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): August 12, 2021

SYNLOGIC, 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 No.)**

301 Binney St., Suite 402 **Cambridge, MA**	**02142**
(Address of principal executive offices)	**(Zip Code)**

Registrant's telephone number, including area code: (617) 401-9975

Not applicable
(Former Name or Former Address, if Changed Since Last Report)

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 (see General Instruction A.2. below):

☐ Written communications pursuant to Rule 425 under the Securities Act (17 CFR 230.425)

☐ Soliciting material pursuant to Rule 14a-12 under the Exchange Act (17 CFR 240.14a-12)

☐ Pre-commencement communications pursuant to Rule 14d-2(b) under the Exchange Act (17 CFR 240.14d-2(b))

☐ Pre-commencement communications pursuant to Rule 13e-4(c) under the Exchange Act (17 CFR 240.13e-4(c))

Securities registered pursuant to Section 12(b) of the Act:

Title of each class	Trading Symbol(s)	Name of each exchange on which registered
Common Stock	**SYBX**	**The Nasdaq Capital Market**

Indicate by check mark whether the registrant is an emerging growth company as defined in Rule 405 of the Securities Act of 1933 (17 CFR §230.405) or Rule 12b-2 of the Securities Exchange Act of 1934 (17 CFR §240.12b-2).

Emerging Growth Company ☐

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 13(a) of the Exchange Act. ☐

Item 2.02 Results of Operations and Financial Condition

On August 12, 2021, Synlogic, Inc. (the "Company") announced its financial results for the quarter ended June 30, 2021. The full text of the press release and subsequent presentations issued in connection with the announcement is furnished as Exhibit 99.1, 99.2 and 99.3, respectively, to this Current Report on Form 8-K.

The information in this Current Report on Form 8-K (including Exhibit 99.1 and 99.2) shall not be deemed "filed" for purposes of Section 18 of the Securities Exchange Act of 1934, as amended (the "Exchange Act") or otherwise subject to the liabilities of that section, nor shall it be deemed incorporated by reference in any filing under the Securities Act of 1933, as amended, or the Exchange Act, except as expressly set forth by specific reference in such filing.

Item 9.01 Financial Statements and Exhibits.

(d) Exhibits

The following exhibit relating to Item 2.02 shall be deemed to be furnished, and not filed:

Exhibit No.	Description
99.1	Press Release dated August 12, 2021
99.2	Presentation dated August 12, 2021
99.3	Presentation dated August 12, 2021
104	Cover Page Interactive Data File (embedded within the Inline XBRL document)

SIGNATURES

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

SYNLOGIC, INC.

Date: August 12, 2021

By: /s/ Gregg Beloff
Name: Gregg Beloff
Title: Interim Chief Financial Officer

Synlogic Reports Second Quarter Financial Results and Provides Business Update

- Proof of concept studies for co-lead metabolic programs SYNB1618 in PKU and SYNB8802 in Enteric Hyperoxaluria on track for 2H 2021 readouts –

- Immunomodulation portfolio expanded via strategic research collaboration in IBD -

- Synlogic ends 2Q 2021 with $115.5 million in cash, cash equivalents and investments supporting projected runway into 2H 2023 -

- Management to host conference call and webcast at 8:30 a.m. ET today -

Cambridge, Mass. (PR Newswire) August 12, 2021 – Synlogic, Inc. (Nasdaq: SYBX), a clinical stage company bringing the transformative potential of synthetic biology to medicine, today reported financial results for the second quarter ended June 30, 2021, and provided an update on its clinical and preclinical programs.

"We are executing across our co-lead metabolic programs and advancing towards proof of concept readouts of our Synthetic Biotic™ medicines for the treatment of Phenylketonuria and Enteric Hyperoxaluria," said Aoife Brennan, M.B. Ch.B., Synlogic's President and Chief Executive Officer. "With a next-generation strain in a Phase 1 study for the treatment of Phenylketonuria, a strategic collaboration in place to expand our IBD pipeline and an advancing pre-clinical pipeline of metabolic disease programs, we have a robust set of potential therapies that could provide meaningful benefit to patients. We look forward to communicating results and next steps over the coming months."

Quarter Highlights

The Metabolic Portfolio:

Proof of concept data of SYNB1618 for the treatment of Phenylketonuria (PKU) anticipated in second half of 2021, Phase 1 study of SYNB1934 initiated.

- The SynPheny-1 Phase 2 trial of SYNB1618 continues to progress.
    - SynPheny-1 is designed to evaluate plasma phenylalanine (Phe) lowering of a solid oral formulation of SYNB1618 in adult PKU patients who do not benefit from, or do not tolerate, existing therapies.

- In July, the Company initiated a Phase 1 study of SYNB1934, a next-generation strain designed for the treatment of PKU, to evaluate safety, tolerability and head-to-head comparison of Phe-consumption biomarkers between SYNB1934 and SYNB1618.
    - SYNB1934, an evolved strain of SYNB1618 in the PKU portfolio, has the potential to provide increased benefit to patients living with PKU.
    - Preclinical *in vivo* and *in vitro* studies demonstrated a greater than 2-fold improvement in the ability of SYNB1934 to consume and break down Phe compared to SYNB1618.
- Papers published in the journals ***Nature Metabolism*** and ***Communications Biology*** detail findings from a first-in-human study of SYNB1618 and the development of a mechanistic model to predict the function of Synthetic Biotic medicines in healthy volunteers and PKU patients.
    - Data from the first-in-human study of SYNB1618 showed dose-responsive, non-saturated increases in gastrointestinal consumption of Phe by SYNB1618.
    - These data add to the growing body of scientific research demonstrating the therapeutic potential of Synthetic Biotic medicines for the treatment of PKU.

SYNB1618 and SYNB1934 are orally administered Synthetic Biotic medicines being developed as potential treatments for PKU. They are intended to address the needs of patients of all age groups through the consumption of Phe in the gastrointestinal (GI) tract, which has the potential to lower blood Phe levels and enable the consumption of more natural protein in the diet.

Proof of concept data of SYNB8802 for the treatment of Enteric Hyperoxaluria anticipated in second half of 2021.

- SYNB8802 demonstrated proof of mechanism in Part A of an ongoing Phase 1 trial, with evidence of urinary oxalate lowering in a Dietary Hyperoxaluria model in healthy volunteers given a high oxalate diet.
    - Urinary oxalate lowering by SYNB8802 was robust and dose-dependent.
    - The 3e11 dose is undergoing evaluation in Part B of the study in patients with Enteric Hyperoxaluria.
    - This dose was well-tolerated and resulted in a 28.6% (90% CI: -42.4 to -11.6) reduction in urinary oxalate as measured by a change from baseline compared to placebo.

- Part B of the study is continuing with the evaluation of SYNB8802 in patients with Enteric Hyperoxaluria secondary to Roux-en-Y gastric bypass surgery.
- Data on the development of SYNB8802 was presented at the Synthetic Biology: Engineering, Evolution & Design (SEED) conference in June 2021.

SYNB8802 is an orally administered Synthetic Biotic medicine being developed as a potential treatment for Enteric Hyperoxaluria. SYNB8802 is designed to consume oxalate in the GI tract to prevent the increased absorption of oxalate in Enteric Hyperoxaluria patients.

Enteric Hyperoxaluria results in dangerously high urinary oxalate levels causing progressive kidney damage, kidney stone formation, and nephrocalcinosis. Enteric Hyperoxaluria has no approved treatment options. Approximately 100,000 patients in the US suffer from chronic and recurrent kidney stones as a result of severe Enteric Hyperoxaluria.

The Immunomodulation Portfolio:

Progression of SYNB1891 in combination arm dosing with PD-L1 checkpoint inhibitor in Phase 1 study in patients with advanced solid tumors or lymphoma.

- SYNB1891 is currently being evaluated in a Phase 1 study that has two parts: Part A is a monotherapy arm that has enrolled six dose cohorts to date. Part B is a combination arm with SYNB1891 and the PD-L1 checkpoint inhibitor atezolizumab that has enrolled two dose cohorts to date.
    - The study is ongoing. Mature combination therapy data is expected by the end of the year.

SYNB1891 is an investigational drug for the intra-tumoral treatment of solid tumors and lymphoma, composed of an engineered Synthetic Biotic strain of E. coli Nissle that produces cyclic di-AMP (CDA), a stimulator of the STING (STimulator of INterferon Genes) pathway.

Advancement of preclinical programs in Inflammatory Bowel Disease.

- In June, Synlogic and Roche entered into a research collaboration agreement for the discovery of a novel Synthetic Biotic medicine for the treatment of inflammatory bowel disease (IBD). Under the terms of the agreement, Synlogic and Roche will collaborate to develop a Synthetic Biotic medicine addressing an undisclosed novel target in IBD.
- Data on novel Synthetic Biotic approaches for the treatment of IBD was presented at Digestive Disease Week (DDW) in May 2021.

Corporate Update:

Synlogic strengthens Balance Sheet and advances synthetic biology capabilities.

- In April, Synlogic completed an underwritten public offering of 11.5 million shares, resulting in net proceeds to Synlogic of approximately $32.6 million.
- Synlogic and Ginkgo Bioworks continue to advance their long-term strategic platform collaboration that provides expanded synthetic biology capabilities to Synlogic with multiple undisclosed metabolic programs now in preclinical stages of development. Additional information on these programs will be provided over the course of the year.

Second Quarter 2021 Financial Results

As of June 30, 2021, Synlogic had cash, cash equivalents, and short-term investments of $115.5 million.

For the three months ended June 30, 2021, Synlogic reported a consolidated net loss of $14.5 million, or $0.28 per share, compared to a consolidated net loss of $15.5 million, or $0.44 per share, for the corresponding period in 2020.

Research and development expenses were $10.7 million for the three months ended June 30, 2021 compared to $12.9 million for the corresponding period in 2020.

General and administrative expenses for the three months ended June 30, 2021 were $4.1 million compared to $3.5 million for the corresponding period in 2020.

Revenue was $0.2 million for the three months ended June 30, 2021, compared to $0.4 million for the corresponding period in 2020. Revenue for the three months ended June 30, 2021 was due to the collaboration with Roche, for the discovery of a novel Synthetic Biotic medicine for treatment of inflammatory bowel disease (IBD). Under the terms of the agreement, Synlogic and Roche will collaborate to develop a Synthetic Biotic medicine addressing an undisclosed novel target in IBD. Revenue for the three months ended June 30, 2020 was due to the prior collaboration with AbbVie to develop Synthetic Biotic medicines for the treatment of inflammatory bowel disease, which was terminated in May 2020.

Financial Outlook

Based upon its current operating plan and balance sheet as of June 30, 2021 Synlogic expects to have sufficient cash to be able to fund the base operating plan into the second half of 2023.

Conference Call & Webcast Information

Synlogic will host a conference call and live webcast at 8:30 a.m. ET today, Thursday, August 12, 2021. To access the live webcast, please visit the "Event Calendar" page within the Investors and Media section of the Synlogic website. Investors may listen to the call by dialing +1 (844) 815-2882 from locations in the United States or +1 (213) 660-0926 from outside the United States. The conference ID number is 7586239. A replay will be available for 30 days on the Investors and Media section of the Synlogic website.

About Synlogic

Synlogic™ is bringing the transformative potential of synthetic biology to medicine. With a premiere synthetic biology platform that leverages a reproducible, modular approach to microbial engineering, Synlogic designs Synthetic Biotic medicines that target validated underlying biology to treat disease in new ways. Synlogic's proprietary pipeline includes Synthetic Biotics for the treatment of metabolic disorders including Phenylketonuria (PKU) and Enteric Hyperoxaluria. The company is also building a portfolio of partner-able assets in immunology and oncology. More information about Synlogic's programs and pipeline can be found at https://www.synlogictx.com.

Forward-Looking Statements

This press release contains "forward-looking statements" that involve substantial risks and uncertainties for purposes of the safe harbor provided by the Private Securities Litigation Reform Act of 1995. All statements, other than statements of historical facts, included in this press release regarding strategy, future operations, clinical development plans, future financial position, future revenue, projected expenses, prospects, plans and objectives of management are forward-looking statements. In addition, when or if used in this press release, the words "may," "could," "should," "anticipate," "believe," "estimate," "expect," "intend," "plan," "predict" and similar expressions and their variants, as they relate to Synlogic may identify forward-looking statements. Examples of forward-looking statements, include, but are not limited to, statements regarding the potential of Synlogic's platform to develop therapeutics to address a wide range of diseases including: cancer, inborn errors of metabolism, metabolic diseases, and inflammatory and immune disorders; our expectations about sufficiency of our existing cash balance; the future clinical development of Synthetic Biotic medicines; the approach Synlogic is taking to discover and develop novel therapeutics using synthetic biology; and the expected timing of Synlogic's clinical trials and availability of clinical trial data. Actual results could differ materially from those contained in any forward-looking statement as a result of various factors, including: the uncertainties inherent in the clinical and preclinical development process; the ability of Synlogic to protect its intellectual property rights; and legislative, regulatory, political and economic developments, as well as those risks identified under the heading "Risk Factors" in Synlogic's filings with the SEC. The forward-looking statements contained in this press release reflect Synlogic's current views with respect to future events. Synlogic anticipates that subsequent events and developments will cause its views to change. However, while Synlogic may elect to update these forward-looking statements in the future, Synlogic specifically disclaims any obligation to do so. These forward-looking statements should not be relied upon as representing Synlogic's view as of any date subsequent to the date hereof.

-more-

Synlogic, Inc.
Condensed Consolidated Statements of Operations
(unaudited)

(in thousands,except share and per share data)	For the three months ended		For the six months ended	
	June 30, 2021	June 30, 2020	June 30, 2021	June 30, 2020
Revenue	$ 246	$ 445	$ 246	$ 545
Operating expenses				
Research and development	10,719	12,909	21,899	25,586
General and administrative	4,061	3,473	7,912	7,294
Total operating expenses	14,780	16,382	29,811	32,880
Loss from operations	(14,534)	(15,937)	(29,565)	(32,335)
Other income, net	49	402	109	972
Net loss	$ (14,485)	$ (15,535)	$ (29,456)	$ (31,363)
Net loss per share - basic and diluted	$ (0.28)	$ (0.44)	$ (0.63)	$ (0.91)
Weighted-average common shares used in computing net loss per share - basic and diluted	52,049,424	34,967,761	46,876,216	34,604,738

Synlogic, Inc.
Condensed Consolidated Balance Sheets
(unaudited)

(in thousands, except share data)	June 30, 2021	December 31, 2020
Assets		
Cash, cash equivalents, and short-term investments	$ 115,462	$ 100,444
Fixed assets	$ 9,928	10,776
Other assets	$ 31,494	32,620
Total assets	$ 156,884	$ 143,840
Liabilities and stockholders' equity		
Current liabilities	$ 9,633	$ 8,301
Long-term liabilities	$ 19,173	20,404
Total liabilities	28,806	28,705
Total stockholders' equity	$ 128,078	115,135
Total liabilities and stockholders' equity		
	$ 156,884	$ 143,840
Common stock and common stock equivalents		
Common stock	52,375,344	38,183,273
Common stock warrants (pre-funded)	2,548,117	2,548,117
Total common stock	54,923,461	40,731,390

MEDIA CONTACT:

Christen Baglaneas
Synlogic, Inc.
Phone: 617-401-9152
Email: christen.baglaneas@synlogictx.com

INVESTOR CONTACT:

Daniel Rosan
Synlogic, Inc.
Phone: 617-401-9152
Email: dan.rosan@synlogictx.com

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Exhibit 99.

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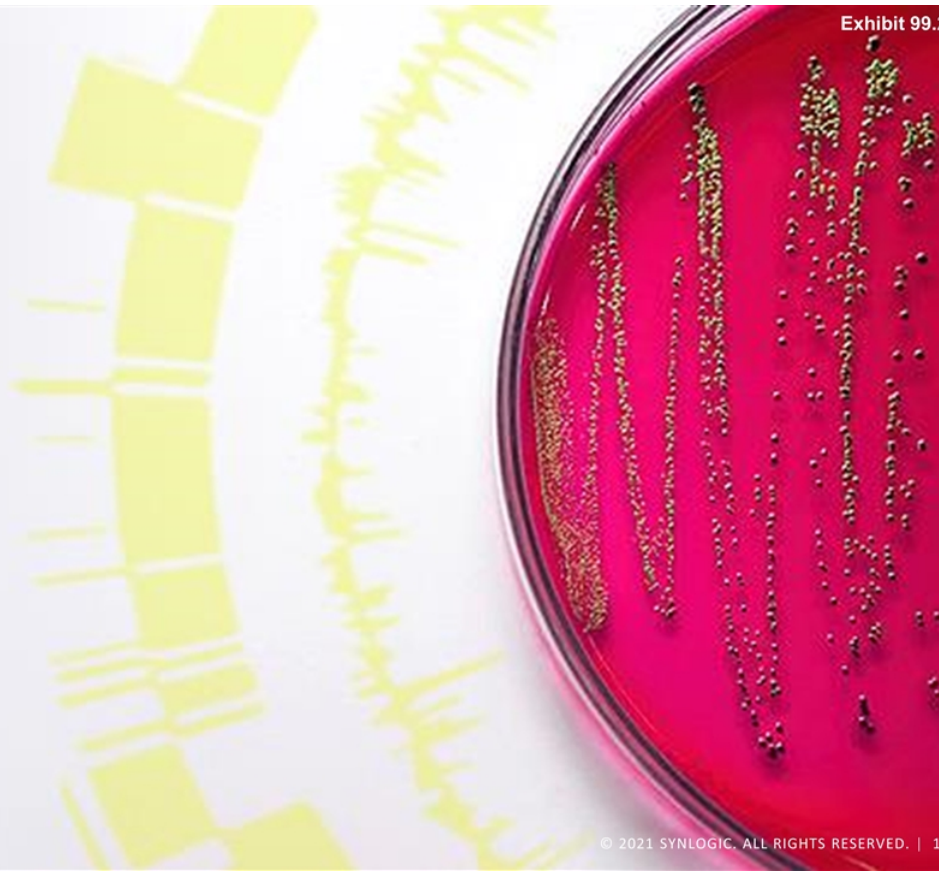

Bringing the Transformative Power of Synthetic Biology to Medicine

Q2 Financial Results & Business Update

12 August 2021

Forward Looking Statements

This presentation contains “forward-looking statements” that involve substantial risks and uncertainties for purposes of the safe harbor provided by the Private Securities Litigation Reform Act of 1995. All statements, other than statements of historical facts, included in this presentation regarding strategy, future operations, future financial position, future revenue, projected expenses, prospects, plans and objectives of management are forward-looking statements. In addition, when or if used in this presentation, the words “may,” “could,” “should,” “anticipate,” “believe,” “estimate,” “expect,” “intend,” “plan,” “predict” and similar expressions and their variants may identify forward-looking statements. Examples of forward-looking statements include, but are not limited to, the approach we are taking to discover and develop novel therapeutics using synthetic biology; statements regarding the potential of our platform to develop therapeutics to address a wide range of diseases, including: metabolic diseases, inflammatory and immune disorders, and cancer; the future clinical development of Synthetic Biotic medicines; the potential of our technology to treat phenylketonuria and cancer; the expected timing of our anticipated clinical trial initiations and availability of clinical data; the benefit of orphan drug and fast track status; the adequacy of our capital to support our future operations and our ability to successfully initiate and complete clinical trials; the results of our collaborations; and the difficulty in predicting the time and cost of development of our product candidates. Actual results could differ materially from those contained in any forward-looking statement as a result of various factors, including, without limitation: the uncertainties inherent in the preclinical development process; our ability to protect our intellectual property rights; and legislative, regulatory, political and economic developments, as well as those risks identified under the heading “Risk Factors” in our filings with the SEC. The foregoing review of important factors that could cause actual events to differ from expectations should not be construed as exhaustive and should be read in conjunction with statements that are included herein and elsewhere, including the risk factors included in our quarterly report on Form 10-Q filed with the SEC on August 12, 2020, and in any subsequent filings we make with the SEC. The forward-looking statements contained in this presentation reflect our current views with respect to future events. We anticipate that subsequent events and developments will cause our views to change. However, while we may elect to update these forward-looking statements in the future, we specifically disclaim any obligation to do so. These forward-looking statements should not be relied upon as representing our view as of any date subsequent to the date hereof.

Opening Remarks

Dr. Aoife Brennan
MB CHB

President & CEO

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Clinical proof of concept data expected across multiple programs in 2021

Metabolic programs: Two PoC opportunities

Phenylketonuria (PKU)

Proof of mechanism demonstrated in Phase 1 with healthy volunteers

SYNB1618 Phase 2 SynPheny patient data expected second half of 2021

SYNB1934 Head to Head data with SYNB1618 in healthy volunteers expected second half of 2021

Enteric Hyperoxaluria

Proof of mechanism demonstrated by SYNB8802 in Phase 1A with dietary hyperoxaluria induced in healthy volunteers

Phase 1B patient data expected second half of 2021

Immunology

Solid Tumors

Monotherapy: target engagement, meaningful pharmaco-dynamic effects, good safety

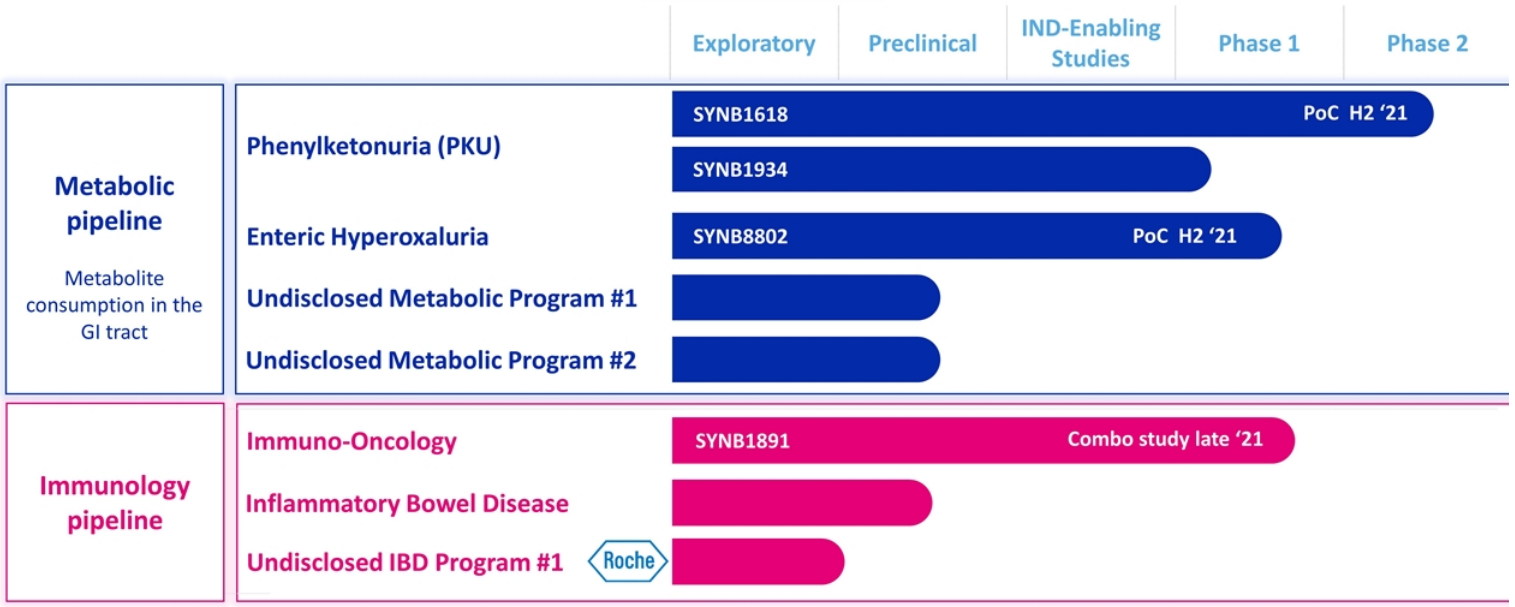
Combination with anti-PDL1: ongoing

Inflammatory Bowel Disease

Advancing research collaboration with Roche on novel IBD target

Potential to demonstrate clinical benefit of the Synthetic Biotic platform in two high value indications in 2021

Robust pipelines with meaningful catalysts



Progress in Metabolic Programs

Dr. David Hava, PhD
Chief Scientific Officer

Phenylketonuria (PKU)

Current and emerging treatment options leave many patients behind

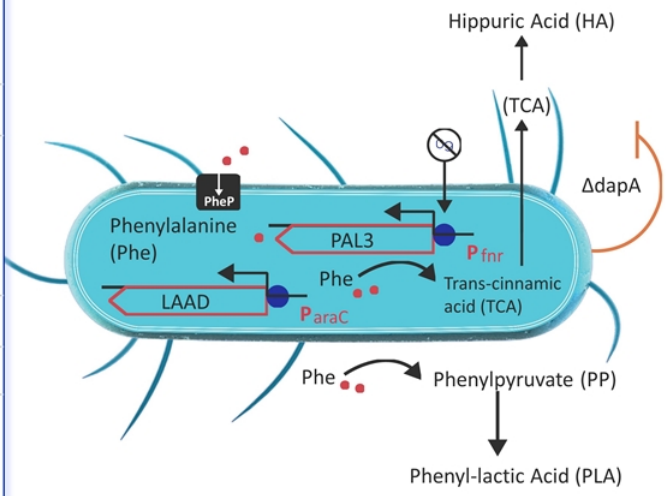
SYNB1618 demonstrates potential to lower Phe in PKU patients

SYNB1618 Phase 2 Phe-lowering trial ongoing

SYNB1934 Phase 1 study initiated

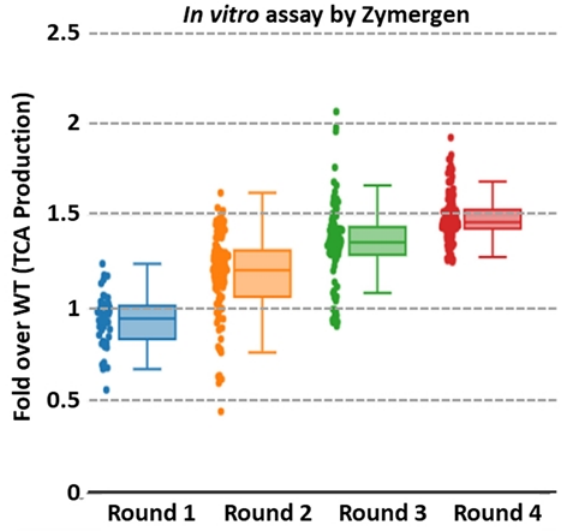
SYNB1618 & SYNB1934 Design

Component	Design
Therapeutic strategy	**Metabolite consumption:** Built from Synthetic Library Specifically to Consume Phe
Bacterial Chassis	***E. coli* Nissle**
Effector(s)	***SYNB1618: Wild Type* PAL3 Enzyme** ***SYNB1934*: Evolved PAL3 Enzyme** Degrades Phe to TCA (measurable biomarker of activity)
	***LAAD* Enzyme:** Alt. Phe-consuming pathway
Pump	***PheP:*** Pumps Phe into cell
Switch	**SYNB1618: FNR & AraC promoters** **SYNB1934: Ptac** Control gene expression
Safety Features	***Δ dap:*** Auxotrophy – requires diaminopimelic acid (DAP) to grow

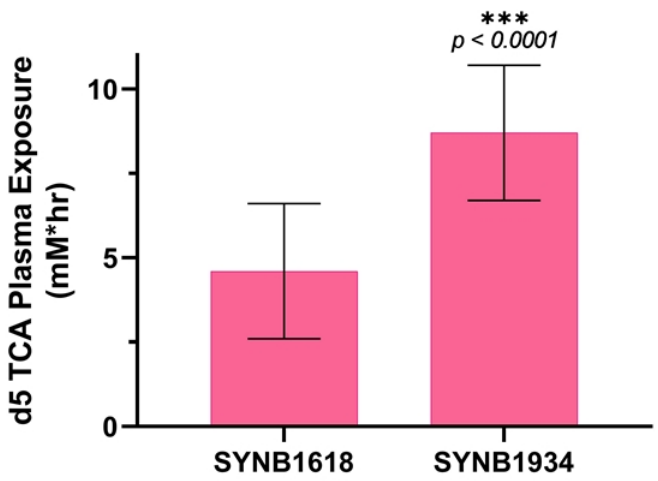


SYNB1934: An evolved strain with potential for improved Phe-lowering

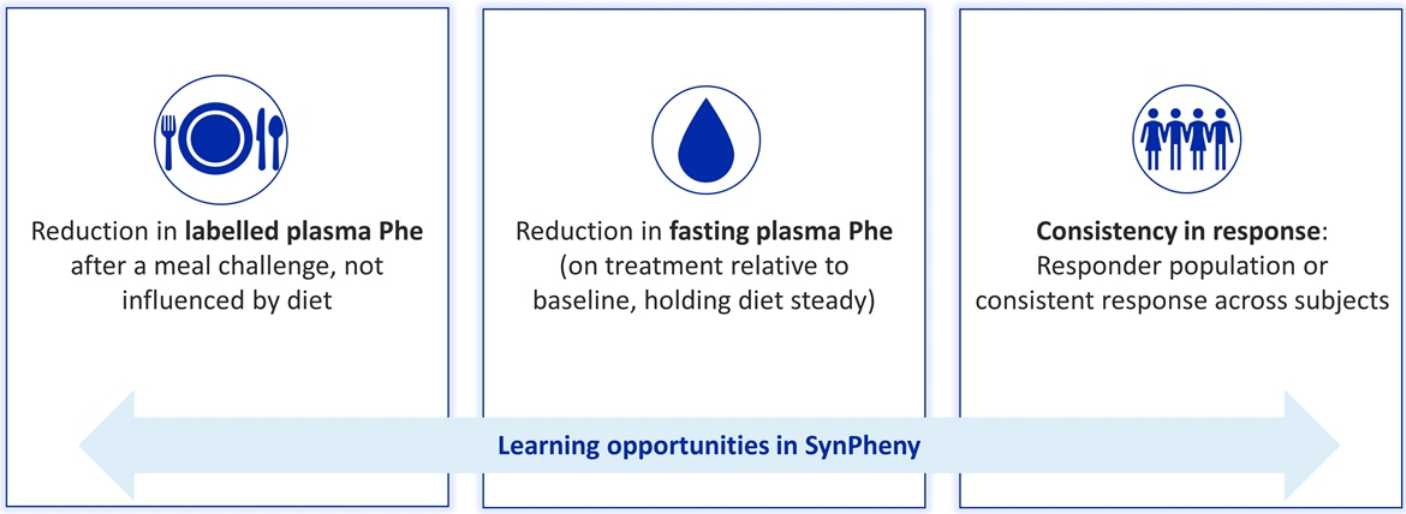
Directed Evolution



Non-Human Primates: Biomarker of Phe-Consumption

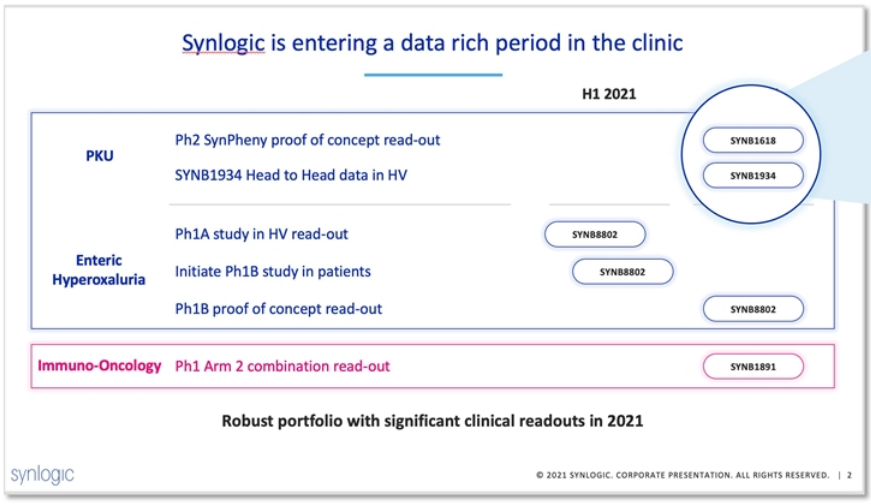


SynPheny POC Study in PKU



Study powered for 20% reduction in labelled plasma Phe, providing clinically meaningful endpoint for patients without other treatment options

PKU Portfolio: Data Catalysts



Most compelling clinical profile will be taken forward into late phase development for PKU

Enteric Hyperoxaluria (HOX)

Enteric Hyperoxaluria results in significant, irreversible, and progressive kidney damage

SYNB8802 proof of mechanism established: potential for best-in-class urinary oxalate lowering

Proof of concept on track for 2021 data read out

The Enteric Hyperoxaluria Patient Experience

Patients with underlying GI disorders faced with the burden of chronic and recurrent kidney stones

High levels of pain

No approved treatment options

Risk of impaired kidney function

"I would rather experience the pain of childbirth every year for the rest of my life than ever have one more stone."

- C., Female, 53 yrs. old, 7 stones

75,000 - 90,000 US patients with recurrent kidney stones have no available therapeutic options

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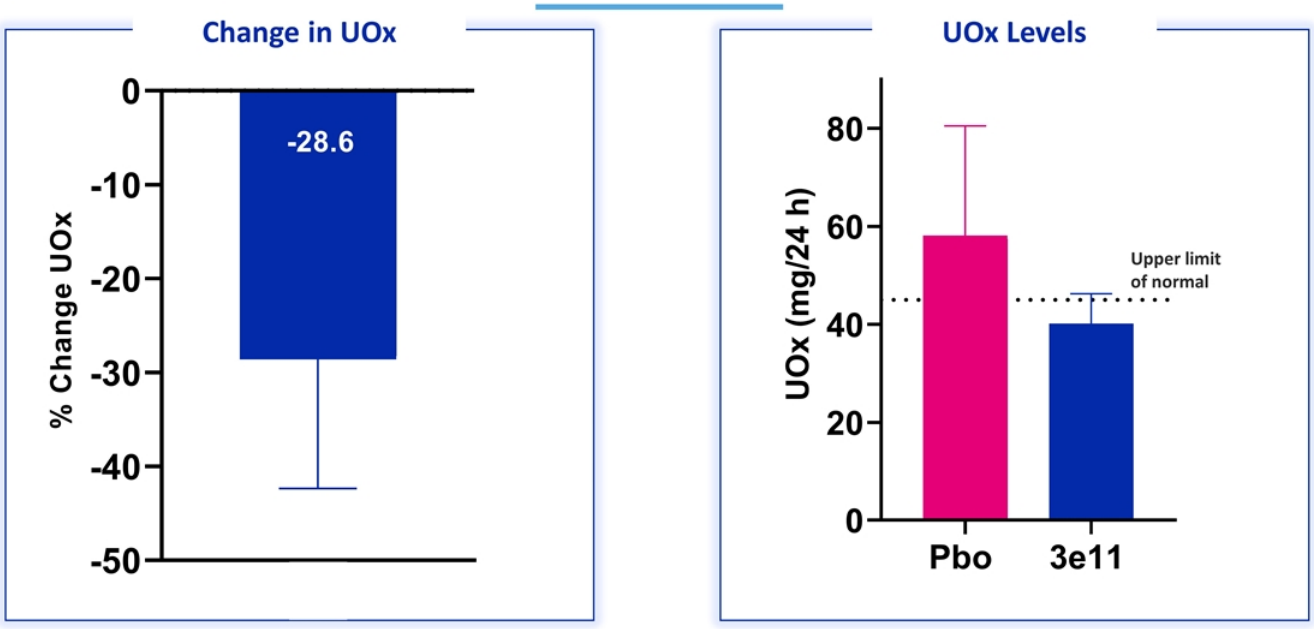
Source: Patel et al, 2017; Synlogic market research

Ph1 design provides POC opportunity in 2021

Phase 1A	Phase 1B
Dietary Hyperoxaluria (Healthy Volunteers)	**Enteric Hyperoxaluria Patients**
Multiple Ascending Dose	**Cross-over**
High oxalate & low calcium diet run-in	Enteric Hyperoxaluria patients (Roux-en-Y population)
Induce dietary hyperoxaluria	Three times/day (TID) dosing
N = 45 subjects	N = 20 patients, baseline UOx >70 mg/day
Endpoints	**Endpoints:**
Primary: Safety & tolerability	***Primary:*** Change in Urinary Oxalate
Secondary: Microbial kinetics of strain	***Secondary:*** (1) Microbial kinetics of strain
Exploratory: (1) Plasma and urine biomarkers	(2) Safety and tolerability
(2) Dose frequency assessment	

Dietary hyperoxaluria model is translationally relevant to patient population

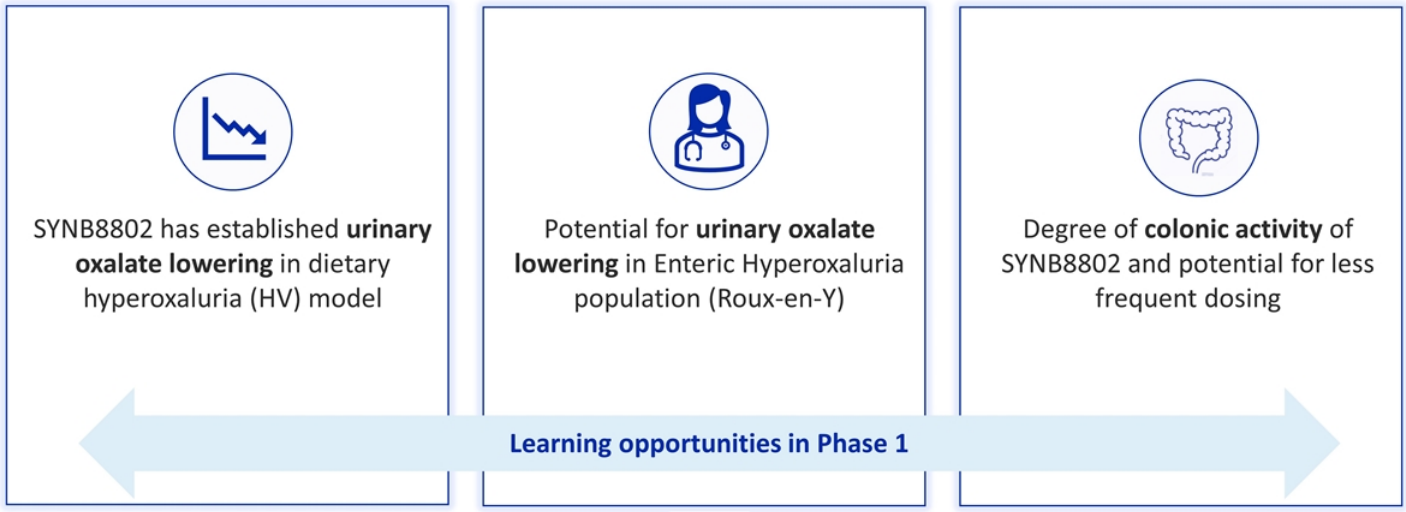
SYNB8802 3e11 live cells dose advancing to Ph1B in patients



Clinically meaningful lowering of urinary oxalate demonstrated at a well tolerated dose

LS mean change over Placebo, +/- 90% std error of measurement, all days; and 24hr UOx after 5 days of dosing, +/- 90% std error of measurement. 600mg daily oxalate.

Opportunity for multiple clinically relevant outcomes in Phase1B



Potential to demonstrate meaningful urinary oxalate lowering in patients with active disease

Second Quarter, 2021

Summary Results

Balance Sheet (unaudited)	30 June 2021	31 December 2020
Cash, Cash Equivalents, and Marketable Securities	$115.5 M	$100.4 M

	Three Months Ended	
Statement of Operations (unaudited)	**30 June 2021**	**30 June 2020**
R&D Expenses	$10.7 M	$12.9 M
G&A Expenses	$4.1 M	$3.5 M
Net Loss	$(14.5 M)	$(15.5 M)
Net loss per share – basic and diluted*	$(0.28)	$(0.44)
*Weighted Average Shares Outstanding**	*52.0 M*	*34.9 M*

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* weighted average shares used in computing net loss per shares - basic and diluted

Concluding Remarks

Dr. Aoife Brennan
MD CHB

President & CEO

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Synlogic is entering a data rich period in the clinic

		H1 2021	H2 2021
PKU	Ph2 SynPheny proof of concept read-out		SYNB1618
	SYNB1934 Head to Head data in HV		SYNB1934
Enteric Hyperoxaluria	Ph1A study in HV read-out	SYNB8802	
	Initiate Ph1B study in patients	SYNB8802	
	Ph1B proof of concept read-out		SYNB8802
Immuno-Oncology	Ph1 Arm 2 combination read-out		SYNB1891

Robust portfolio with significant clinical readouts in 2021

Available For Questions

Aoife Brennan, MB ChB
President & CEO

Daniel Rosan
Head of Finance & Investor Relations

Dave Hava, PhD
Chief Scientific Officer

Antoine Awad
Chief Operating Officer

synlogic

Bringing the Transformative Power of Synthetic Biology to Medicine

Corporate Presentation

August 2021

Forward Looking Statements

This presentation contains “forward-looking statements” that involve substantial risks and uncertainties for purposes of the safe harbor provided by the Private Securities Litigation Reform Act of 1995. All statements, other than statements of historical facts, included in this presentation regarding strategy, future operations, future financial position, future revenue, projected expenses, prospects, plans and objectives of management are forward-looking statements. In addition, when or if used in this presentation, the words “may,” “could,” “should,” “anticipate,” “believe,” “estimate,” “expect,” “intend,” “plan,” “predict” and similar expressions and their variants may identify forward-looking statements. Examples of forward-looking statements include, but are not limited to, the approach we are taking to discover and develop novel therapeutics using synthetic biology; statements regarding the potential of our platform to develop therapeutics to address a wide range of diseases, including: metabolic diseases, inflammatory and immune disorders, and cancer; the future clinical development of Synthetic Biotic medicines; the potential of our technology to treat phenylketonuria and cancer; and the expected timing of our anticipated clinical trial initiations and availability of clinical data; the benefit of orphan drug and fast track status; the adequacy of our capital to support our future operations and our ability to successfully initiate and complete clinical trials; the results of our collaborations; and the difficulty in predicting the time and cost of development of our product candidates. Actual results could differ materially from those contained in any forward-looking statement as a result of various factors, including, without limitation: the uncertainties inherent in the preclinical development process; our ability to protect our intellectual property rights; and legislative, regulatory, political and economic developments, as well as those risks identified under the heading “Risk Factors” in our filings with the SEC. The foregoing review of important factors that could cause actual events to differ from expectations should not be construed as exhaustive and should be read in conjunction with statements that are included herein and elsewhere, including the risk factors included in our annual report on Form 10-K filed with the SEC on August 12, 2021, and in any subsequent filings we make with the SEC. The forward-looking statements contained in this presentation reflect our current views with respect to future events. We anticipate that subsequent events and developments will cause our views to change. However, while we may elect to update these forward-looking statements in the future, we specifically disclaim any obligation to do so. These forward-looking statements should not be relied upon as representing our view as of any date subsequent to the date hereof.

Clinical proof of concept data expected across multiple programs in 2021

Metabolic programs: Two PoC opportunities

Phenylketonuria (PKU)

Proof of mechanism demonstrated in Phase 1 with healthy volunteers

SYNB1618 Phase 2 SynPheny patient data expected second half of 2021

SYNB1934 Head to Head data with SYNB1618 in healthy volunteers expected second half of 2021

Enteric Hyperoxaluria

Proof of mechanism demonstrated by SYNB8802 in Phase 1A with dietary hyperoxaluria induced in healthy volunteers

Phase 1B patient data expected second half of 2021

Immunology

Solid Tumors

Monotherapy: target engagement, meaningful pharmaco-dynamic effects, good safety

Combination with anti-PDL1: ongoing

Inflammatory Bowel Disease

Advancing research collaboration with Roche on novel IBD target

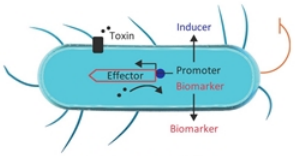
Potential to demonstrate clinical benefit of the Synthetic Biotic platform in two high value indications in 2021

A new class of medicines

Synthetic Biotic platform

Non-pathogenic
bacterial chassis

+



Programable, engineering

Targeted & controllable, **patient friendly** treatment

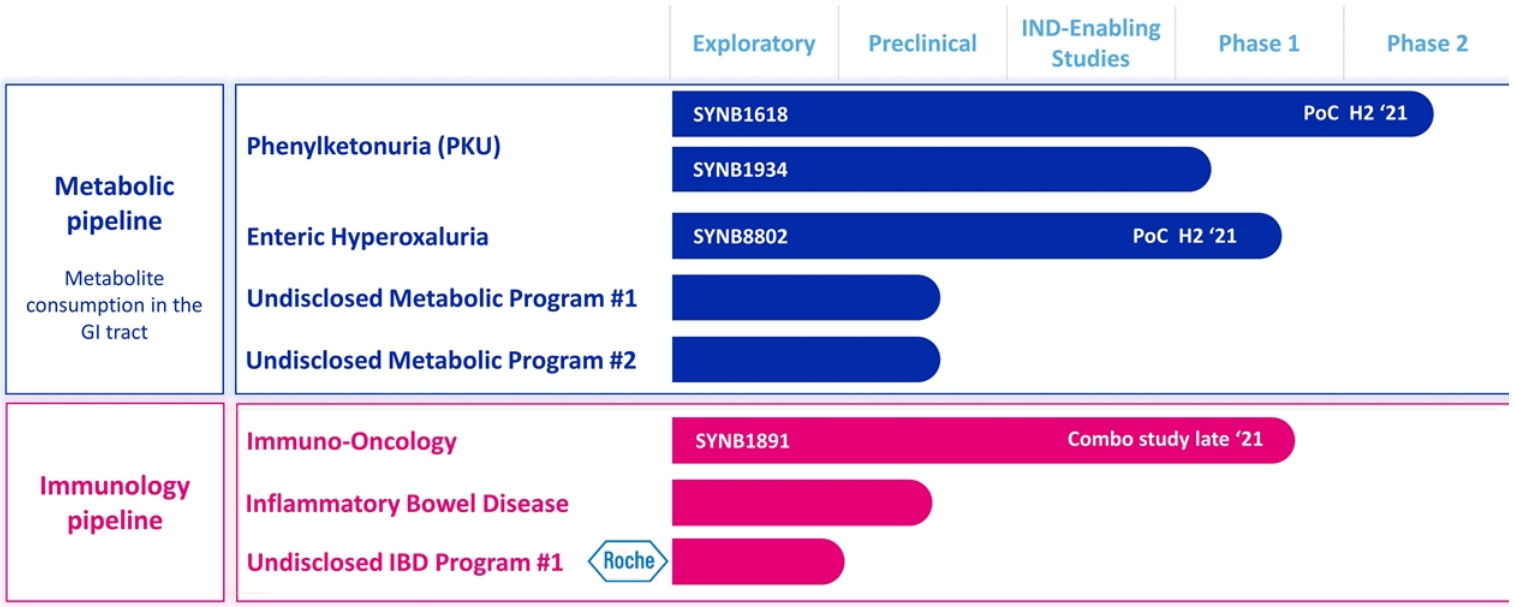
Robust pipeline

Rare metabolic therapies that **consume toxic metabolites** from the GI tract

Therapies that leverage the ability of **bacteria to interact with the immune system**

Enabling engine of synthetic biology, manufacturing and translational capabilities
Creates multiple product opportunities

Robust pipelines with meaningful catalysts



Synthetic Biotic medicines: a novel approach to metabolic disease

Why metabolic disease?

Unmet Medical Need

Validated Biology

Rationale

High **unmet need** across inherited and acquired metabolic diseases

Multiple **large and underserved markets**

Diseases with **known pathophysiology**

Dietary intervention **validates GI approach**

Why Synthetic Biotic medicine?

Unique Advantages

Proof of Mechanism

Bacteria **evolved to survive in the GI tract**

Ability to deploy multiple enzyme pathways

Drug-like approach without genetic drift or colonization

Multiple programs **demonstrate** SYNB compounds can **consume toxic metabolites** in the human GI tract

Applying Synthetic Biotic medicines to PKU and Enteric Hyperoxaluria

	Phenylketonuria (PKU)	Enteric Hyperoxaluria (HOX)
Unmet Medical Need	Many patients unable to control Phe ~70% pts do not respond to BH4 oral therapy	Recurrent and chronic kidney stones; Increased risk of chronic kidney disease progression No effective interventions or treatments
Validated Biology	Lower dietary Phe intake = lower plasma Phe levels = improved cognitive outcomes	Lower dietary oxalate intake = lower urinary oxalate = improved kidney outcomes
Unique Advantages	Modality able to consume Phe in the GI tract before it can cause damage	Modality able to consume oxalate throughout GI tract, including colon
Platform Proof of Mechanism	SYNB1618 consumes Phe and produces the TCA biomarker in both HVs and patients	SYNB8802 consumes oxalate in healthy volunteers at clinically meaningful levels

Phenylketonuria (PKU)

Current and emerging treatment options leave many patients behind

SYNB1618 demonstrates potential to lower Phe in PKU patients

SYNB1618 Phase 2 Phe-lowering trial ongoing

SYNB1934 Phase 1 study initiated

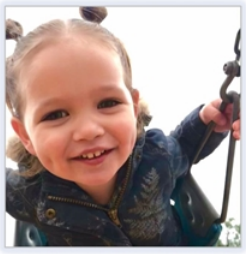
Patient need: parents expect their children to reach full potential

Historically

Prospect of severe mental disability and institutionalization.

Parents wanted PKU child to avoid institutionalized care before adulthood.

Today



Julia, living with PKU

Early diagnosis and strict diet control enables better Phe management.

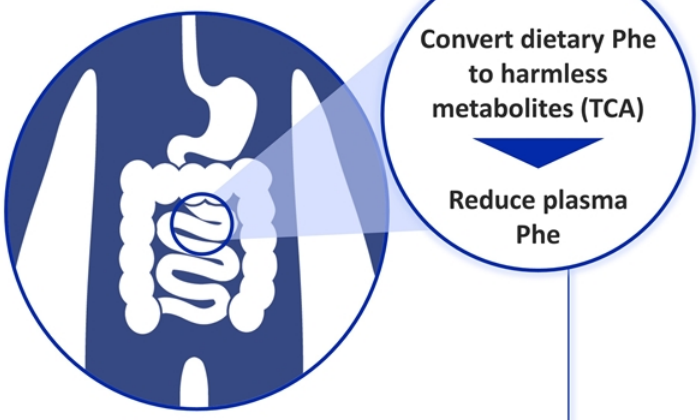
Parents expect PKU child to achieve full potential.

Reality: 25% – 65% of patients still struggle to maintain blood Phe within target range

An innovative approach in area of high unmet medical need

Our approach

Oral therapy,
3 x day with meals

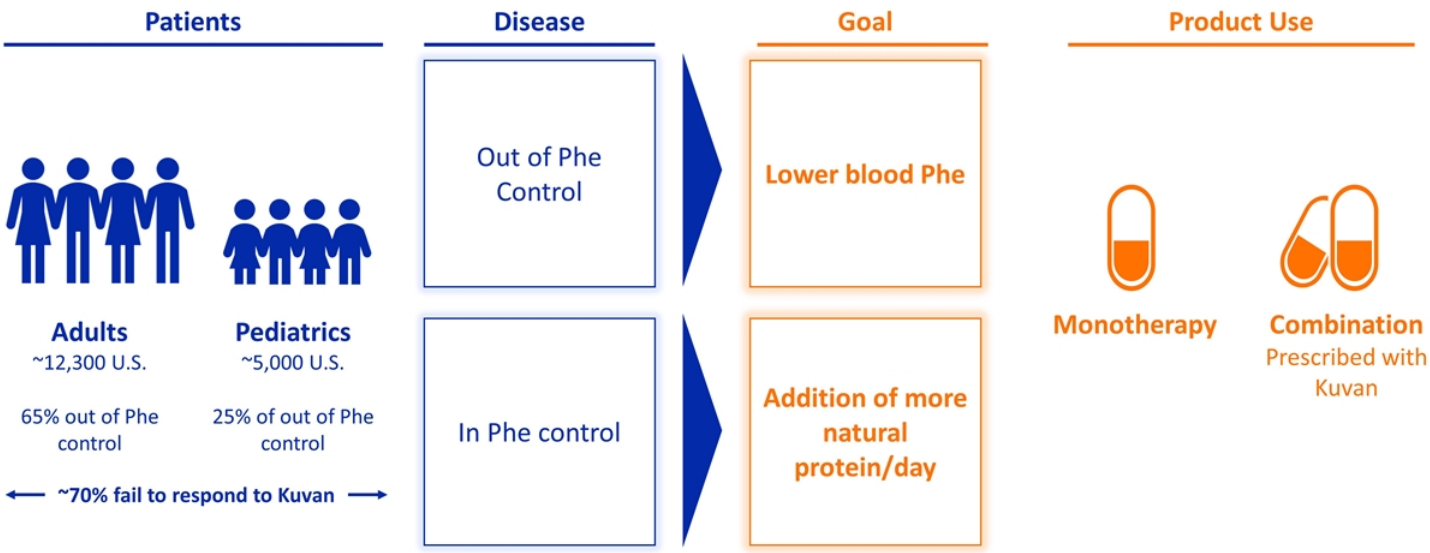


Meaningful biomarker-driven outcomes

- Lower blood Phe
- Increase Phe-metabolites such as TCA
- Addition of more natural protein into the diet

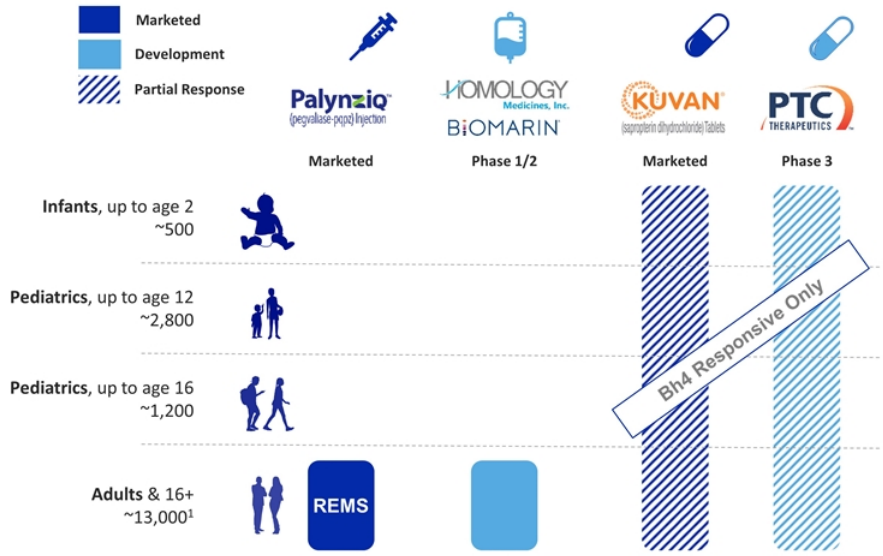
Synlogic has initiated a Ph2 Study in PKU patients (SynPheny)

Multiple areas of unmet need continue across PKU patient types



Significant market opportunity, large unmet need, with potential for new products to capture share

SYNB1618 is uniquely positioned to address those needs



SYNB1618

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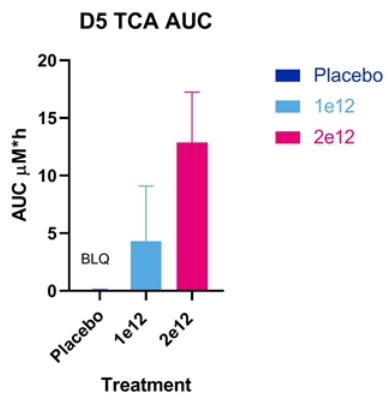
Phase 2

- Mechanism does not depend on genotype
- Appropriate for pediatrics and adults
- Benign safety profile, no systemic exposure
- Oral administration

1. *Includes 7,500 "lost to follow up"*

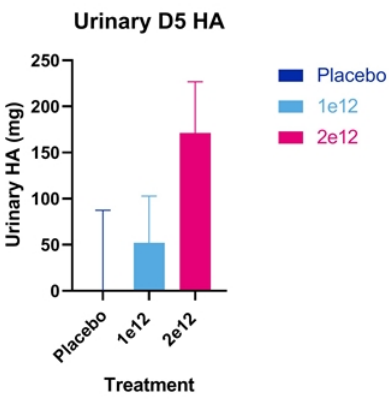
Solid oral SYNB1618 reduced Phe and elevated biomarkers in Ph1

D5 Phe Converted to D5 TCA

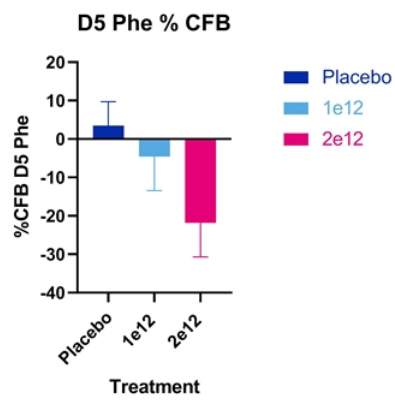


Data are means and 90% CI

D5 TCA Converted to D5 HA



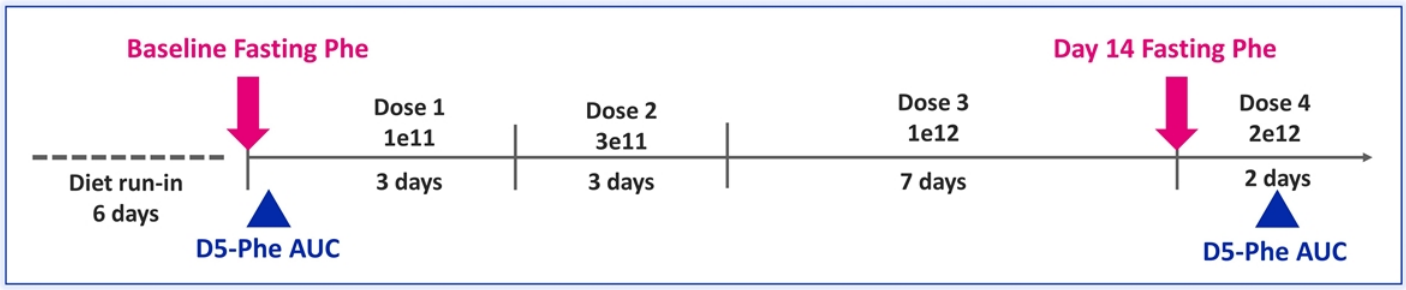
Plasma D5 Phe Blunted



Achieved Proof of Mechanism: SYNB1618 consumed D5 Phe in GI tract & lowered plasma D5 Phe

SynPheny-1 design enables Proof of Concept

TRIAL DESIGN



TRIAL OUTPUTS

Phe lowering in patients

Plasma Phe lowering in fasted state at 1e12 live cells over 7 days

Post meal D5-Phe AUC lowering at 2e12 live cells

Strict dietary management to maintain constant Phe intake

Safety & tolerability

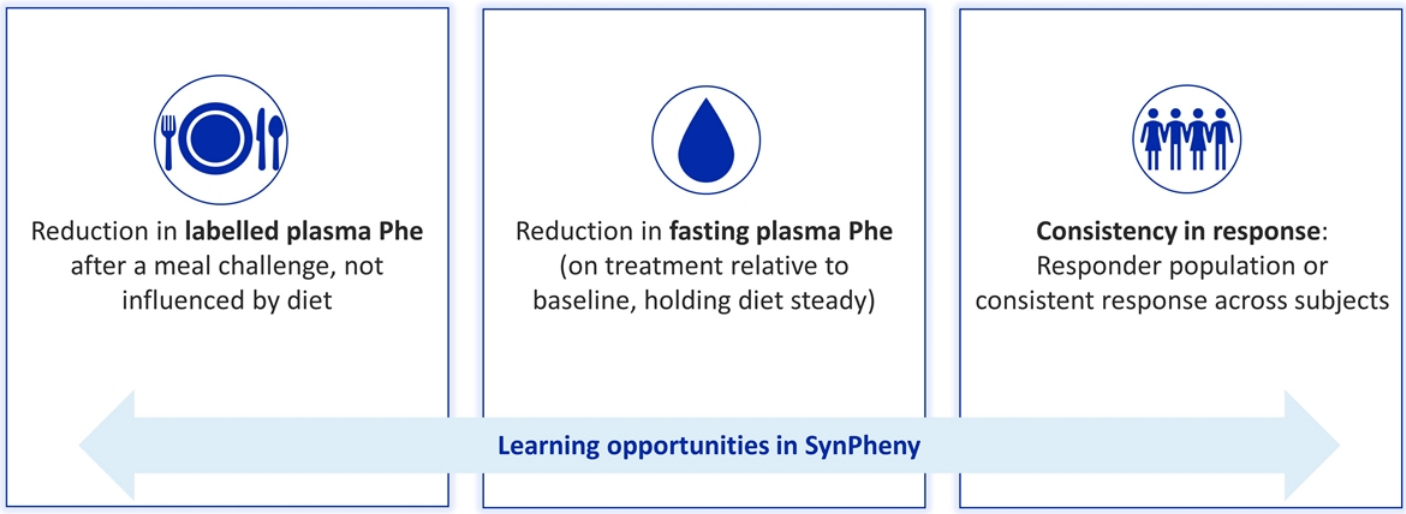
Continuously assessed throughout dosing period

N = 12

Validation of PD models

Understand relationship of **strain specific biomarkers** with plasma Phe lowering

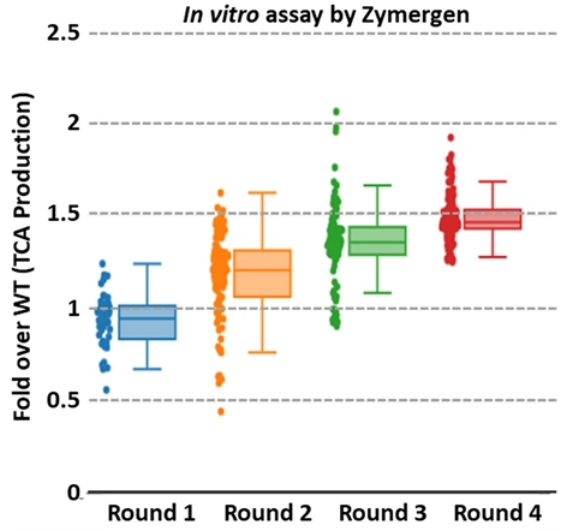
SynPheny POC Study in PKU



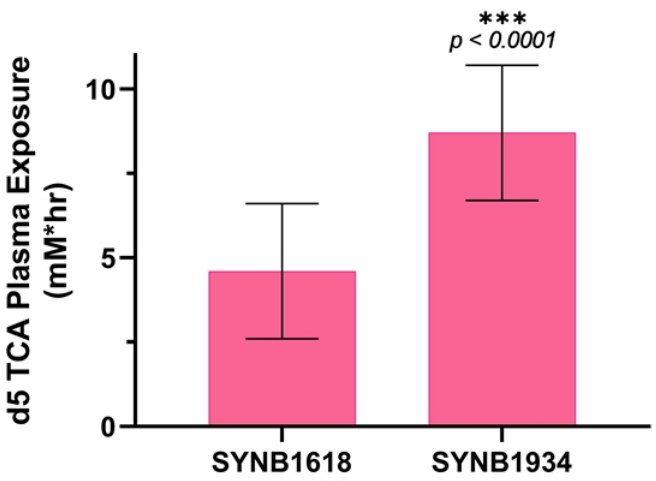
Study powered for 20% reduction in labelled plasma Phe, providing clinically meaningful endpoint for patients without other treatment options

SYNB1934: An evolved strain with potential for improved Phe-lowering

Directed Evolution



Non-Human Primates: Biomarker of Phe-Consumption



Enteric Hyperoxaluria (HOX)

Enteric Hyperoxaluria results in significant, irreversible, and progressive kidney damage

SYNB8802 proof of mechanism established: potential for best-in-class urinary oxalate lowering

Proof of concept on track for 2021 data read out

The Enteric Hyperoxaluria Patient Experience

Patients with underlying GI disorders faced with the burden of chronic and recurrent kidney stones

High levels of pain

No approved treatment options

Risk of impaired kidney function

"I would rather experience the pain of childbirth every year for the rest of my life than ever have one more stone."

- C., Female, 53 yrs. old, 7 stones

75,000 - 90,000 US patients with recurrent kidney stones have no available therapeutic options

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Source: Patel et al, 2017; Synlogic market research

Hyperoxaluria: Primary vs. Enteric

	Primary Hyperoxaluria	Enteric Hyperoxaluria
Pathology	Rare genetic condition	Dietary oxalate hyperabsorption
Onset	Pediatric	Adult
Trigger	Genetic liver enzyme deficiency	Underlying insult to bowel: including IBD, bariatric surgery, other chronic GI conditions
UOx. Levels	90 – 500 mg / 24 hrs (~10x normal)	45 – 130 mg / 24 hrs (~3x normal)
U.S. Patients	~5,000 – 8,000	~200,000 – 250,000
Key Players	Dicerna pharmaceuticals; Alnylam	Allena PHARMACEUTICALS; synlogic
Clinical consequences	**Limited ability to manage with diet | Nephrocalcinosis | Recurrent, chronic kidney stones | Impaired renal function | Systemic Oxalosis**	

An innovative approach in an area of high unmet medical need

Our approach

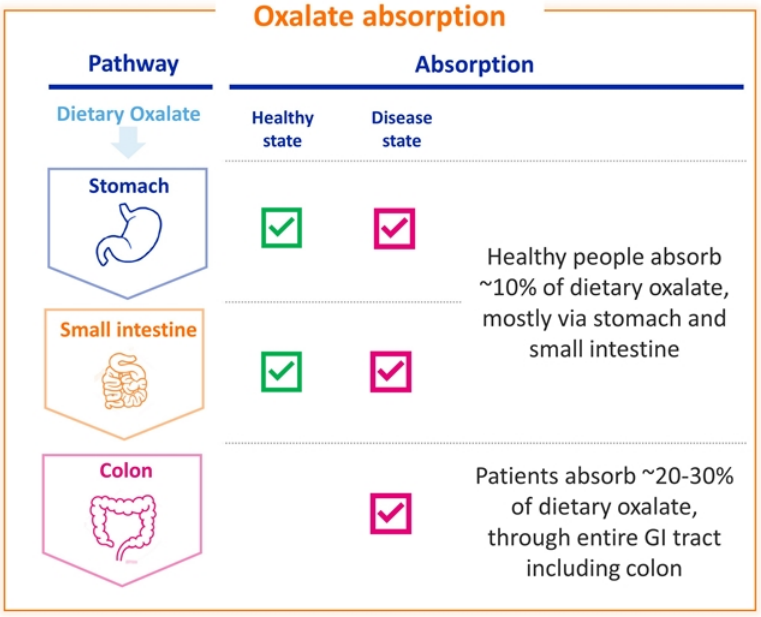
Oral therapy

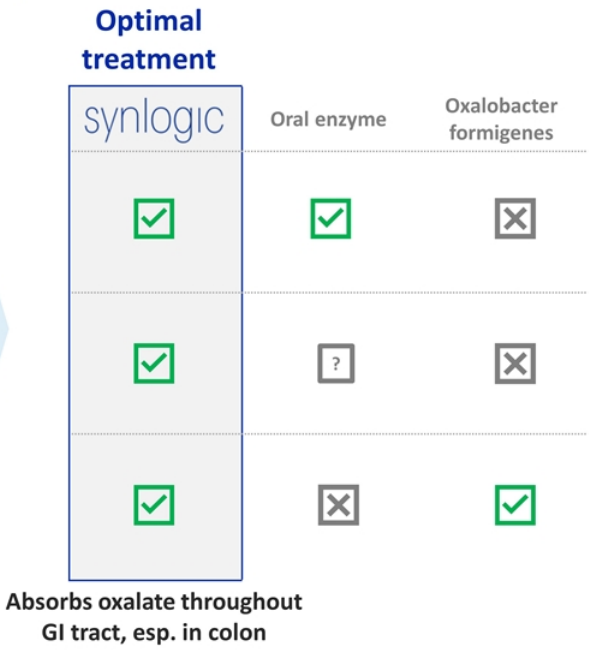
Differentiation from other approaches

Consumes oxalate in each GI compartment, throughout GI tract

Ph 1B Proof of Concept in Enteric Hyperoxaluria patients (Roux-en-Y population) initiated

SYNB8802 consumes Oxalate throughout the GI tract





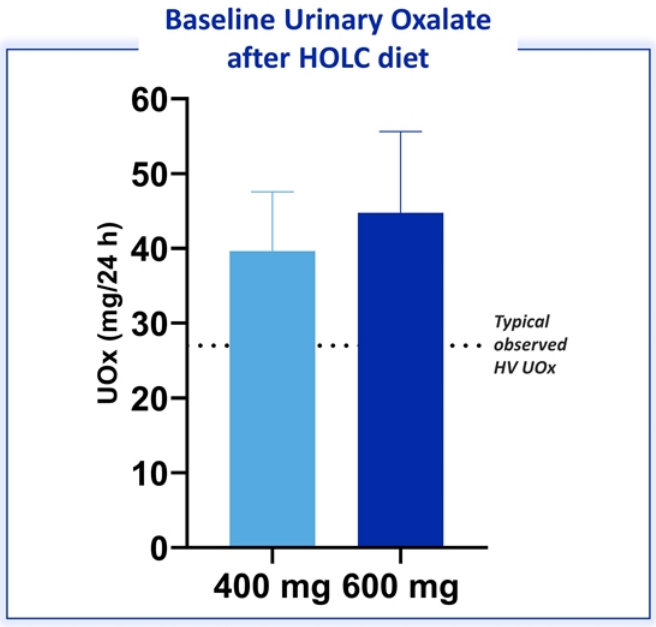
Ph1 design provides POC opportunity in 2021

Phase 1A Dietary Hyperoxaluria (Healthy Volunteers)	Phase 1B Enteric Hyperoxaluria Patients
Multiple Ascending Dose	**Cross-over**
High oxalate & low calcium diet run-in	Enteric Hyperoxaluria patients (Roux-en-Y population)
Induce dietary hyperoxaluria	Three times/day (TID) dosing
N = 45 subjects	N = 20 patients, baseline UOx >70 mg/day
Endpoints	**Endpoints:**
Primary: Safety & tolerability	***Primary:*** Change in Urinary Oxalate
Secondary: Microbial kinetics of strain	***Secondary:*** (1) Microbial kinetics of strain
Exploratory: (1) Plasma and urine biomarkers	(2) Safety and tolerability
(2) Dose frequency assessment	

Dietary hyperoxaluria model is translationally relevant to patient population

High oxalate diet successfully elevated UOx levels in HV

- American diet contains approx. 200-250 mg oxalate/day
- HV subjects were given a high oxalate, low calcium diet (HOLC) during the diet run-in and treatment phases of the study
- HV subjects absorb approx. 10% of dietary oxalate
- Urinary oxalate levels elevated to >1.5X typically observed in healthy volunteers
- Dietary intake carefully measured on in-patient unit, incl. weighing of meals consumed



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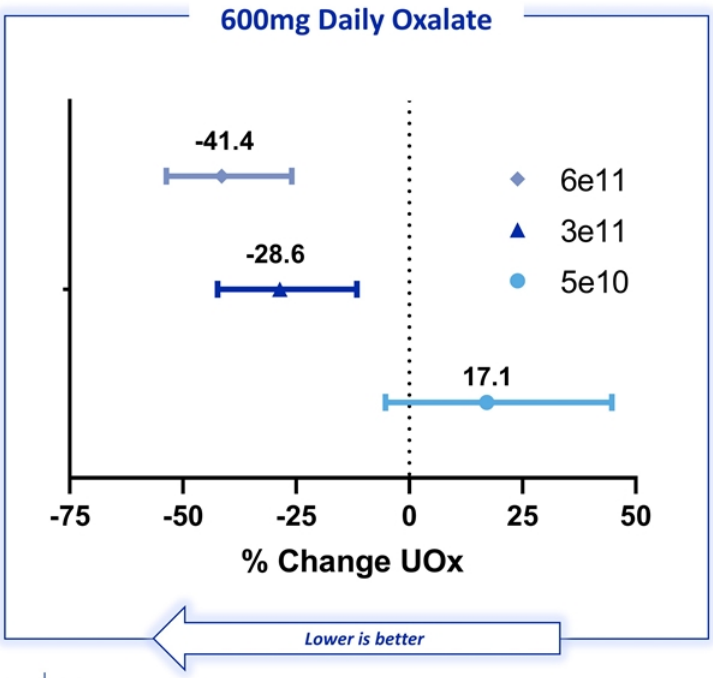
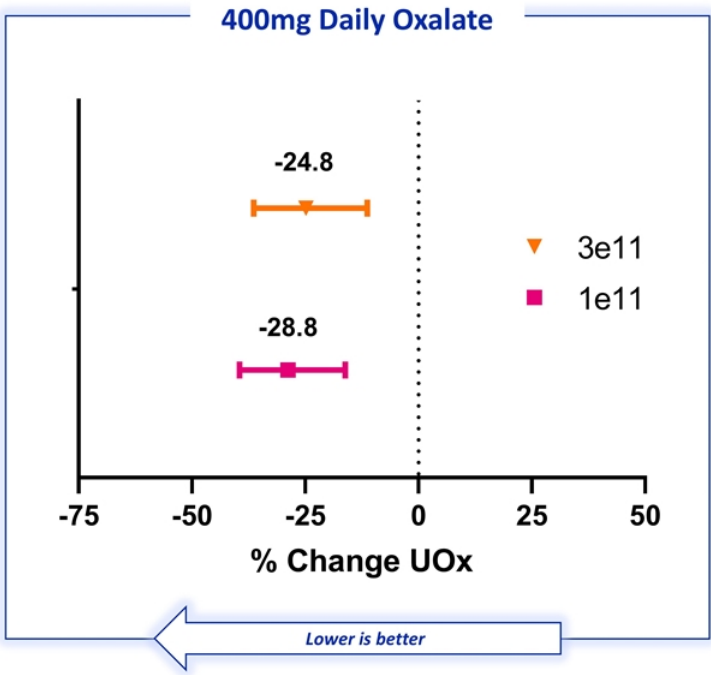
Historically Uox in HV is <40 mg/24h. Examples: Langman 2018, (27 mg), Quintero 2020, (19.8mg), Captozyme 2018 (28 mg). Mean +/- SD shown.

Dose-responsive and reproducible Uox lowering demonstrated

Efficacy Analysis (% Change from Baseline in 24h UOx over Pbo)





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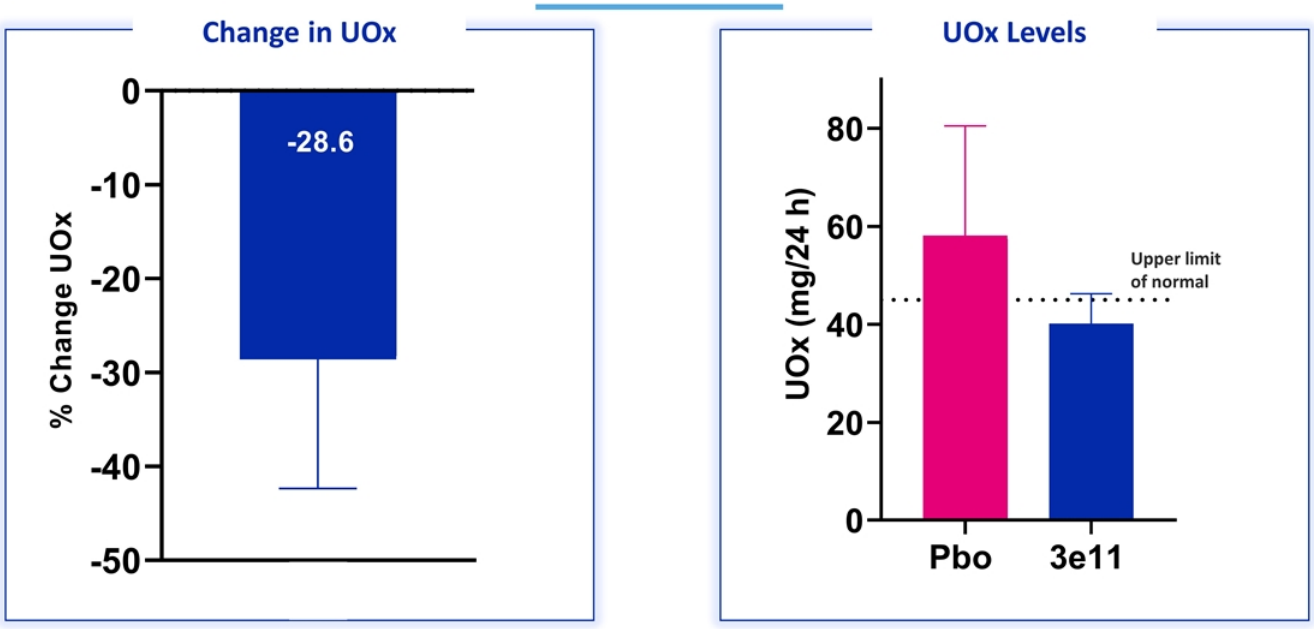
LS mean change over Placebo, +/- 90% CI, all days baseline and treated

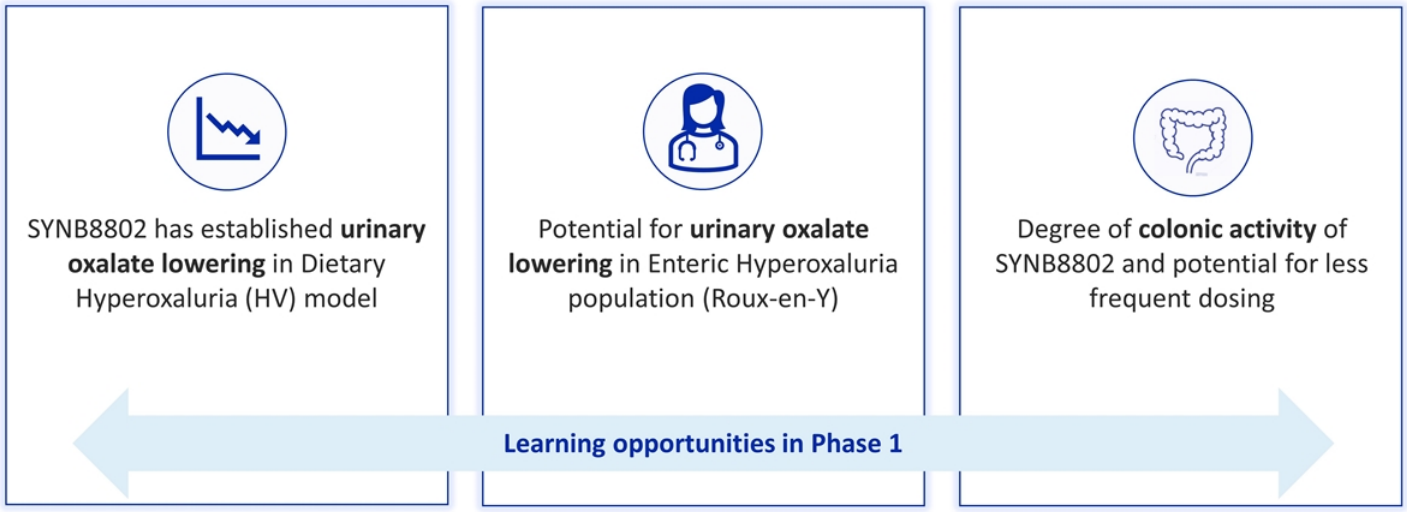
SYNB8802 3e11 live cells dose advancing to Ph1B in patients



Clinically meaningful lowering of urinary oxalate demonstrated at a well tolerated dose

LS mean change over Placebo, +/- 90% std error of mean, all days; and 24hr UOx after 5 days of dosing, +/- 90% std error of mean. 600mg daily oxalate.

Opportunity for multiple clinically relevant outcomes in Phase1B



Potential to demonstrate meaningful urinary oxalate lowering in patients with active disease

SYNB8802 Summary: 3e11 live cells moving into patients

- SYNB8802 was generally well tolerated in healthy volunteers. No serious or systemic adverse events. Most frequent AEs mild or moderate, transient, and GI-related
- Dose responsive changes in urinary oxalate levels were observed with a significant reduction in urinary oxalate relative to placebo across three dose levels
- Baseline urinary oxalate reduction of 28.6% compared to placebo
- Mean 24-hour urinary oxalate level of 40.1 mg for subjects, compared to 58.1 mg for placebo, at the end of dosing
- 3e11 live cells dose will advance to patient studies

Synlogic is entering a data rich period in the clinic

		H1 2021	H2 2021
PKU	Ph2 SynPheny proof of concept read-out		SYNB1618
	SYNB1934 Head to Head data in HV		SYNB1934
Enteric Hyperoxaluria	Ph1A study in HV read-out	SYNB8802	
	Initiate Ph1B study in patients	SYNB8802	
	Ph1B proof of concept read-out		SYNB8802
Immuno-Oncology	Ph1 Arm 2 combination read-out		SYNB1891

Robust portfolio with significant clinical readouts in 2021

Second Quarter, 2021

Summary Results

Balance Sheet (unaudited)	30 June 2021	31 December 2020
Cash, Cash Equivalents, and Marketable Securities	$115.5 M	$100.4 M

	Three Months Ended	
Statement of Operations (unaudited)	**30 June 2021**	**30 June 2020**
R&D Expenses	$10.7 M	$12.9 M
G&A Expenses	$4.1 M	$3.5 M
Net Loss	$(14.5 M)	$(15.5 M)
Net loss per share – basic and diluted*	$(0.28)	$(0.44)
*Weighted Average Shares Outstanding**	*52.0 M*	*34.9 M*

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* weighted average shares used in computing net loss per shares - basic and diluted

Experienced leadership team and Board

Leadership Team

Aoife Brennan, MB ChB
President & CEO

Dave Hava, PhD
Chief Scientific Officer

Caroline Kurtz, PhD
Chief Development Officer

Antoine Awad
Chief Operating Officer

Daniel Rosan
Head of Finance & Investor Relations

Board of Directors

Peter Barrett, *Chair*
Atlas Venture

Mike Burgess
Turnstone Biologics

Michael Heffernan
Collegium

Patricia Hurter
Lyndra Therapeutics

Lisa Kelly-Croswell
Boston Medical Center Health System

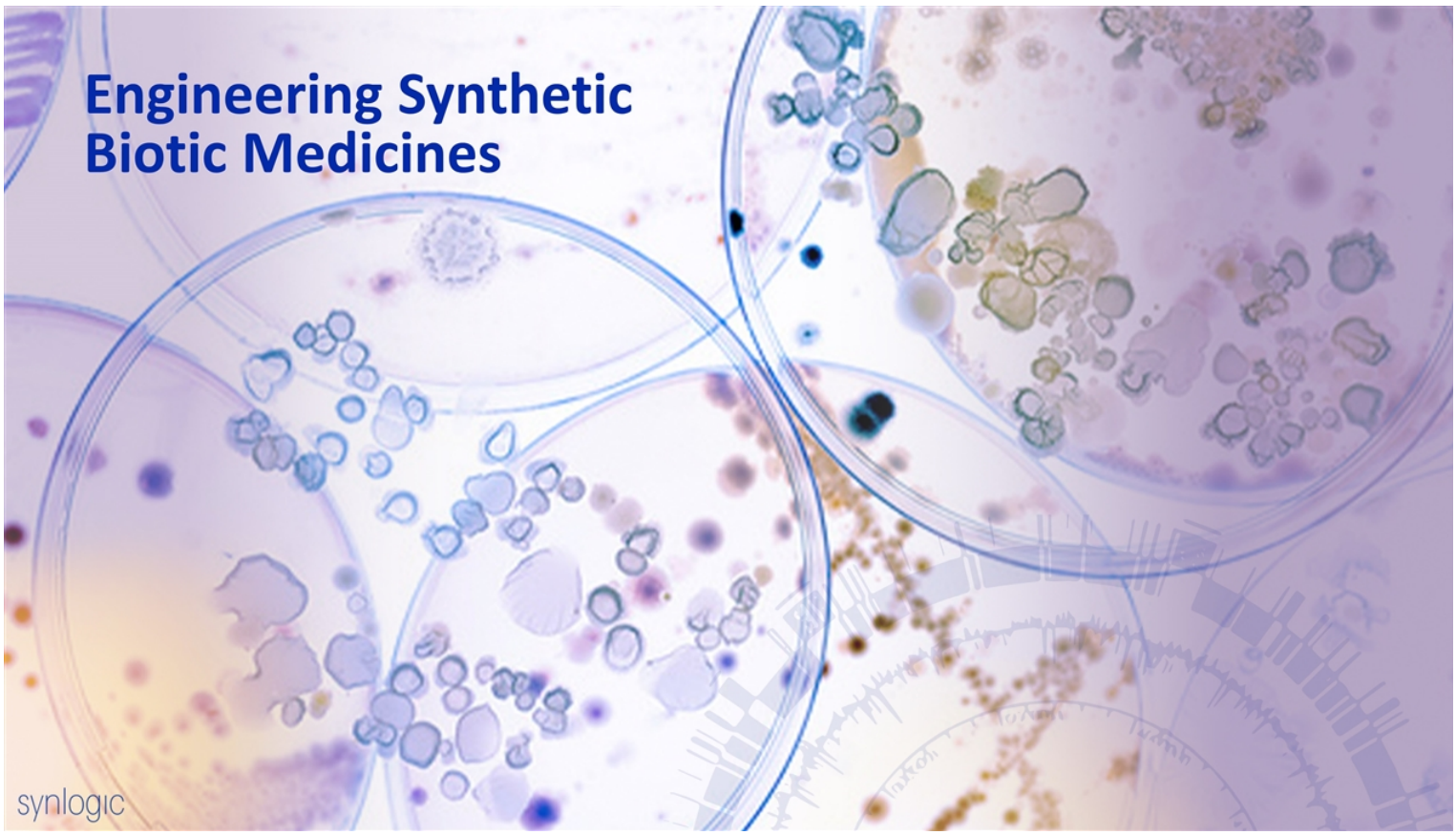
Nick Leschly
Bluebird Bio

Ed Mathers
NEA

Richard Shea
Syndax

Collaborators

GINKGO BIOWORKS
THE ORGANISM COMPANY


Engineering Synthetic
Biotic Medicines
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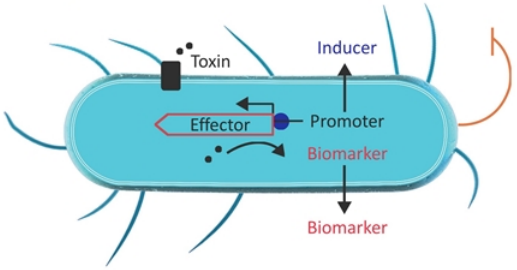
A new class of medicines

Non-pathogenic bacterial chassis

E. coli Nissle

+

Programable, controllable engineering



Inducer-Promoter Switch

Effector Design

Safety Features

=

Synthetic Biotic Medicine

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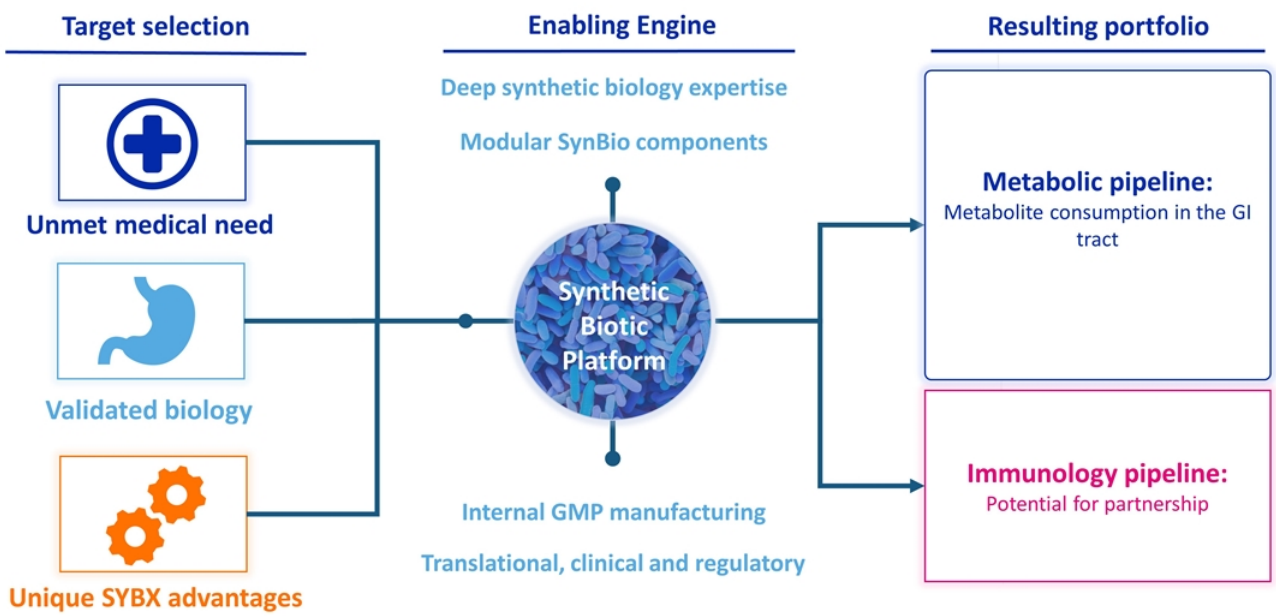
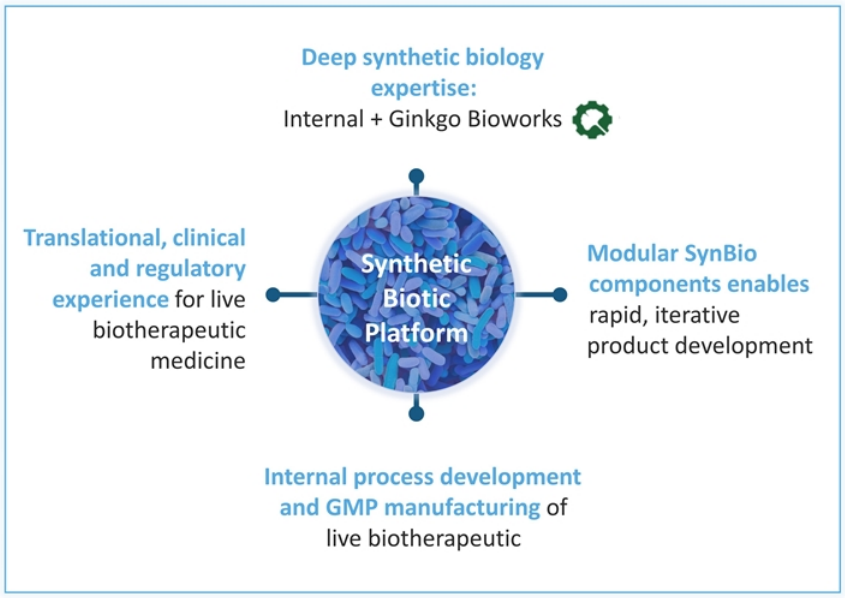
- Drug-like properties
- Does not colonize
- No *in vivo* reproduction or risk of genetic drift

Reusable parts enable rapid iteration of rationally designed prototypes

Synthetic Biotic Platform accelerates pathway into the clinic



Synthetic Biotic Platform is enabling engine for drug development



>200 humans dosed with Synthetic Biotic medicines

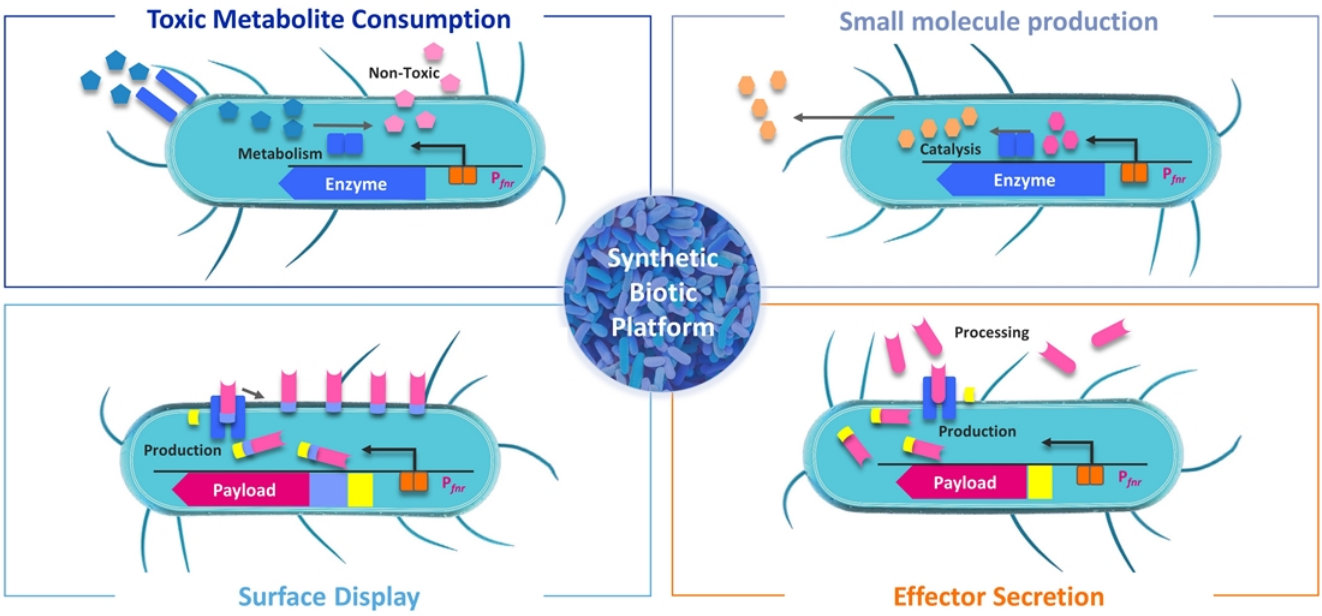
5 INDs opened with the U.S. FDA

Supportive regulatory feedback from global agencies

Safe chassis organism (>100 years of human experience)

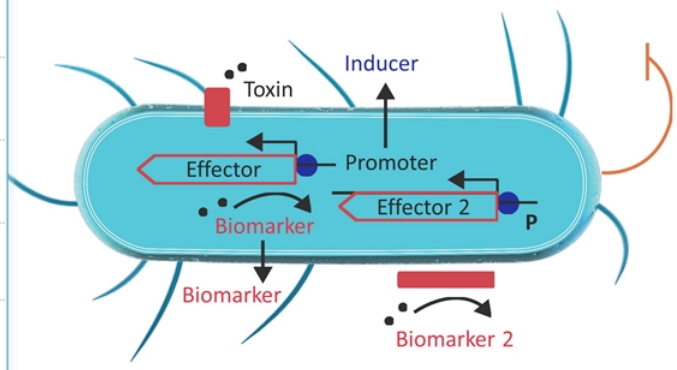
Rapid pipeline expansion possible with reusable engineering

Versatile platform enables diverse therapeutic strategies for range of diseases



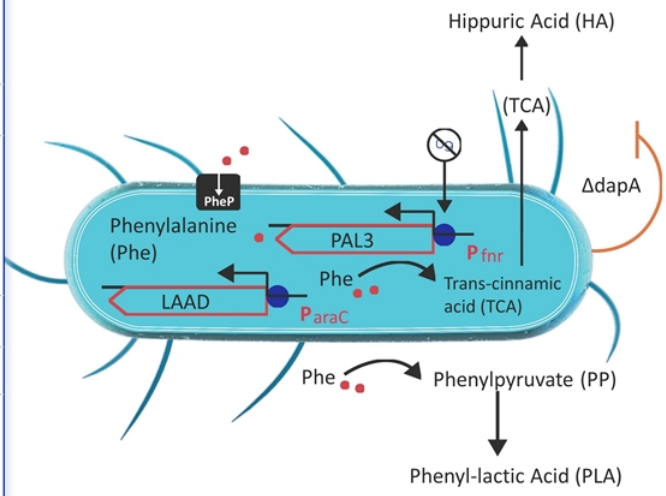
Reusable parts enable rapid iteration of rationally designed prototypes

Component	Library of parts
Therapeutic strategy	Metabolite consumption, small molecule production, effector secretion or surface display
Bacterial Chassis	Probiotic: Decades of human use & safety data
Effector(s)	Proteins for activity: Can generate biomarkers
Pump	Transports metabolites or proteins across cell membrane
Switch	Inducer-promoter pair: Controls gene expression
Safety Features	Auxotrophies: Prevents growth within or external to the body



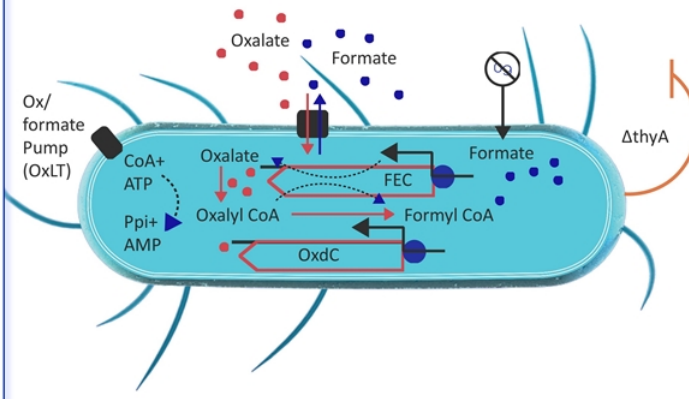
SYNB1618 & SYNB1934 Design

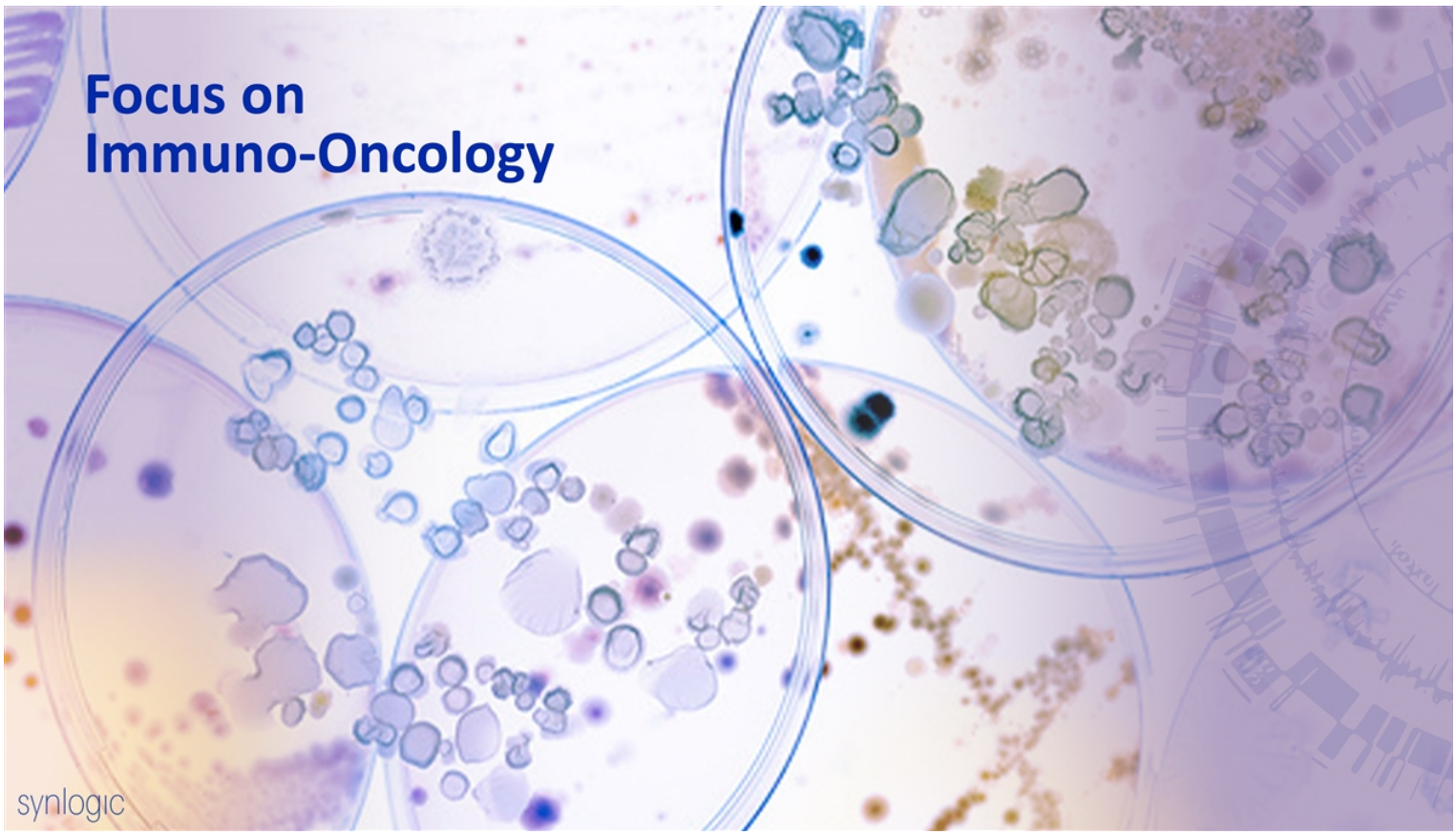
Component	Design
Therapeutic strategy	**Metabolite consumption:** Built from Synthetic Library Specifically to Consume Phe
Bacterial Chassis	***E. coli* Nissle**
Effector(s)	***SYNB1618: Wild Type* PAL3 Enzyme** ***SYNB1934*: Evolved PAL3 Enzyme** Degrades Phe to TCA (measurable biomarker of activity)
	***LAAD* Enzyme:** Alt. Phe-consuming pathway
Pump	***PheP:*** Pumps Phe into cell
Switch	**SYNB1618: FNR & AraC promoters** **SYNB1934: Ptac** Control gene expression
Safety Features	***Δ dap:*** Auxotrophy – requires diaminopimelic acid (DAP) to grow



SYNB8802 Design

Component	SYNB8802 Design
Therapeutic strategy	**Metabolite consumption:** Engineered to Convert Oxalate to Formate for the Treatment of Enteric Hyperoxaluria
Bacterial Chassis	***E. coli* Nissle**
Effector(s)	***OxdC and associated components:*** Catalyzes conversion of oxalate to formate
Pump	***OxLT:*** Pumps oxalate in & formate out
Switch	**FNR promoter:** Inducer-promoter pair
Safety Features	***Δ thyA:*** Controls growth




Focus on
Immuno-Oncology
synlogic

Immuno-Oncology

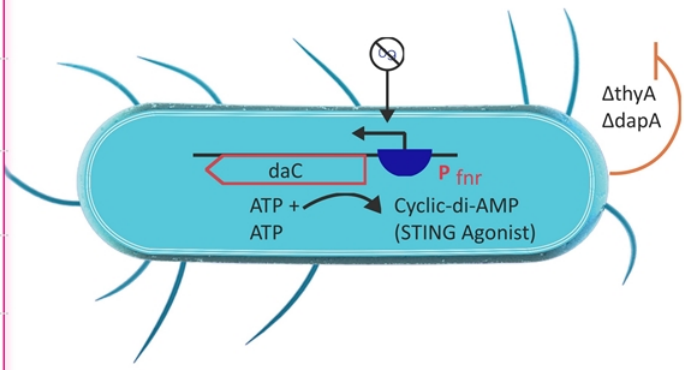
SYNB1891 potential for improved efficacy relative to other STING approaches

SYNB1891 monotherapy demonstrated meaningful pharmacodynamic effects

Phase 1 in combination with Tecentriq initiated: Data will be available in 2021

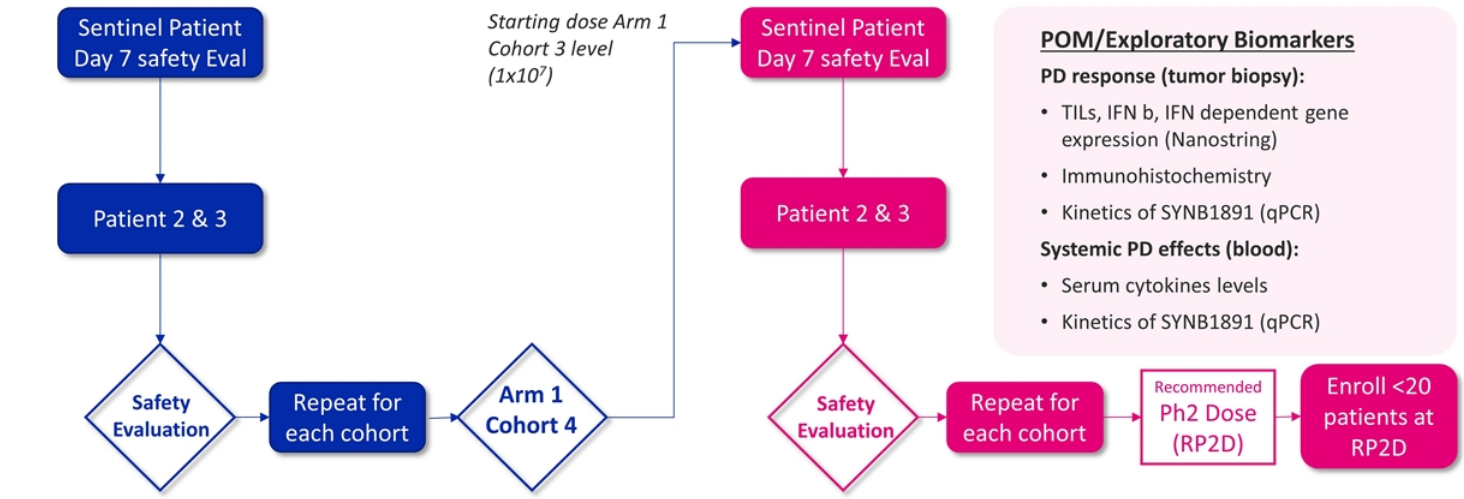
SYNB1891 Design

Component	SYNB1981 Design
Therapeutic strategy	**Small molecule production:** Leveraging the ability of bacteria to interact with the immune system to turn a cold tumor hot
Bacterial Chassis	***E. coli* Nissle:** Targeting to antigen presenting cells in the tumor microenvironment. Innate immune activation
Effector(s)	**STING Agonist:** Innate immune activator compounds with chassis effect
Pump	Not necessary
Switch	STING-agonist production restricted to hypoxic TME for sustained payload delivery
Safety Features	Dual auxotrophies inhibit bacterial proliferation outside of tumor



Phase 1 design: multidose tolerability, IT mono and combo

Proof of mechanism: exploratory biomarkers in advanced solid tumors or lymphomas



Combination with PD-1 will identify Phase 2 dose, provide evidence of target engagement, safety, and support for target tumor type

SYNB1891 advanced into combo. therapy arm of Ph. 1 with Tecentriq

- SYNB1891 is **safe and well-tolerated** as an intratumoral injection with no dose limiting toxicities or infections to date
- SYNB1891 **demonstrates target engagement** as assessed by upregulation of IFN-stimulated genes and T-cells
- SYNB1891 demonstrates **meaningful pharmacodynamic effects** including systemic cytokine responses observed in two subjects
- Evidence of **durable stable disease** was observed in two patients
- **Monotherapy dose escalation will continue in parallel to combination dose** escalation of SYNB1891 with fixed dose of Atezolizumab (Tecentriq)
- Combination therapy **data will be available in late 2021**