subsection 10(d), until the date of a Qualifying Public Offering, each certificate or instrument representing Stock or an Award held by him, her, or it may, in the Committee's discretion, bear a conspicuous legend in substantially the following form:

> "THE SHARES [REPRESENTED BY THIS CERTIFICATE] [ISSUABLE PURSUANT TO THIS AGREEMENT] ARE SUBJECT TO AN OPTION TO REPURCHASE PROVIDED UNDER THE PROVISIONS OF THE COMPANY'S 2008 LONG TERM INCENTIVE PLAN AND/OR AN AWARD AGREEMENT ENTERED INTO PURSUANT THERETO. COPIES OF SUCH PLAN AND AWARD AGREEMENT ARE AVAILABLE UPON WRITTEN REQUEST TO THE COMPANY AT ITS PRINCIPAL EXECUTIVE OFFICES."

(v) The Company's rights under this Subsection 10(d) shall terminate upon the date of a Qualifying Public Offering.

(e) Taxes. The Company, its Parent and any Subsidiary is authorized to withhold from any Award granted, or any payment relating to an Award under this Plan, including from a distribution of Stock, amounts of withholding and other taxes due or potentially payable in connection with any transaction involving an Award, and to take such other action as the Committee may deem advisable to enable the Company, its Parent or any Subsidiary and Participants to satisfy obligations for the payment of withholding taxes and other tax obligations relating to any Award. This authority shall include authority to withhold or receive Stock or other property and to make cash payments in respect thereof in satisfaction of a Participant's tax obligations, either on a mandatory or elective basis in the discretion of the Committee.

(f) Changes to this Plan and Awards. The Board may amend, alter, suspend, discontinue or terminate this Plan or the Committee's authority to grant Awards under this Plan without the consent of stockholders or Participants, except that any amendment or alteration to this Plan, including any increase in any share limitation, shall be subject to the approval of the Company's stockholders not later than the annual meeting next following such Board action if such stockholder approval is required by any federal or state law or regulation or the rules of any stock exchange or automated quotation system on which the Stock may then be listed or quoted, and the Board may otherwise, in its discretion, determine to submit other such changes to this Plan to stockholders for approval; provided, however, that, without the consent of an affected Participant, no such Board action may materially and adversely affect the rights of such Participant under any previously granted and outstanding Award. The Committee may waive any conditions or rights under, or amend, alter, suspend, discontinue or terminate any Award theretofore granted and any Award agreement relating thereto, except as otherwise provided in this Plan; provided, however, that, without the consent of an affected Participant, no such Committee action may materially and adversely affect the rights of such Participant under such Award.

(g) Limitation on Rights Conferred under Plan. Neither this Plan nor any action taken hereunder shall be construed as (i) giving any Eligible Person or Participant the right to continue as an Eligible Person or Participant or in the employ or service of the Company, its Parent or a Subsidiary, (ii) interfering in any way with the right of the Company, its Parent or a Subsidiary to terminate any Eligible Person's or Participant's employment or service relationship at any time, (iii) giving an Eligible Person or Participant any claim to be granted any Award under this Plan or to be treated uniformly with other Participants or employees or other service providers, or (iv) conferring on a Participant any of the rights of a stockholder of the Company unless and until the Participant is duly issued or transferred shares of Stock in accordance with the terms of an Award.

(h) Unfunded Status of Awards. This Plan is intended to constitute an "unfunded" plan for certain incentive awards.

(i) Nonexclusivity of this Plan. Neither the adoption of this Plan by the Board nor its submission to the stockholders of the Company for approval shall be construed as creating any limitations on the power of the Board or a committee thereof to adopt such other incentive arrangements as it may deem desirable, including incentive arrangements and awards which do not qualify under section 162(m) of the Code. Nothing contained in this Plan

shall be construed to prevent the Company, its Parent or any Subsidiary from taking any corporate action which is deemed by the Company, its Parent or such Subsidiary to be appropriate or in its best interest, whether or not such action would have an adverse effect on this Plan or any Award made under this Plan. No employee, beneficiary or other person shall have any claim against the Company, its Parent or any Subsidiary as a result of any such action.

(j) Fractional Shares. No fractional shares of Stock shall be issued or delivered pursuant to this Plan or any Award. The Committee shall determine whether cash, other Awards or other property shall be issued or paid in lieu of such fractional shares or whether such fractional shares or any rights thereto shall be forfeited or otherwise eliminated.

(k) Severability. If any provision of this Plan is held to be illegal or invalid for any reason, the illegality or invalidity shall not affect the remaining provisions hereof, but such provision shall be fully severable and the Plan shall be construed and enforced as if the illegal or invalid provision had never been included herein. If any of the terms or provisions of this Plan or any Award agreement conflict with the requirements of Rule 16b-3 (as those terms or provisions are applied to Eligible Persons who are subject to section 16(b) of the Exchange Act) or section 422 of the Code (with respect to Incentive Stock Options), then those conflicting terms or provisions shall be deemed inoperative to the extent they so conflict with the requirements of Rule 16b-3 (unless the Board or the Committee, as appropriate, has expressly determined that the Plan or such Award should not comply with Rule 16b-3) or section 422 of the Code. With respect to Incentive Stock Options, if this Plan does not contain any provision required to be included herein under section 422 of the Code, that provision shall be deemed to be incorporated herein with the same force and effect as if that provision had been set out at length herein; provided, further, that, to the extent any Option that is intended to qualify as an Incentive Stock Option cannot so qualify, that Option (to that extent) shall be deemed an Option not subject to section 422 of the Code for all purposes of the Plan.

(l) Governing Law. All questions arising with respect to the provisions of the Plan and Awards shall be determined by application of the laws of the State of Delaware, without giving effect to any conflict of law provisions thereof, except to the extent Delaware law is preempted by federal law. The obligation of the Company to sell and deliver Stock hereunder is subject to applicable federal and state laws and to the approval of any governmental authority required in connection with the authorization, issuance, sale, or delivery of such Stock.

(m) Conditions to Delivery of Stock. Nothing herein or in any Award granted hereunder or any Award agreement shall require the Company to issue any shares with respect to any Award if that issuance would, in the opinion of counsel for the Company, constitute a violation of the Securities Act or any similar or superseding statute or statutes, any other applicable statute or regulation, or the rules of any applicable securities exchange or securities association, as then in effect. At the time of any exercise of an Option or Stock Appreciation Right, or at the time of any grant of a Restricted Stock Award, Restricted Stock Unit, or other Award the Company may, as a condition precedent to the exercise of such Option or Stock Appreciation Right or settlement of any Restricted Stock Award, Restricted Stock Unit or other Award, require from the Participant (or in the event of his or her death, his or her legal representatives, heirs, legatees, or distributees) such written representations, if any, concerning the holder's intentions with regard to the retention or disposition of the shares of Stock being acquired pursuant to the Award and such written covenants and agreements, if any, as to the manner of disposal of such shares as, in the opinion of counsel to the Company, may be necessary to ensure that any disposition by that holder (or in the event of the holder's death, his or her legal representatives, heirs, legatees, or distributees) will not involve a violation of the Securities Act or any similar or superseding statute or statutes, any other applicable state or federal statute or regulation, or any rule of any applicable securities exchange or securities association, as then in effect.

(n) Plan Effective Date. This Plan has been adopted by the Board effective as of May 15, 2008.

MIRNA THERAPEUTICS, INC.
2150 Woodward St. #100
Austin, Texas 78744

, 20

NOTICE OF GRANT OF STOCK OPTION

Pursuant to the terms and conditions of the Mirna therapeutics, Inc. 2008 Long Term Incentive Plan, attached as Appendix A (the "Plan"), and the associated Stock Option Agreement, attached as Appendix B (the "Option Agreement"), you are hereby granted an option (this "Option") to purchase shares of Stock under the conditions set forth below, in the Option Agreement, and in the Plan. Capitalized terms used but not defined herein shall have the meanings set forth in the Plan.

Type of Option: Check one (and only one) of the following:

o **Incentive Stock Option** (This Option **is** intended to be an Incentive Stock Option (as defined in the Plan).)

o **Nonstatutory Stock Option** (This Option **is not** intended to be an Incentive Stock Option (as defined in the Plan).)

Optionee:

Date of Grant: , 20 ("Date of Grant")

Vesting Commencement Date: , 20 ("Vesting Commencement Date")

Number of Shares:

Option Price: $ per share.

Note: In the case of an Incentive Stock Option, the Option Price must be at least 100% (or, in the case of a 10% shareholder of the Company, 110%) of the Fair Market Value (as defined in the Plan) of a share of Stock on the Date of Grant.

Expiration Date: , 20 .

Note: In the case of an Incentive Stock Option, this date cannot be more than ten years (or in the case of a 10% shareholder of the Company, more than five years) from the Date of Grant.

Vesting Schedule: Subject to the other terms and conditions set forth herein, the Option Agreement and in the Plan, this Option may be exercised in cumulative installments as follows, provided that you remain in the employ of or a service provider to the Company or its Subsidiaries until the following applicable dates:

By your signature and the signature of the Company's representative below, you and the Company hereby acknowledge your receipt of this Option granted on the Grant Date indicated above, which has been issued to you under the terms and conditions of the Plan and the Option Agreement. You further acknowledge receipt of the copy of the Plan and Option Agreement and agree to all of the terms and conditions of the Plan and the Option Agreement, which are incorporated in this Option by reference.

You understand and acknowledge that if the purchase price of the Stock under this Option is less than the Fair Market Value of such Stock on the date of grant of this Option, then you may incur adverse tax consequences under sections 409A and/or 422 of the Code. You acknowledge and agree that (a) you are not relying upon any determination by the Company, its affiliates, or any of their respective employees, directors, officers, attorneys or agents (collectively, the "Company Parties") of the Fair Market Value of the Stock on the Date of Grant, (b) you are not relying upon any written or oral statement or representation of the Company Parties regarding the tax effects associated with your execution of this Notice and your receipt, holding and exercise of this Option, and (c) in deciding to enter into this Notice, you are relying on your own judgment and the judgment of the professionals of your choice with whom you have consulted. You hereby release, acquit and forever discharge the Company Parties from all actions, causes of actions, suits, debts, obligations, liabilities, claims, damages, losses, costs and expenses of any nature whatsoever, known or unknown, on account of, arising out of, or in any way related to the tax effects associated with your execution of this Notice and your receipt, holding and exercise of this Option.

Note: To accept the grant of this Option, you must execute this form and return an executed copy to (the "Designated Recipient") by . Failure to return the executed copy to the Designated Recipient by such date will render this Option invalid.

By: _____
Name: _____
Title: _____

Accepted by:

[OPTIONEE]

By: _____
Date: _____

[DESIGNATED RECIPIENT]

By: _____
Date Received: _____

Attachments: Appendix A — Mirna therapeutics, Inc. 2008 Long Term Incentive Plan
Appendix B — Stock Option Agreement

APPENDIX A

MIRNA THERAPEUTICS, INC. 2008 LONG TERM INCENTIVE PLAN

APPENDIX B

STOCK OPTION AGREEMENT

MIRNA THERAPEUTICS, INC.
2008 LONG TERM INCENTIVE PLAN

STOCK OPTION AGREEMENT

This Agreement is made and entered into as of the Date of Grant set forth in the Notice of Grant of Stock Option ("**Notice of Grant**") by and between Mirna therapeutics, Inc., a Delaware corporation (the "**Company**"), and you:

WHEREAS, the Company, in order to induce you to enter into and continue in dedicated service to the Company and to materially contribute to the success of the Company, agrees to grant you an option to acquire an interest in the Company through the purchase of shares of stock of the Company;

WHEREAS, the Company adopted the Mirna therapeutics, Inc. 2008 Long Term Incentive Plan as it may be amended from time to time (the "**Plan**") under which the Company is authorized to grant stock options to certain employees and service providers of the Company;

WHEREAS, a copy of the Plan has been furnished to you and shall be deemed a part of this stock option agreement (the "**Agreement**") as if fully set forth herein and terms capitalized but not defined herein shall have the meaning set forth in the Plan; and

WHEREAS, you desire to accept the option created pursuant to the Agreement.

NOW, THEREFORE, in consideration of the mutual covenants set forth herein and for other valuable consideration hereinafter set forth, the parties agree as follows:

1. The Grant. Subject to the conditions set forth below, the Company hereby grants to you, effective as of the Date of Grant set forth in the Notice of Grant, as a matter of separate inducement and not in lieu of any salary or other compensation for your services for the Company, the right and option to purchase (the "**Option**"), in accordance with the terms and conditions set forth herein and in the Plan, an aggregate of the number of shares of Stock set forth in the Notice of Grant (the "**Option Shares**"), at the Exercise Price set forth in the Notice of Grant.

2. Exercise.

(a) Option Shares shall be deemed "Nonvested Shares" unless and until they have become "Vested Shares." The Option shall in all events terminate at the close of business on the tenth (10) anniversary of the date of this Agreement (the "**Expiration Date**"). Subject to other terms and conditions set forth herein, the Option may be exercised in cumulative installments in accordance with the vesting schedule set forth in the Notice of Grant, provided, that you remain in the employ of or a service provider to the Company or its Subsidiaries until the applicable dates set forth therein.

(b) Subject to the relevant provisions and limitations contained herein and in the Plan, you may exercise the Option to purchase all or a portion of the applicable number of

Vested Shares at any time prior to the termination of the Option pursuant to this Option Agreement. No less than 100 Vested Shares may be purchased at any one time unless the number purchased is the total number of Vested Shares at that time purchasable under the Option. In no event shall you be entitled to exercise the Option for any Nonvested Shares or for a fraction of a Vested Share.

(c) Any exercise by you of the Option shall be in writing addressed to the Secretary of the Company at its principal place of business. Exercise of the Option shall be made by delivery to the Company by you (or other person entitled to exercise the Option as provided hereunder) of (i) an executed "Notice of Stock Option Exercise," and (ii) payment of the aggregate purchase price for shares purchased pursuant to the exercise.

(d) Payment of the Exercise Price may be made, at your election, with the approval of the Company, (i) in cash, by certified or official bank check or by wire transfer of immediately available funds, (ii) by delivery to the Company of a number of shares of Stock having a Fair Market Value as of the date of exercise equal to the Exercise Price, (iii) by the delivery of a note, or (iv) by net issue exercise, pursuant to which the Company will issue to you a number of shares of Stock as to which the Option is exercised, less a number of shares with a Fair Market Value as of the date of exercise equal to the Exercise Price.

(e) If you are on leave of absence for any reason, the Company may, in its sole discretion, determine that you will be considered to still be in the employ of or providing services for the Company, provided, that rights to the Option will be limited to the extent to which those rights were earned or vested when the leave or absence began.

(f) The terms and provisions of the employment agreement or consulting agreement, if any, between you and the Company or any Subsidiary (the "**Employment Agreement**") that relate to or affect the Option are incorporated herein by reference. Notwithstanding the foregoing provisions of this Section 2 or Section 3, in the event of any conflict or inconsistency between the terms and conditions of this Section 2 or Section 3 and the terms and conditions of the Employment Agreement, the terms and conditions of the Employment Agreement shall be controlling.

3. Effect of Termination of Service on Exercisability. Except as provided in Sections 6 and 7 or an Employment Agreement, this Option may be exercised only while you continue to perform services for the Company or any Subsidiary and will terminate and cease to be exercisable upon termination of your service, *except* as follows:

(a) Termination on Account of Disability. If your service with the Company or any Subsidiary terminates by reason of disability (within the meaning of section 22(e)(3) of the Code), this Option may be exercised by you (or your estate or the person who acquires this Option by will or the laws of descent and distribution or otherwise by reason of your death) at any time during the period ending on the earlier to occur of (i) the date that is one year following such termination, or (ii) the Expiration Date, but only to the extent this Option was exercisable for Vested Shares as of the date your service so terminates.

(b) Termination on Account of Death. If you cease to perform services for the Company or any Subsidiary due to your death, your estate, or the person who acquires this Option by will or the laws of descent and distribution or otherwise by reason of your death, may exercise this Option at any time during the period ending on the earlier to occur of (i) the date that is one year following your death, or (ii) the Expiration Date, but only to the extent this Option was exercisable for Vested Shares as of the date of your death.

(c) Termination not for Cause. If your service with the Company or any Subsidiary terminates for any reason other than as described in Sections 3(a) or (b), unless such service is terminated for Cause (as defined below), this Option may be exercised by you at any time during the period ending on the earlier to occur of (i) the date that is three months following your termination, or (ii) the Expiration Date, or by your estate (or the person who acquires this Option by will or the laws of descent and distribution or otherwise by reason of your death) during a period of one year following your death if you die during such three-month period, but in each such case only to the extent this Option was exercisable for Vested Shares as of the date of your termination. "Cause" means "cause" as defined in your Employment Agreement, or in the absence of such an agreement or such a definition, "Cause" will mean a determination by the Committee that you (A) have engaged in personal dishonesty, willful violation of any law, rule, or regulation (other than minor traffic violations or similar offenses), or breach of fiduciary duty involving personal profit, (B) have failed to satisfactorily perform your duties and responsibilities for the Company or any Affiliate, (C) have been convicted of, or plead *nolo contendere* to, any felony or a crime involving moral turpitude, (D) have engaged in negligence or willful misconduct in the performance of your duties, including, but not limited to, willfully refusing without proper legal reason to perform your duties and responsibilities, (E) have materially breached any corporate policy or code of conduct established by the Company or any Subsidiary as such policies or codes may be adopted from time to time, (F) have violated the terms of any confidentiality, nondisclosure, intellectual property, nonsolicitation, noncompetition, proprietary information or inventions agreement, or any other agreement between you and the Company or any Subsidiary related to your service with the Company or any Subsidiary, or (G) have engaged in conduct that is likely to have a deleterious affect on the Company or any Subsidiary or their legitimate business interests, including, but not limited to, their goodwill and public image.

4. Transferability. The Option, and any rights or interests therein will be transferable by you only to the extent approved by the Committee in conformance with Section 10(b) of the Plan.

5. Compliance with Securities Law. Notwithstanding any provision of this Agreement to the contrary, the grant of the Option and the issuance of Stock will be subject to compliance with all applicable requirements of federal, state, and foreign securities laws and with the requirements of any stock exchange or market system upon which the Stock may then be listed. The Option may not be exercised if the issuance of shares of Stock upon exercise would constitute a violation of any applicable federal, state, or foreign securities laws or other law or regulations or the requirements of any stock exchange or market system upon which the Stock may then be listed. In addition, the Option may not be exercised unless (a) a registration statement under the Securities Act of 1933, as amended (the "**Act**"), is at the time of exercise of the Option in effect with respect to the shares issuable upon exercise of the Option or (b) in the

opinion of legal counsel to the Company, the shares issuable upon exercise of the Option may be issued in accordance with the terms of an applicable exemption from the registration requirements of the Act. YOU ARE CAUTIONED THAT THE OPTION MAY NOT BE EXERCISED UNLESS THE FOREGOING CONDITIONS ARE SATISFIED. ACCORDINGLY, YOU MAY NOT BE ABLE TO EXERCISE THE OPTION WHEN DESIRED EVEN THOUGH THE OPTION IS VESTED. The inability of the Company to obtain from any regulatory body having jurisdiction the authority, if any, deemed by the Company's legal counsel to be necessary to the lawful issuance and sale of any shares subject to the Option will relieve the Company of any liability in respect of the failure to issue or sell such shares as to which such requisite authority has not been obtained. As a condition to the exercise of the Option, the Company may require you to satisfy any qualifications that may be necessary or appropriate to evidence compliance with any applicable law or regulation and to make any representation or warranty with respect to such compliance as may be requested by the Company.

6. Extension if Exercise Prevented by Law. Notwithstanding Section 3, if the exercise of the Option within the applicable time periods set forth in Section 3 is prevented by the provisions of Section 5, the Option will remain exercisable until 30 days after the date you are notified by the Company that the Option is exercisable, but in any event no later than the Expiration Date. The Company makes no representation as to the tax consequences of any such delayed exercise. You should consult with your own tax advisor as to the tax consequences of any such delayed exercise.

7. Extension if You are Subject to Section 16(b). Notwithstanding Section 3, if a sale within the applicable time periods set forth in Section 3 of shares acquired upon the exercise of the Option would subject you to suit under Section 16(b) of the Securities Exchange Act of 1934, as amended, the Option will remain exercisable until the earliest to occur of (a) the 10th day following the date on which a sale of such shares by you would no longer be subject to such suit, (b) the 190th day after your termination of service with the Company and any Subsidiary, or (c) the Expiration Date. The Company makes no representation as to the tax consequences of any such delayed exercise. You should consult with your own tax advisor as to the tax consequences of any such delayed exercise.

8. Withholding Taxes. The Committee may, in its discretion, require you to pay to the Company at the time of the exercise of an Option or thereafter, the amount that the Committee deems necessary to satisfy the Company's current or future obligation to withhold federal, state or local income or other taxes that you incur by exercising an Option. In connection with such an event requiring tax withholding, you may (a) direct the Company to withhold from the shares of Stock to be issued to you the number of shares necessary to satisfy the Company's obligation to withhold taxes, that determination to be based on the shares' Fair Market Value as of the date of exercise; (b) deliver to the Company sufficient shares of Stock (based upon the Fair Market Value as of the date of such delivery) to satisfy the Company's tax withholding obligation; or (c) deliver sufficient cash to the Company to satisfy its tax withholding obligations. If you elect to use a Stock withholding feature you must make the election at the time and in the manner that the Committee prescribes. The Committee may, at its sole option, deny your request to satisfy withholding obligations through shares of Stock instead of cash. In the event the Committee subsequently determines that the aggregate Fair Market

Value (as determined above) of any shares of Stock withheld or delivered as payment of any tax withholding obligation is insufficient to discharge that tax withholding obligation, then you shall pay to the Company, immediately upon the Committee's request, the amount of that deficiency in the form of payment requested by the Committee.

9. Status of Stock. With respect to the status of the Stock, at the time of execution of this Agreement you understand and agree to all of the following:

(a) You understand that at the time of the execution of this Agreement the shares of Stock to be issued upon exercise of this Option have not been registered under the Act or any state securities law and that the Company does not currently intend to effect any such registration. In the event exemption from registration under the Act is available upon an exercise of this Option, you (or such other person permitted to exercise this Option if applicable), if requested by the Company to do so, will execute and deliver to the Company in writing an agreement containing such provisions as the Company may require to ensure compliance with applicable securities laws.

(b) You agree that the shares of Stock that you may acquire by exercising this Option will be acquired for investment without a view to distribution, within the meaning of the Act, and will not be sold, transferred, assigned, pledged, or hypothecated in the absence of an effective registration statement for the shares under the Act and applicable state securities laws or an applicable exemption from the registration requirements of the Act and any applicable state securities laws. You also agree that the shares of Stock that you may acquire by exercising this Option will not be sold or otherwise disposed of in any manner that would constitute a violation of any applicable securities laws, whether federal or state.

(c) You agree that (i) the Company may refuse to register the transfer of the shares of Stock purchased under this Option on the stock transfer records of the Company if such proposed transfer would in the opinion of counsel satisfactory to the Company constitute a violation of any applicable securities law and (ii) the Company may give related instructions to its transfer agent, if any, to stop registration of the transfer of the shares of Stock purchased under this Option.

10. Adjustments. The terms of the Option shall be subject to adjustment from time to time, in accordance with the following provisions:

(a) If at any time, or from time to time, the Company shall subdivide as a whole (by reclassification, by a Stock split, by the issuance of a distribution on Stock payable in Stock or otherwise) the number of shares of Stock then outstanding into a greater number of shares of Stock, then (i) the number of shares of Stock (or other kind of securities) that may be acquired under the Option shall be increased proportionately and (ii) the Exercise Price for each share of Stock (or other kind of shares or securities) subject to the then outstanding Option shall be reduced proportionately, without changing the aggregate purchase price or value as to which the outstanding Option remains exercisable or subject to restrictions.

(b) If at any time, or from time to time, the Company shall consolidate as a whole (by reclassification, reverse Stock split or otherwise) the number of shares of Stock then

outstanding into a lesser number of shares of Stock, (i) the number of shares of Stock (or other kind of shares or securities) that may be acquired under the Option shall be decreased proportionately and (ii) the Exercise Price for each share of Stock (or other kind of shares or securities) subject to the then outstanding Option shall be increased proportionately, without changing the aggregate purchase price or value as to which the outstanding Option remains exercisable or subject to restrictions.

(c) Whenever the number of shares of Stock subject to the Option and the price for each share of Stock subject to the Option are required to be adjusted as provided in this Section 10, the Committee shall promptly prepare a notice setting forth, in reasonable detail, the event requiring adjustment, the amount of the adjustment, the method by which such adjustment was calculated, and the change in price and the number of shares of Stock, other securities, cash, or property purchasable by you pursuant to the exercise of the Option or subject to the Option after giving effect to the adjustments. The Committee shall promptly give you such a notice.

(d) Adjustments under this Section 10 shall be made by the Committee, and its determination as to what adjustments shall be made and the extent thereof shall be final, binding, and conclusive. No fractional interest shall be issued under the Plan on account of any such adjustments.

11. Right of First Refusal. This Option and any Stock that may be acquired pursuant hereto is subject to the provisions of Section 10(c) of the Plan.

12. Purchase Option. This Option and any Stock that may be acquired pursuant hereto is subject to the provisions of Section 10(d) of the Plan.

13. Forfeiture for Detrimental Activity. This Option and any Stock that may be acquired pursuant hereto is subject to the provisions of Section 7(e) of the Plan.

14. Lock-Up Period. You hereby agrees that, if so requested by the Company or any representative of the underwriters (the "**Managing Underwriter**") in connection with any registration of the offering of any securities of the Company under the Act, you will not sell or otherwise transfer any Option Shares or other securities of the Company during the 180-day period (or such other period as may be requested in writing by the Managing Underwriter and agreed to in writing by the Company) (the "**Market Standoff Period**") following the effective date of a registration statement of the Company filed under the Act. Such restriction will apply only to the first registration statement of the Company to become effective under the Act that includes securities to be sold on behalf of the Company to the public in an underwritten public offering under the Act. The Company may impose stop-transfer instructions with respect to securities subject to the foregoing restrictions until the end of such Market Standoff Period.

15. Stockholder Agreement. The Committee may, in its sole discretion, condition the delivery of Stock pursuant to the exercise of this Option upon your entering into a stockholder agreement in such form as approved from time to time by the Board.

16. Legends. The Company may at any time place legends, referencing any restrictions imposed on the shares pursuant to Sections 9, 11, 12, or 13 of this Agreement, and

any applicable federal, state or foreign securities law restrictions, on all certificates representing shares of Stock subject to the provisions of this Agreement.

17. Notice of Sales Upon Disqualifying Disposition of ISO. If the Option is designated as an Incentive Stock Option in the Notice of Grant, you must comply with the provisions of this Section. You must promptly notify the Chief Financial Officer of the Company if you dispose of any of the shares acquired pursuant to the Option within one year after the date you exercise all or part of the Option or within two years after the Date of Grant. Until such time as you dispose of such shares in a manner consistent with the provisions of this Agreement, unless otherwise expressly authorized by the Company, you must hold all shares acquired pursuant to the Option in your name (and not in the name of any nominee) for the one-year period immediately after the exercise of the Option and the two-year period immediately after the Date of Grant. At any time during the one-year or two-year periods set forth above, the Company may place a legend on any certificate representing shares acquired pursuant to the Option requesting the transfer agent for the Company's stock to notify the Company of any such transfers. Your obligation to notify the Company of any such transfer will continue notwithstanding that a legend has been placed on the certificate pursuant to the preceding sentence.

18. Right to Terminate Services. Nothing contained in this Agreement shall confer upon you the right to continue in the employ of or performing services for the Company or any Subsidiary, or interfere in any way with the rights of the Company or any Subsidiary to terminate your employment or service relationship at any time.

19. Furnish Information. You agree to furnish to the Company all information requested by the Company to enable it to comply with any reporting or other requirement imposed upon the Company by or under any applicable statute or regulation.

20. Remedies. The Company shall be entitled to recover from you reasonable attorneys' fees incurred in connection with the enforcement of the terms and provisions of this Agreement whether by an action to enforce specific performance or for damages for its breach or otherwise.

21. No Liability for Good Faith Determinations. The Company and the members of the Committee and the Board shall not be liable for any act, omission or determination taken or made in good faith with respect to this Agreement or the Option granted hereunder.

22. Execution of Receipts and Releases. Any payment of cash or any issuance or transfer of shares of Stock or other property to you, or to your legal representative, heir, legatee or distributee, in accordance with the provisions hereof, shall, to the extent thereof, be in full satisfaction of all claims of such persons hereunder. The Company may require you or your legal representative, heir, legatee or distributee, as a condition precedent to such payment or issuance, to execute a release and receipt therefore in such form as it shall determine.

23. No Guarantee of Interests. The Board and the Company do not guarantee the Stock of the Company from loss or depreciation.

24. Company Records. Records of the Company regarding your service and other matters shall be conclusive for all purposes hereunder, unless determined by the Company to be incorrect.

25. Notice. All notices required or permitted under this Agreement must be in writing and personally delivered or sent by mail and shall be deemed to be delivered on the date on which it is actually received by the person to whom it is properly addressed or if earlier the date sent via certified mail.

26. Waiver of Notice. Any person entitled to notice hereunder may, by written form, waive such notice.

27. Information Confidential. As partial consideration for the granting of this Option, you agree that you will keep confidential all information and knowledge that you have relating to the manner and amount of your participation in the Plan; provided, however, that such information may be disclosed as required by law and may be given in confidence to your spouse, tax and financial advisors. In the event any breach of this promise comes to the attention of the Company, it shall take into consideration that breach in determining whether to recommend the grant of any future similar award to you, as a factor weighing against the advisability of granting any such future award to you.

28. Successors. This Agreement shall be binding upon you, your legal representatives, heirs, legatees and distributees, and upon the Company, its successors and assigns.

29. Severability. If any provision of this Agreement is held to be illegal or invalid for any reason, the illegality or invalidity shall not affect the remaining provisions hereof, but such provision shall be fully severable and this Agreement shall be construed and enforced as if the illegal or invalid provision had never been included herein.

30. Company Action. Any action required of the Company shall be by resolution of the Board or by a person authorized to act by resolution of the Board.

31. Headings. The titles and headings of paragraphs are included for convenience of reference only and are not to be considered in construction of the provisions hereof.

32. Governing Law. All questions arising with respect to the provisions of this Agreement shall be determined by application of the laws of Delaware, without giving any effect to any conflict of law provisions thereof, except to the extent Delaware law is preempted by federal law. The obligation of the Company to sell and deliver Stock hereunder is subject to applicable laws and to the approval of any governmental authority required in connection with the authorization, issuance, sale, or delivery of such Stock.

33. Word Usage. Words used in the masculine shall apply to the feminine where applicable, and wherever the context of this Agreement dictates, the plural shall be read as the singular and the singular as the plural.

34. No Assignment. You may not assign this Agreement or any of your rights under this Agreement without the Company's prior written consent, and any purported or attempted assignment without such prior written consent shall be void.

35. Acknowledgements Regarding Section 409A and Section 422 of the Code. You understand that if the purchase price of the Stock under this Option is less than the Fair Market Value of such Stock on the Date of Grant of this Option, then you may incur adverse tax consequences under section 409A and Section 422 of the Code. You acknowledge and agree that (a) you are not relying upon any determination by the Company, its affiliates, or any of their respective employees, directors, officers, attorneys or agents (collectively, the "**Company Parties**") of the Fair Market Value of the Stock on the Date of Grant, (b) you are not relying upon any written or oral statement or representation of the Company Parties regarding the tax effects associated with your execution of this Agreement and your receipt, holding and exercise of this Option, and (c) in deciding to enter into this Agreement, you are relying on your own judgment and the judgment of the professionals of your choice with whom you have consulted. You hereby release, acquit and forever discharge the Company Parties from all actions, causes of actions, suits, debts, obligations, liabilities, claims, damages, losses, costs and expenses of any nature whatsoever, known or unknown, on account of, arising out of, or in any way related to the tax effects associated with your execution of this Agreement and your receipt, holding and exercise of this Option.

36. Miscellaneous.

(a) This Agreement is subject to all the terms, conditions, limitations and restrictions contained in the Plan. In the event of any conflict or inconsistency between the terms hereof and the terms of the Plan, the terms of the Plan shall be controlling.

(b) The Option may be amended by the Board or by the Committee at any time (i) if the Board or the Committee determines, in its sole discretion, that amendment is necessary or advisable in light of any addition to or change in any federal or state, tax or securities law or other law or regulation, which change occurs after the Date of Grant and by its terms applies to the Option; or (ii) other than in the circumstances described in clause (i) or provided in the Plan, with your consent.

(c) If this Option is intended to be an incentive stock option designed pursuant to section 422 of the Code, then in the event the Option Shares (and all other options designed pursuant to section 422 of the Code granted to you by the Company or any parent of the Company or Subsidiary) that first become exercisable in any calendar year have an aggregate fair market value (determined for each Option Share as of the Date of Grant) that exceeds $100,000, the Option Shares in excess of $100,000 shall be treated as subject to a Nonstatutory Stock Option.

[Signature Page Follows]

Please indicate your acceptance of all the terms and conditions of the Award and the Plan by signing and returning a copy of this Agreement.

MIRNA THERAPEUTICS, INC.,
a Delaware corporation

By: _____
Name: _____
Title: _____

ACCEPTED:

_____
Signature of Optionee

_____
Name of Optionee (Please Print)

Date: _____