UNITED STATES
SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

FORM 8-K

CURRENT REPORT
Pursuant to Section 13 or 15(d) of the
Securities Exchange Act of 1934

Date of Report (Date of earliest event reported): **September 28, 2016**

Mirna Therapeutics, Inc.

(Exact name of registrant as specified in its charter)

Delaware	**001-37566**	**26-1824804**
(State or other jurisdiction of incorporation)	(Commission File Number)	(IRS Employer Identification Number)

3711 South MoPac Expressway, Ste 100
Austin, TX 78746
(Address of principal executive offices, including Zip Code)

N/A
(Former name or former address, if changed since last report)

Registrant's telephone number, including area code: **(512) 901-0900**

Check the appropriate box below if the Form 8-K filing is intended to simultaneously satisfy the filing obligation of the registrant under any of the following provisions:

- o Written communications pursuant to Rule 425 under the Securities Act (17 CFR 230.425)
- o Soliciting material pursuant to Rule 14a-12 under the Exchange Act (17 CFR 240.14a-12)
- o Pre-commencement communications pursuant to Rule 14d-2(b) under the Exchange Act (17 CFR 240.14d-2(b))
- o Pre-commencement communications pursuant to Rule 13e-4(c) under the Exchange Act (17 CFR 240.13e-4(c))

Item 8.01 Other Events.

On September 28, 2016, Mirna Therapeutics, Inc. (the "Company") received verbal notice from the U.S. Food and Drug Administration (the "FDA") that the Company's Investigational New Drug ("IND") for MRX34, its investigational microRNA therapy for multiple cancers, has been placed on full clinical hold. The Company anticipates that it will receive a formal clinical hold letter from the FDA within 30 days. This follows the Company's announcement on September 20, 2016 that it was voluntarily stopping its Phase 1 trial for MRX34.

Forward-Looking Statements

To the extent that statements contained in this report are not descriptions of historical facts regarding the Company, they are forward-looking statements reflecting the current beliefs and expectations of management made pursuant to the safe harbor provisions of the Private Securities Litigation Reform Act of 1995, including statements regarding the receipt of a formal clinical hold letter from the FDA. Such forward-looking statements involve substantial risks and uncertainties that could cause our clinical development program, future results, performance or achievements to differ significantly from those expressed or implied by the forward-looking statements. Such risks and uncertainties include, among others, the uncertainties inherent in the clinical drug development process, the regulatory approval process, our substantial dependence on MRX34, our commercialization plans and efforts and other matters that could affect the availability or commercial potential of our product candidates and the risk that our product candidates may cause undesirable side effects or have other properties that could delay or prevent their regulatory approval. We undertake no obligation to update or revise any forward-looking statements. For a

further description of the risks and uncertainties that could cause actual results to differ from those expressed in these forward-looking statements, as well as risks relating to our business in general, see our Annual Report on Form 10-K filed with the U.S. Securities and Exchange Commission (the "SEC") on March 30, 2016 and our Quarterly Report on Form 10-Q, filed with the SEC on August 15, 2016.

SIGNATURES

Pursuant to the requirements of the Securities Exchange Act of 1934, as amended, the registrant has duly caused this report to be signed on its behalf by the undersigned hereunto duly authorized.

MIRNA THERAPEUTICS, INC.

Date: September 29, 2016

By: /s/ Alan Fuhrman
Alan Fuhrman
Chief Financial Officer