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Transforming Medicine Through Synthetic Biology

Corporate Presentation

January 2024

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 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," “look forward,” "estimate," "expect," "intend," “on track,” "plan," "predict," “prepare” 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 approach to Synthetic Biotics to develop therapeutics to address a wide range of diseases including: inborn errors of metabolism and inflammatory and immune disorders; our expectations about sufficiency of our existing cash balance; the future clinical development of Synthetic Biotics; the approach Synlogic is taking to discover and develop novel therapeutics using synthetic biology; and the expected timing of Synlogic's clinical trials of labafenogene marselecobac (SYNB1934), SYNB1353, SYNB8802 and SYNB2081 and availability of clinical trial data. Actual results could differ materially from those contained in any forward-looking statements 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 U.S. Securities and Exchange Commission. 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.

Amanda, Lives with PKU

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Our Mission

To ***transform the care of serious diseases*** *through a* ***new class of medicines***

SYBX Investment Summary

Milestone-rich outlook with lead program in Phase 3, followed by deep pipeline of rare disease assets

>$1B revenue opportunity in clinically validated, Phase 3 lead candidate

- PKU: large, widely diagnosed rare disease population, and majority remain without medical treatment
- Prior approvals validate commercial opportunity, provide precedent and de-risk clinical, regulatory path
- Favorable, differentiated SYNB1934 (labafenogene marselecobac): oral, non-systemic, reversible
- Phase 2 data provide clear clinical proof of concept, and demonstrated a favorable safety profile
- Currently being evaluated in pivotal Synpheny-3 study

Pipeline of novel, oral, non-systemic drug candidates focused on rare diseases

- Pipeline of orally-administered, non-systemic biotherapeutics targeting validated targets in rare diseases
- Phase 2-ready SYNB1353 for HCU builds on PKU program with synergies in clinical, commercial synergies
- Earlier stage assets include programs in enteric hyperoxaluria, gout, and cystinuria

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Multiple anticipated milestones in 12-18 months

Expected milestones for Synpheny-3 pivotal study of labafenogene marselecobac for PKU include:

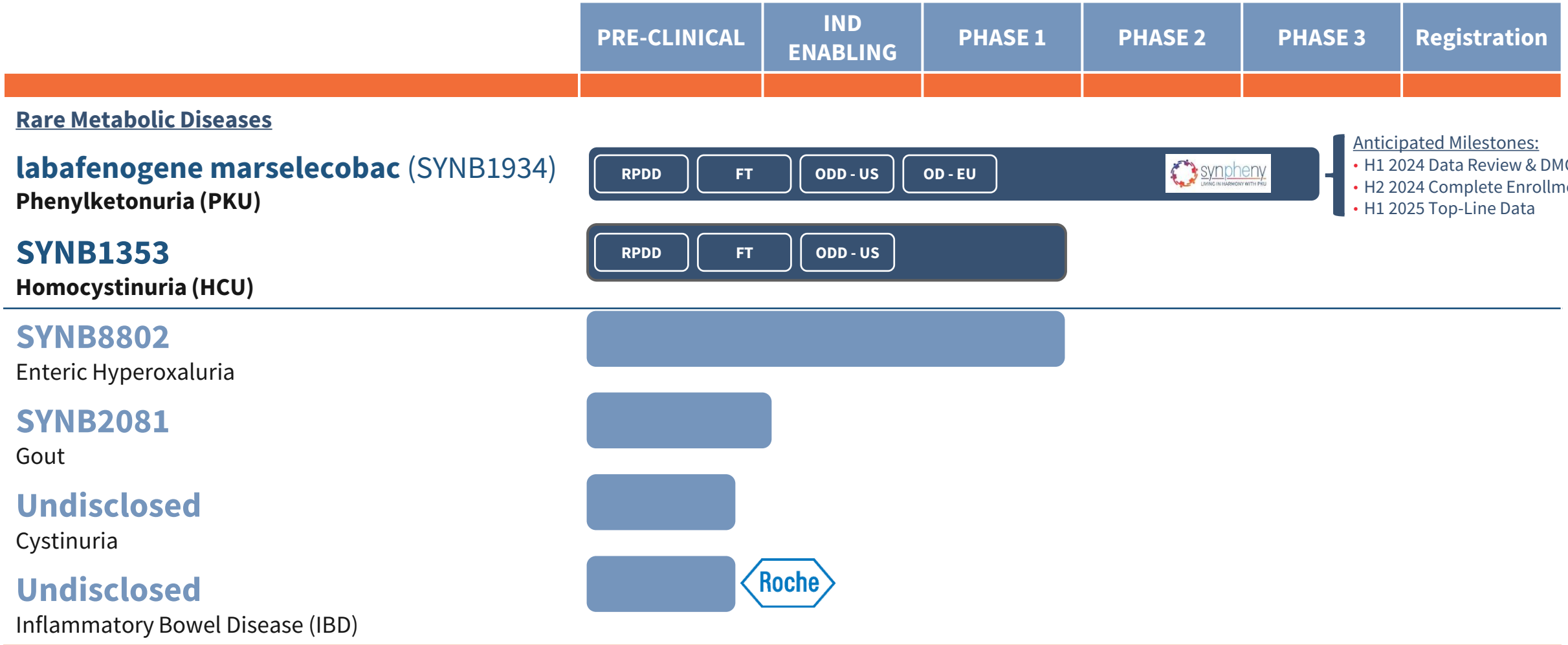
- **H1 2024:** DMC review of initial data for potential study expansion to include 12 to 17 year olds
- **H2 2024:** Full study enrollment
- **H1 2025:** Top-line data announced

Cash runway extended into H1 2025

- Gross proceeds from $21mm underwritten offering and $2.5mm milestone payment from Roche collaboration add to September 30, 2023 cash balance of $33.4mm
- Cash runway extended into the first half of 2025

High-Potential Pipeline with Lead Program in Phase 3 for PKU

Late-Stage Drug Candidates Focused on Rare Metabolic Diseases



RPDD = Rare Pediatric Disease Designation granted by FDA | FT = Fast Track granted by FDA | ODD – US = Orphan Drug Designation granted by FDA | OD – EU = Orphan Designation granted by EMA

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HCU, PKU Programs Provide Clinical, Commercial Synergies

Both programs offer strong commercial potential, biomarker endpoints, and favorable precedent approvals

Disease	**Candidate**	**Clinical Biomarker Endpoint[1]**	Development Stage	Est. U.S. Prevalence	**Potential Peak Global Revenue**
Phenylketonuria (PKU)	**labafenogene marselecobac** (SYNB1934)	Phenylalanine (Phe)	Pivotal, Phase 3 • Enrollment 2024 • Top-line data H1 2025	~17,000	**>$1B**
Homocystinuria (HCU)	**SYNB1353**	Total Homocysteine (tHcy)	Advancing to Phase 2	~2,500	**>$500mm**

Development, Commercialization Synergies

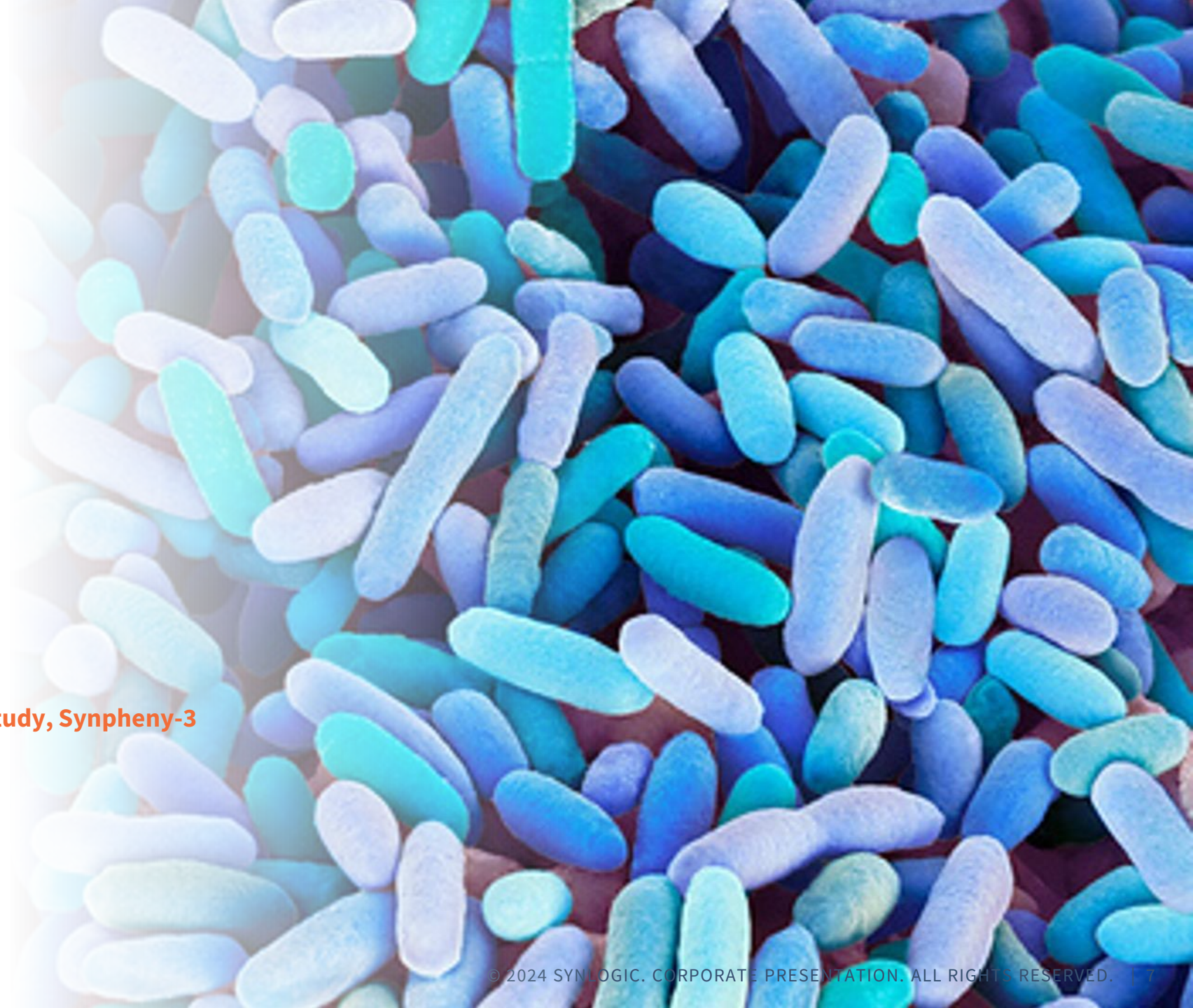
- Both rare metabolic diseases, caused by inborn errors of metabolism
- Shared clinics, sites of care & connected patient communities, facilitating clinical development

1. For PKU: Kuvan, Palynziq both approved based on phenylalanine (Phe) change vs. PBO; For HCU: Cystadane approved based on change in total homocysteine (hTCY)

labafenogene marselecobac
(SYNB1934)

Currently being evaluated in global pivotal study, Synpheny-3

- Rare Pediatric Disease Designation (FDA)
- Fast Track Designation (FDA)
- Orphan Drug Designation (FDA)
- Orphan Designation (EMA)



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Potential to Transform Care in PKU

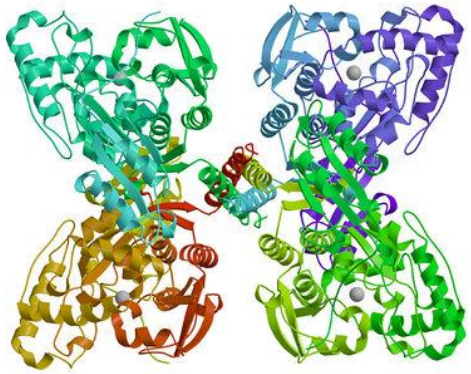
>$1B WW Revenue Opportunity, Exclusivity into 2041

- Large orphan disease population, **majority without medical treatment** due to limits of today's options
- **De-risked path to approval**, **reimbursement** from precedent products
  - Two approved products, with <25% share, have generated a combined $750 million in annual peak revenues
- **Compelling expected product profile:** oral, convenient and conducive to global distribution
- **Broad global patent protection**

Potential as 1st and only orally-administered biotherapeutic for PKU, for use as either monotherapy or adjunctive medical treatment

FDA-Accepted Biomarker Phenylalanine (Phe)

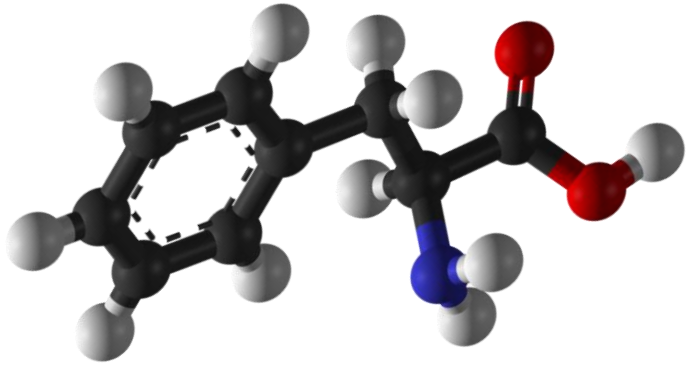
PKU: Caused by inherited defects in PAH enzyme, impairing Phe metabolism



Phenylalanine Hydroxylase (PAH)

- PKU is the **most prevalent inborn error of metabolism** (~150,000 WW diagnosed prevalence)
- PKU mutations impair PAH's metabolism of the amino acid **phenylalanine (Phe)**, found in all dietary protein
- Uncontrolled, **accumulated Phe can be neurotoxic,** causing deficits in mental processing, executive function[1]
- Widespread **newborn screening facilitates diagnosis, provides reliable epidemiology** since the 1960s

Phe levels provide a well-accepted biomarker for a clinical endpoint



Phenylalanine Structure

- **Clinical role:** goals of 120–360 µmol/l for life (vs. >1,200 for "classical PKU")[3]
- **Regulatory validity:** Precedent as primary endpoint for full approval[4]
- **Commercial utility:** Surrogate for outcomes used in payer assessments[5]

1. Waters, et al. *J. Global Health* (2018). 2. Hillert et al. *American Journal of Human Genetics* (2020). 3. Vockley et al. *Genetics in Medicine* (2014) 4. USPIs of Kuvan, Palynziq 5. Synlogic Payer Market Research

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Clinical Development & Commercialization in PKU is Facilitated by Connected, Concentrated Patients and Specialty Clinician

US Clinics that Treat PKU

17,000
US Population (est.)

- Care for patients with inborn errors of metabolism like PKU is provided through a **well-defined network of metabolic clinics**[1]
- PKU clinicians represent a **focused potential prescriber universe,** including in the US:
- ~150 metabolic dietitians[2]
    - ~1,000 medical geneticist physicians[3]
- After diagnosis, **patients and families are connected** to local and national organizations for support, facilitating communication

1. National PKU Alliance (NPKUA): https://www.npkua.org/Resources/Find-a-Clinic;
2. Genetic Metabolic Dietitians International (GMDI)
3. US Government Accountability Office, Genetic Services: Information on Genetic Counselor and Medical Geneticist Workforces, 2020.

PKU Drugs Have Straightforward Reimbursement Process

- **Access:** Through pharmacy benefit, (specialty tier), per each medical policy aligned to label/protocol
- **Reimbursement:** Prior Authorization requirements typically requiring:
  - Physician attestation
  - Clinical notes and Phe lab values
- **Re-Authorization:** Response in Phe reduction for re-authorization[1]
- **Distribution:** Through specialty pharmacy(ies) contracted with manufacturer

Analog Pricing: Rare Metabolic Disease Drugs

Drug	Indication	Annual Price (Adult, US)
Carbaglu (carglumic acid)	Hyperammonemia due to NAGS deficiency	~$600,000
Ravicti (glycerol phenylbutyrate)	Urea cycle disorders (UCDs)	~$700,000
Orfadin (nitisinone)[2]	Hereditary tyrosinemia type 1 (HT-1)	~$325,000
Lumizyme (alglucosidase alfa)	Pompe disease	~$600,000
Palynziq (pegvaliase injection)	PKU	~$200,000
Kuvan (sapropterin)[2]	PKU	~$200,000

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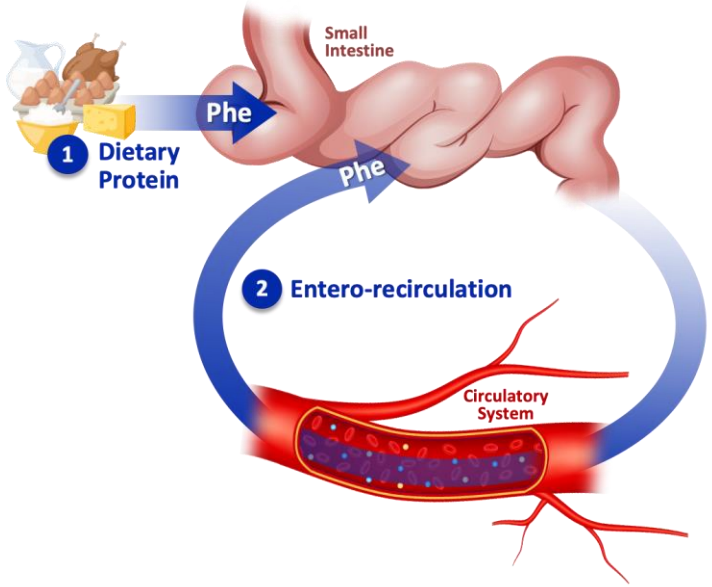
1. United Healthcare and other US payer medical policies for Palynziq, Kuvan; Synlogic US payer market research 2. Pre-Loss of Exclusivity/generic entry

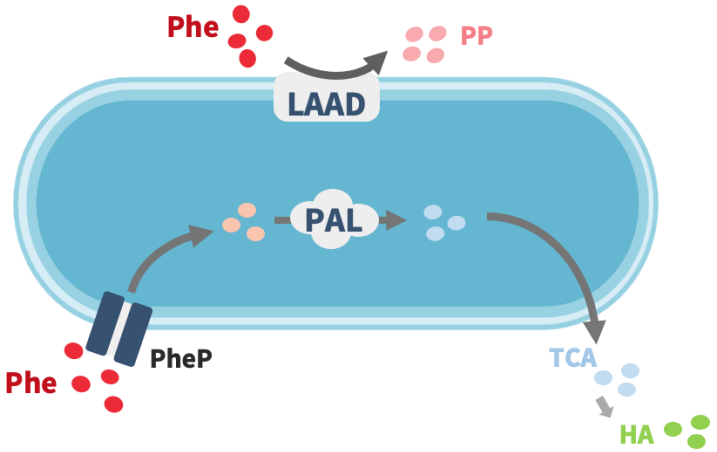
labafenogene marselecobac (SYNB1934): Designed to Consume Phe, Meet Patient Needs

Targeting Dietary & Circulating Phe in the GI Tract



The small intestine provides a reservoir for targeting Phe, from both diet-derived sources and enterorecirculation[1]

SYNB1934: Optimized for Needs in PKU



Mechanism of Action[2]

Phe-consuming enzymes (Phe ammonia lyase (PAL) and L-amino acid deaminase (LAAD)) produced by and encapsulated in an engineered *E. coli* Nissle

(probiotic with >100 yrs of human dosing)

Expected Product Profile[3]

- ✓ Powder for mixing with water or apple juice (familiar and preferred format for patients)[1]
- ✓ ↓ Plasma Phe & ↑ dietary Phe tolerance
- ✓ Studied as both monotherapy and adjunctive medical treatment[1]
- ✓ Non-systemic absorption, reversible

1. Chang et al. *Artif. Cells Blood Substit. Immobil. Biotechnol.* 23, 1–21 (1991). 2. Adolfsen, et al. *Nature Communications* (2021). 3. Per study design for Synpheny-3, as described on clinicaltrials.gov

TCA = trans-cinnamic acid; HA = hippuric acid,- both are metabolic byproducts specific to Phe metabolism by PAL

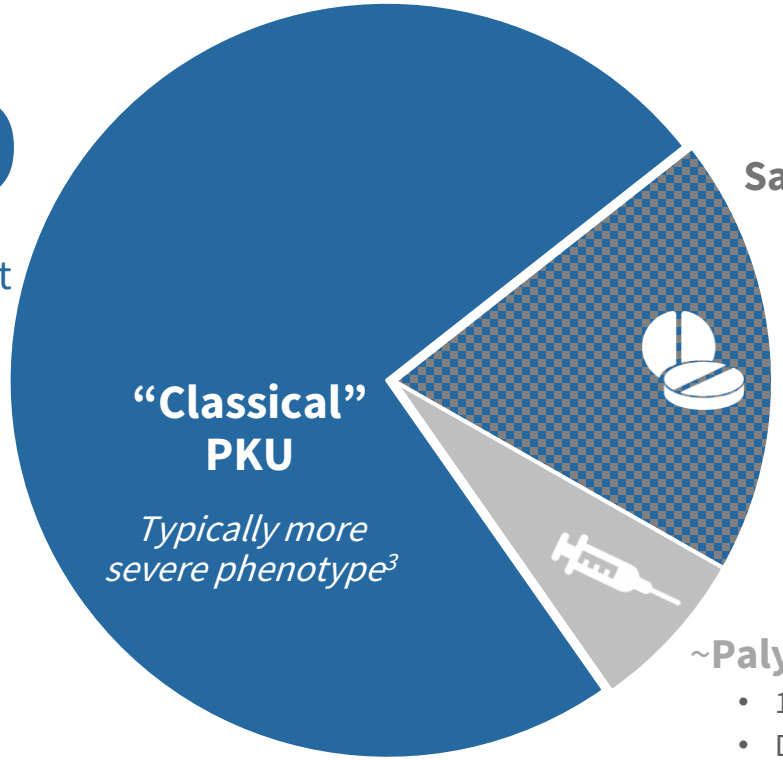
Current Treatment Limitations Leave Need for New Approach

Estimated Share by Treatment Status of PKU Patients, US:

(n=17,000)[1]

>70%

of PKU patients remain without medical treatment[2]



Sapropterin (Kuvan,® pterin class)[2]

- Limited to more mild, BH4-responsive patients[3]
- **~$500mm/year revenue** pre-genericization[2]
- **Adjunctive medical treatment opportunity**[4]

~Palynziq® (pegvaliase injection)[2]

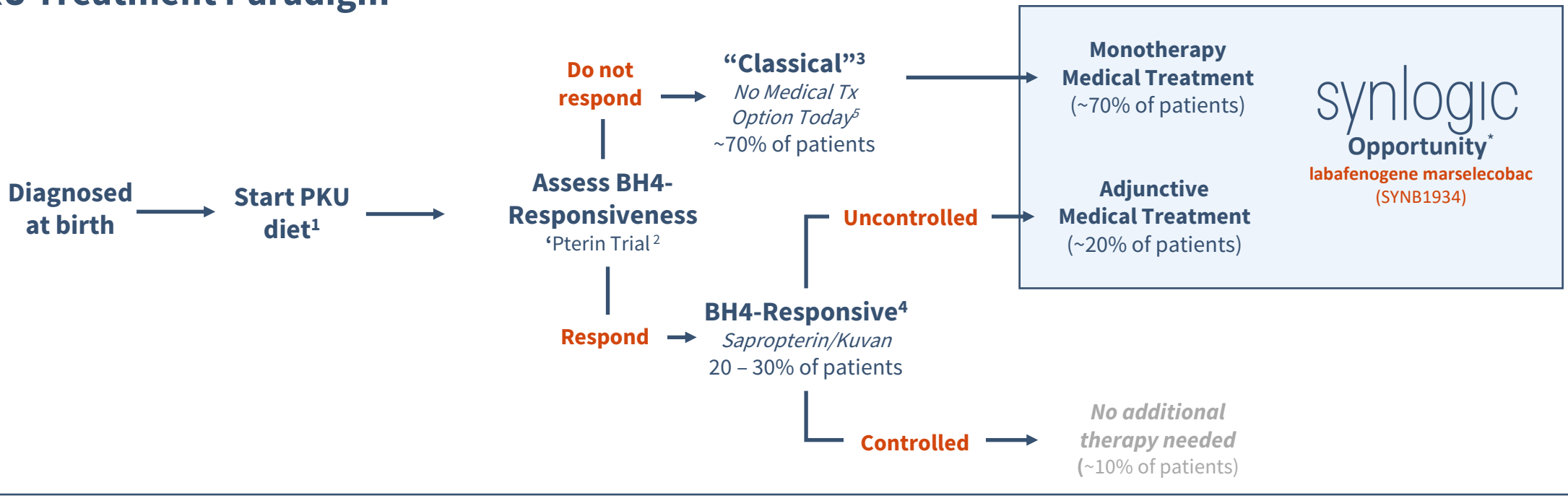
- 10% rate of anaphylaxis, requires injectable epinephrine, 24/7, for life[4]
- Due to allergic reaction risk, can require titration of 1-2 years[5]
- **~$250mm/year revenue** with <10% share in US[2]

1. National PKU Alliance (NPKUA) "About PKU" 2. Patient numbers, revenue for sapropterin, pegvaliase derived from BioMarin financials and disclosures; 3. Hillert et al. *American Journal of Human Genetics* (2020).
4. Synpheny-1 Phase 2 Study Results, Society for Inherited Metabolic Diseases 2023, Slide 10 & pivotal Synpheny-3 design, per clinicaltrials.gov 5. USPIs for Kuvan, Palynziq

labafenogene marselecobac (SYNB1934) Positioning

Unique, differentiated opportunity for ~90% of patient population

PKU Treatment Paradigm



* Per KOL input, PKU HCP market research and EU payer landscape analysis, expectation for Palynziq is that it would remain last line, given length of time to assess response (e.g. 12-24 months titration per labeling) due to allergic reactions, vs. ~4 for SYNB1934)

Notes:

1. PKU Diet: Low Phe foods :(i.e. low natural protein) to prevent neurotoxicity. Supplemental formula (amino acid-based, Phe-free) to ensure normal neurocognitive development & reduce symptoms
2. Pterin Trial: Today with sapropterin (Kuvan); if/when available, may include sepiapterin (PTC923). BH4-responsiveness can also be assessed via genetic testing in lieu of pterin trial
3. "Classical" (BH4-nonresponsive, more severe, ~70% of patients) without medical treatment (Hillert et al. *AJMG* (2020). Biomarin financial reports and SEC filings)
4. BH4-Responsive (more mild; 20-30% of pts) Initiate sapropterin

labafenogene marselecobac (SYNB1934): Potential to Differentiate & Fits PKU Patients' Pent-Up Demand

Comparison of Approved & Late-Stage Development Candidates for PKU

	Kuvan	PTC923	Palynziq	SYNB1934
Status	Genericized. Loss of exclusivity 2020	'Pterin (~ class as Kuvan); pending BLA submission	2022 revenue: ~$250mm (~10% share)	Pivotal study, Synpheny-3, ongoing
Oral administration	✓	✓		✓
MOA not limited to BH4 responsive segment			✓	✓
Non-systemic absorption				✓
Potential for adjunctive medical treatment	✓	✓		✓

SYNB1934 Expected Product Profile

- **Product Presentation:** powder for mixing with food, taken up to 3x/day
- **Dosing & Administration:** mix with ~3.4 oz liquid (water or juice), taken by oral-administration
- **Efficacy:** Significant Phe reduction with potential for increasing daily Phe/protein tolerance
- **Safety:** no systemic or serious adverse events
- **Tolerability:** transient, reversible, GI-related side effects, typically during dose-ramp

Initial Patient Segments for Accelerated Adoption at Launch

- **Adjunctive to sapropterin (Kuvan):** for patients still above target of >360 mmol/L
- **Palynziq-averse or discontinued:** patients who could not tolerate, did not respond to, or did not wish to try Palynziq due to injections, AE profile (e.g. 10% anaphylaxis[1])

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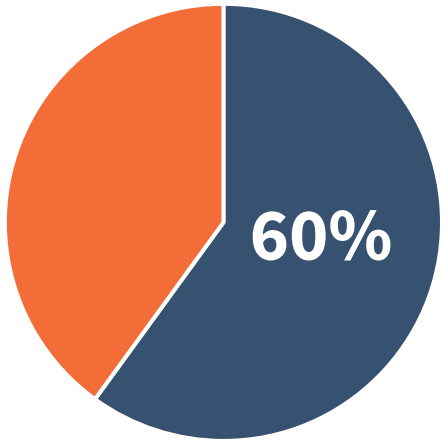
1. USPI for Palynziq

Phase 2 Results Confirmed Proof of Concept: Phe reduction with labafenogene marselecobac (SYNB1934)

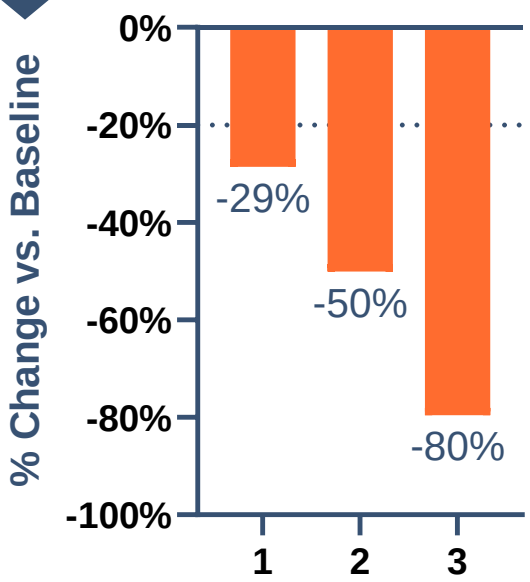
Response Rate



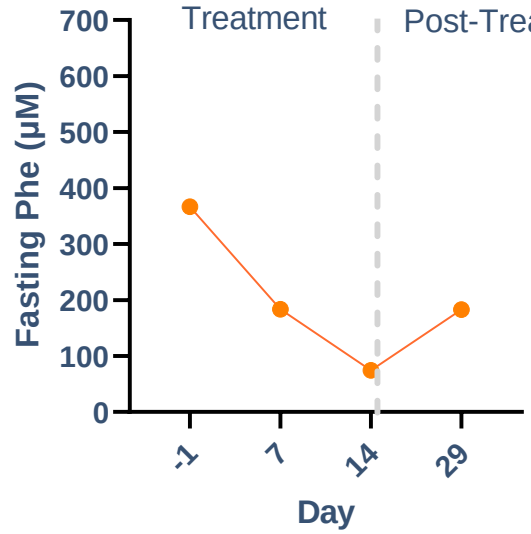
60% (3/5) achieved at least 20% Phe lowering*

Phe Reduction*

-53% Mean



Combination with Kuvan® (sapropterin)



-80%

*In responders based on pre-determined responder definition of -20% change in Phe vs. baseline

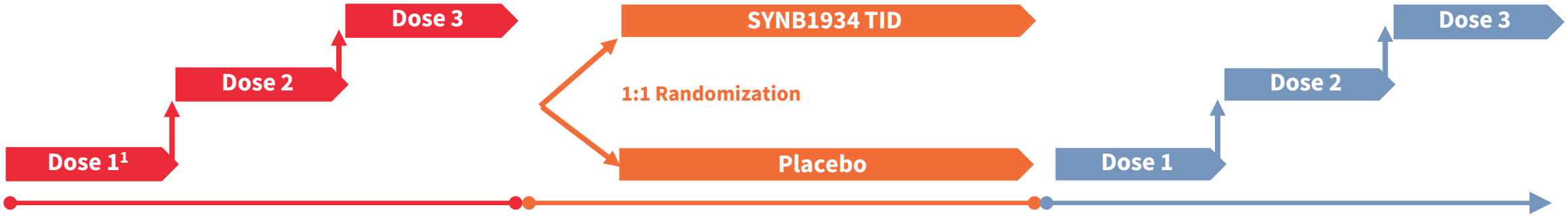
Source: Vockley, et al *Nature Metabolism.* 2023

Consistent, Favorable Safety & Tolerability Profile

- ✓ **No serious adverse events** (SAEs) across the PKU program to date (n=240)[1]
- ✓ All adverse events have been **mild to moderate**, **transient, reversible**, predominantly GI in nature, and consistent with those described in the dosing of probiotics
  - In the Phase 2 study arm with SYNB1934 (n=9), 2 patients discontinued treatment due to GI-related AEs[2, 3]
- ✓ Synpheny-3, the **pivotal study for SYNB1934 is designed to optimize patient experience** via:
  1. Optimized palatability
  2. A low starting dose
  3. An extended dose escalation period, of 9-15 weeks for each patient

1. 240 = Phase 1 with SYNB1618 (liquid formulation): 56 HVs and 14 PKU pts + Phase 1 with SYNB1618 (solid form): 88 HVs; + Phase 1 with SYNB1934: 62 HVs + Synpheny-2 Phase 2: 20 PKU patients
2. Study data was presented at Society for Inherited Metabolic Diseases, 2023
3. Vockley, et al *Nature Metabolism.* 2023

Synpheny-3: Global, Pivotal, Phase 3 Study of labafenogene marselecobac (SYNB1934)



- Open-label, extended titration period
- Participants follow their usual diet, can be on sapropterin or diet alone[1, 2]

Primary **efficacy endpoint is change in plasma Phe** vs. placebo

Pivotal analysis based on responder subset[3] (from open-label Part 1)

- All patients eligible for participation
- Collecting data re: increased Phe tolerance (i.e. dietary liberalization)

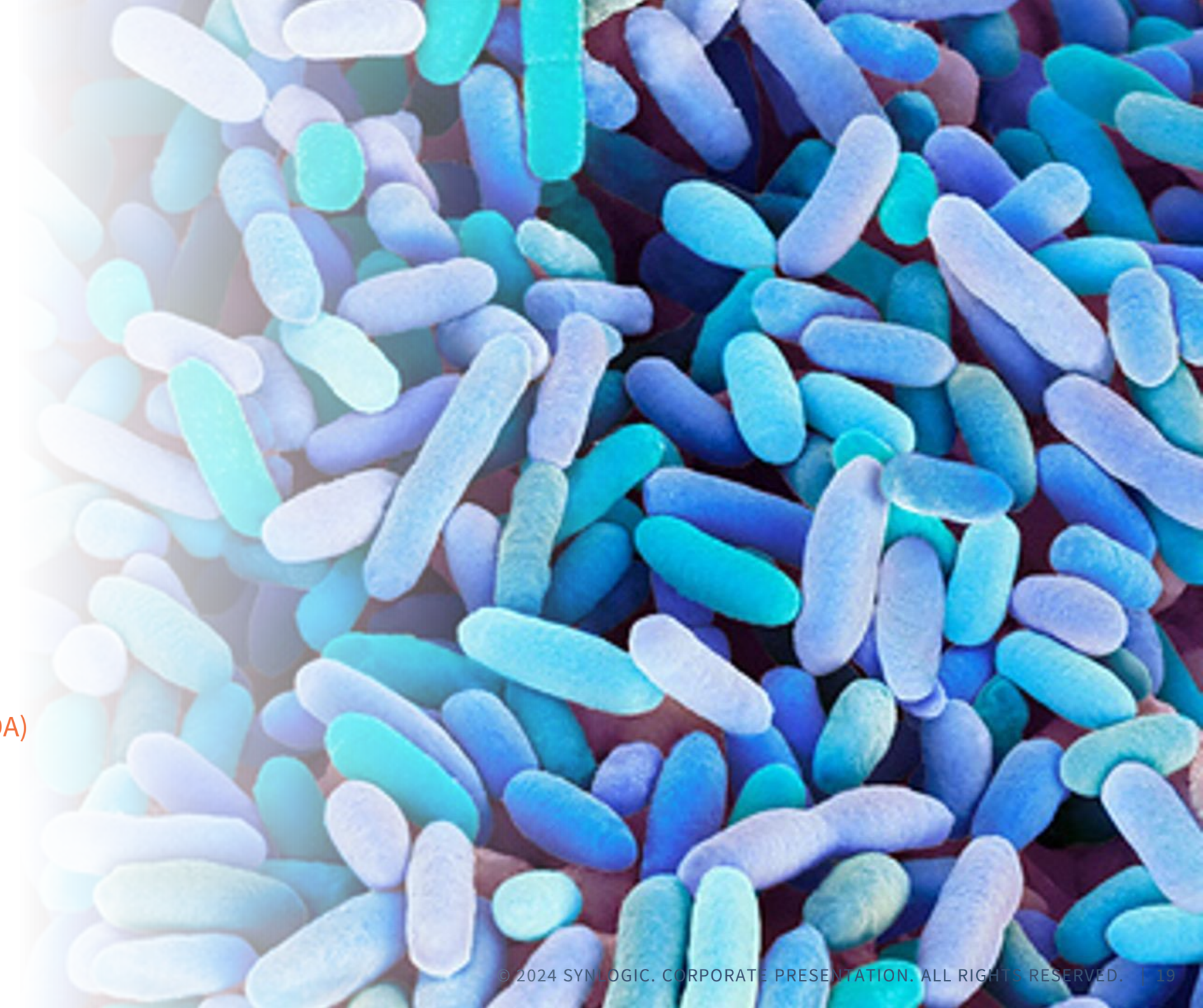
Expected Milestones

- **H1 2024:** DMC review of initial data for potential expansion to 12-17 year olds
- **H2 2024:** Full enrollment completed
- **H1 2025:** Top-line data

1. For ~150 patients ages 18 years and older with Phe >360 µM; an initial subset of data from patients in Part 1 will be used to assess the opportunity to lower the age of enrollment to 12
2. Dose levels for ramp are: $3x10^{11}$, $6x10^{11}$ and $1x10^{12}$; each begins with once/daily and increases frequency to 3x/day, with meals
3. 20% reduction vs. baseline in plasma Phe during Part 1 is responder definition

SYNB1353 for Homocystinuria (HCU)

- Rare Pediatric Disease Designation (FDA)
- Orphan Drug Designation (FDA)
- Fast Track Designation (FDA)



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SYNB1353 for HCU: Potential for Differentiated Convenience & Safety Across the Full Age Spectrum

- HCU: rare metabolic disease, with **life-threatening risks** from acute thrombosis, **chronic complications**
  - Multi-system disease burden associated with severely elevated total homocysteine (tHcy) levels
  - Despite current options, most patients remain with uncontrolled tHcy levels, in need of new medical treatments

- Established clinical, regulatory and commercial paths with **clinical biomarker as basis for approval**
  - Like PKU, clinical biomarker endpoint (total homocysteine or tHcy) has precedent as a basis for full approval[1]
  - Synergies with PKU program include clinical experts, sites of care facilitating development and commercialization

- **SYNB1353: differentiated product profile**, with potential for **efficacy, safety, convenience for all ages**
  - Designed to consume methionine (Met), a precursor of homocysteine
  - Expected presentation: Orally-administered, non-systemically absorbed powder for mixing with water or juice

- Achieved **positive proof of mechanism**, will advance to Phase 2 proof of concept study in HCU patients
  - Demonstrated that by targeting Met in the GI track, SYNB1353 lowered Met levels in the plasma
  - Produced strain-specific biomarker (3MTP-glycine), confirming activity as intended in HV subjects
  - Next Step: Phase 2 proof of concept study to assess effect on SYNB1353 on tHcy levels in patients with HCU

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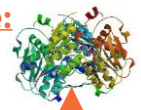
1. U.S. Prescribing Information for Cystadane® (betaine) & Travere Theraepeutics December 14 press release

HCU: Multi-System Burden, Acute Risks due to Uncontrolled Homocysteine

HCU: An Inherited Enzyme Deficiency[1]

CBS Enzyme:



Homocysteine (Hcy)

Methionine (Met)

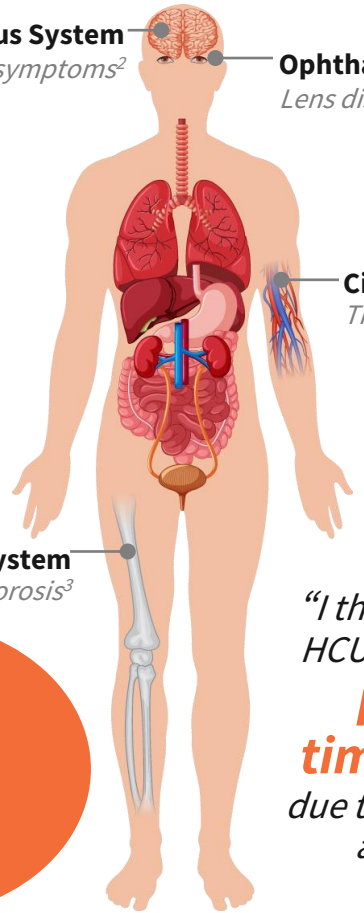
Diet

1. Impaired cystathionine beta-synthase **(CBS)** enzyme leads to build-up of homocysteine (Hcy)
2. The goal in HCU is to lower levels of total homocysteine **(tHcy),** an accepted clinical, regulatory biomarker[1, 2]
3. Methionine (**Met**), an essential amino acid in dietary protein, is a required precursor to homocysteine
4. Standard treatment for HCU includes a restrictive, low-Met diet

Life-Threatening Risks, Multi-System Complications[1]

Central Nervous System
Neurocognitive symptoms[2]

Ophthalmlc
Lens dislocation[2]



Circulatory
Thromboembolism[2,]

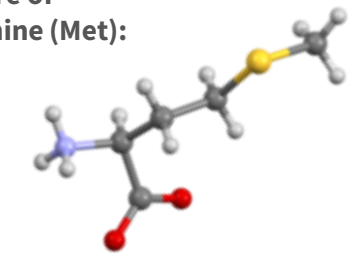
Skeletal System
Scoliosis, osteoporosis[3]

~5,000
Estimated prevalence for HCU, for US & Europe[2]:

"I think about my HCU patients like ***potential time bombs*** *due to their risk of acute events"*
- HCU KOL

Methionine (Met): A Target to Lower tHcy

Structure of Methionine (Met):



Majority of HCU patients remain above tHcy goals, given limitations of current options[3,4]

1. Low-Met diet (low in natural protein)
2. Supplemental amino acid formula
3. Betaine (Cystadane®)

The low-Met diet provides a validating model for GI-based Met as a target for lowering tHcy

1. Bittmann, et al. *J Clin Med Res.* (2023) 2. Weber Hoss GR, *Mol Genet Genomic Med.* (2020) 3. Synlogic Data on File: Key Opinion Leader Conversations (2021-2022). 4. Morris et al. *Inherit Metab Dis* (2017)

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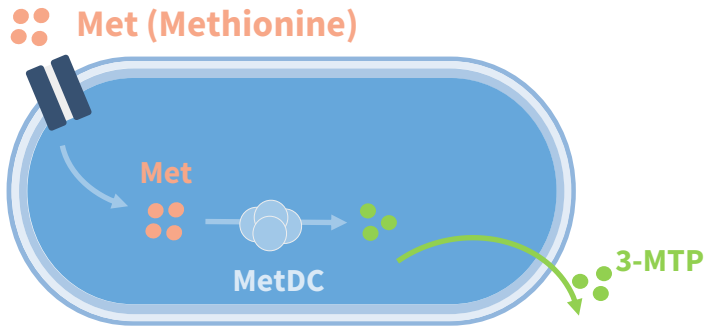
SYNB1353: New Approach to Lowering tHcy through Methionine

SYNB1353: Consumes Met to Lower Plasma tHcy



- Designed to **prevent Met conversion to Hcy**
- Engineered to produce the methionine decarboxylase (MetDC) pathway, which converts Met to 3-methylthiopropylamine (**3-MTP**), instead of Hcy

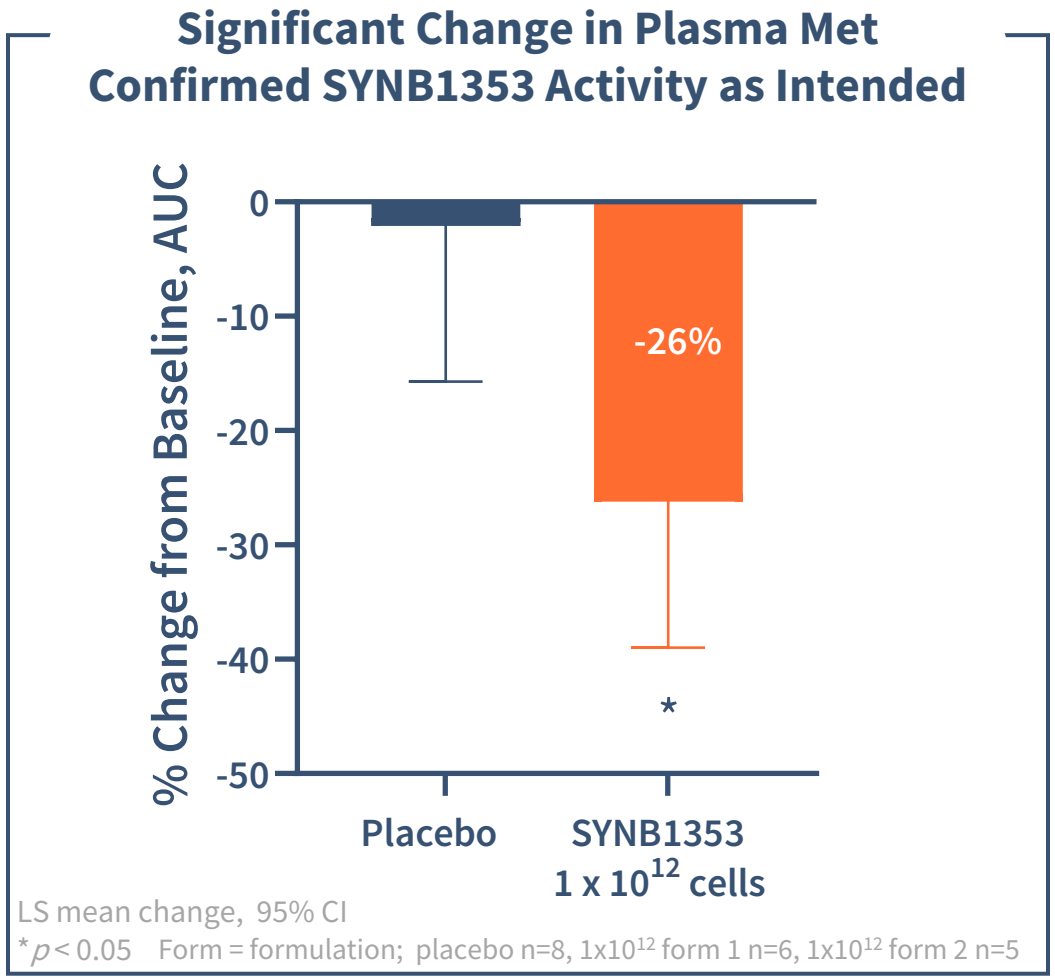
Target Profile Reflects Synergies with PKU Program

Expected Product Profile

- Significantly ↓ tHcy
- Convenient powder for mixing with ~3 oz liquid, familiar format for HCU patients
- Favorable safety, tolerability with no systemic absorption and associated risks

1. Morris AAM, et al. Guidelines for the diagnosis and management of cystathionine beta-synthase deficiency
2. Walter 1998 3.. U.S. Prescribing Information for Cystadane® (betaine) 4. De Biase et al. 2020 & Synlogic patient & KOL Insights

SYNB1353 Phase 1 Study Demonstrated Proof of Mechanism in Healthy Volunteers



- **Proof of mechanism achieved** in HVs using a meal challenge. SYNB1353:
  - Lowered plasma methionine and
  - Produced strain-specific biomarker (3MTP-glycine)
- Previously presented mechanistic modeling data suggests **SYNB1353 may lower plasma Hcy by up to 58%** & increase protein intake in HCU patients[1]
- Based on this proof of mechanism, **SYNB1353 will advance to a Phase 2 proof of concept** study in patients with HCU

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1. Sondheimer et al., Society for Inherited Metabolic Disorders 2023

SYNB1353 Phase 1 Safety & Tolerability Findings

- ✓ SYNB1353 was generally well-tolerated in healthy volunteers
- ✓ There were **no serious adverse events** (SAEs)
- ✓ Adverse events (AEs) were all **mild to moderate**, transient, and predominantly GI in nature
  - One subject discontinued dosing due to an adverse event
- ✓ Frequency and severity of **GI-related AEs were similar in the active and control group**
  - 7 of 22 SYNB1353 compared to 3 of 8 placebo subjects had at least 1 GI-related AE
- ✓ All subjects completing the 28-day analysis cleared SYNB1353

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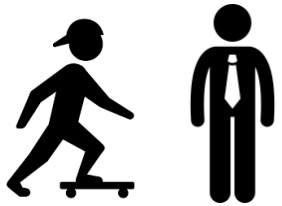
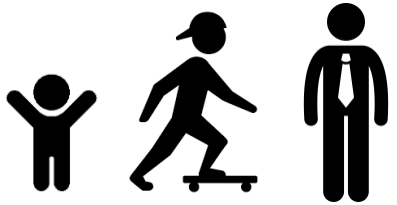
GI = gastrointestinal

1. Sondheimer et al., Society for Inherited Metabolic Disorders 2023

SYNB1353: Designed for Safety, Efficacy, and Convenience

Product Presentation and Expected Profile to Enable Use Across Age Spectrum in HCU

Therapeutic Class	Enzyme Replacement Therapy (ERT)	Synthetic Biotic
Manufacturer *Drug/Status*	TRAVERE THERAPEUTICS *Pegtibatinase (TVT-058)* ***Pivotal Phase 3 Initiated***	synlogic *SYNB1353* ***Phase 1, Proof of Mechanism Complete***
Dosing & Administration	 **lyophilized subcutaneous injection,** self-administered, twice-weekly[1]	 **Powder mixed with ~3 oz liquid** taken with meals
Safety Considerations	ERT mechanism associated with potential for allergic/immunological challenges	Non-systemic. Transient/reversible, mild GI-related side effect
Potentially Applicable Patient Population[2]		

1. Travere Therapeutics Announces Positive Topline Results (globenewswire.com). 2. https://clinicaltrials.gov/study/NCT03406611

Additional Pipeline & Research Programs

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Synthetic Biotic Platform Advantages

Multiple attributes provide synergies across drug candidates

Synergies across
Product Candidate Design & Clinical Development

- Established tools and models to discover, develop and produce engineered live biotherapeutics that can be leveraged across product candidates[1]
- All clinical-stage programs share the same safety, tolerability profile of shared *chassis* (*E. coli* Nissle), taken globally OTC for forms of inflammatory bowel disease[2]

Scalable
Manufacturing Process and Formulation

- Internally developed subject matter expertise in adapting manufacturing processes for cGMP-level production of live biotherapeutic products (LBPs)
- Scalable process conducive to global supply and parallel production of pipeline programs

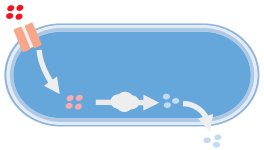
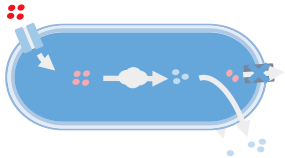
Favorable
Regulatory Frameworks

- Fit with existing FDA framework for LBPs,[3] and GMO profile has been well-received by regulatory authorities to date[4]
- Minimized regulatory requirements for preclinical tox/safety studies given profile as a locally-acting, GI-restricted, non-replicating/non-colonizing bacterial therapeutic, leveraging 100+ years of human dosing with *E. coli* Nissle

1. Brennan, A. *Synthetic Biology* (2022)
2. M. Schultz, J.P. Burton, in *The Microbiota in Gastrointestinal Pathophysiology*, 2017
3. FDA Framework for Live Biotherapeutic Products Early Clinical Development
4. Approved for use in clinical trials in multiple countries

Additional Clinical Candidates Target Validated Metabolites

All Programs Benefit from Cross-Platform Synergies in Discovery, Development, & CMC

Program	Enteric Hyperoxaluria	Gout	Cystinuria
Candidate	SYNB8802	SYNB2081	Undisclosed
Target Metabolite	Dietary oxalate	Uric acid	Methionine
Clinical Biomarker	Urinary oxalate	Plasma uric acid	Urinary cystine concentration
Status	Clinical proof of concept established	IND enabling studies ongoing	Preclinical
Shared *chassis* of Synthetic Biotic			

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Corporate

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Leadership Strength Brings Depth Across Biopharma

Aoife Brennan, MB, ChB
President & CEO

Biogen
TOLERX Immune resolve.
Beth Israel Lahey Health Beth Israel Deaconess Medical Center

Antoine Awad
Chief Operating Office

L.E.A.F. Pharmaceuticals™ Lifting and Empowering All Families
MERRIMACK
abpro

Mary Beth Dooley
VP, Head of Finance

pwc
idera
BOSTON PRIVATE WEALTH ▫ TRUST PRIVATE BANKING

Molly Harper
Chief Business Officer

AKCEA THERAPEUTICS
genzyme
MERCK

Caroline Kurtz, PhD
Chief Development Officer

Ironwood PHARMACEUTICALS
genzyme
GeoTex PHARMACEUTICALS, INC.

Mylene Perreault
VP, Head of Research

MILLENNIUM PHARMACEUTICALS, INC
Wyeth
Pfizer

Neal Sondheimer
VP, Head of Clinical

SickKids THE HOSPITAL FOR SICK CHILDREN
UNIVERSITY OF PENNSYLVANIA HEALTH SYSTEM

Brendan St. Amant
General Counsel & Corporate Secretary

DCG DONNELLY, CONROY & GELHAAR, LLP
VERTEX
ohana BIOSCIENCES

Adam Thomas
Chief People Officer

Pfizer
scjohnson
Shire

Summary Financial Results for Third Quarter 2023

Balance Sheet (unaudited)	30 September 2023	31 December 2022
Cash, Cash Equivalents, and Marketable Securities	$33.4M	$77.6M

(in thousands, except share and per share data)

Financial Performance (unaudited)	Three Months Ended September 30		Nine Months Ended September 30	
	2023	2022	2023	2022
Revenue	$ 393	$ 678	$ 602	$ 1,074
R&D Expenses	$ 9,616	$ 14,610	$ 33,831	$ 38,405
G&A Expenses	$ 3,400	$ 4,402	$ 11,291	$ 12,785
Net loss	$ (12,078)	$ (17,912)	$ (42,748)	$ (49,451)
Net loss per share - basic and diluted*	$ (2.57)	$ (3.73)	$ (9.17)	$ (10.29)
*Weighted Average Shares Outstanding**	4.7M	4.8M	4.7M	4.8M

$21.0 million financing in October and $2.5 million earned from Roche collaboration in November add to September 30, 2023 cash balance, extending cash runway into H1 2025

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*Weighted average shares used in computing net loss per shares – basic and diluted

SYBX Investment Summary

Milestone-rich outlook with lead program in Phase 3, followed by deep pipeline of rare disease assets

>$1B revenue opportunity in clinically validated, Phase 3 lead candidate

- PKU: large, widely diagnosed rare disease population, and majority remain without medical treatment
- Prior approvals validate commercial opportunity, provide precedent and de-risk clinical, regulatory path
- Favorable, differentiated SYNB1934 (labafenogene marselecobac): oral, non-systemic, reversible
- Phase 2 data provide clear clinical proof of concept, and demonstrated a favorable safety profile
- Currently being evaluated in pivotal Synpheny-3 study

Pipeline of novel, oral, non-systemic drug candidates focused on rare diseases

- Pipeline of orally-administered, non-systemic biotherapeutics targeting validated targets in rare diseases
- Phase 2-ready SYNB1353 for HCU builds on PKU program with synergies in clinical, commercial synergies
- Earlier stage assets include programs in enteric hyperoxaluria, gout, and cystinuria

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Multiple anticipated milestones in 12-18 months

Expected milestones for Synpheny-3 pivotal study of labafenogene marselecobac for PKU include:

- **H1 2024:** DMC review of initial data for potential study expansion to include 12 to 17 year olds
- **H2 2024:** Full study enrollment
- **H1 2025:** Top-line data announced

Cash runway extended into H1 2025

- Gross proceeds from $21mm underwritten offering and $2.5mm milestone payment from Roche collaboration add to September 30, 2023 cash balance of $33.4mm
- Cash runway extended into the first half of 2025

Thank You

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