

The background of the slide is a composite image. The lower half shows a dark, multi-lane highway at night, viewed from a perspective looking down the road. The road is flanked by concrete barriers. In the distance, a city skyline is visible, with numerous skyscrapers illuminated by lights. The upper half of the image is a dark sky filled with many small, bright white stars, suggesting a night sky or a microscopic view.

exoZymes

# The Next Generation of Biomufacturing

Michael Heltzen, CEO

# eXoZymes' Safe Harbor

*This presentation includes forward-looking statements within the meaning of the Private Securities Litigation Reform Act of 1995. Forward-looking statements, which are based on certain assumptions and describe the company's future plans, strategies and expectations, can generally be identified by the use of forward-looking terms such as "believe," "expect," "may," "will," "should," "would," "could," "seek," "intend," "plan," "goal," "project," "estimate," "anticipate," "strategy," "future," "likely" or other comparable terms, although not all forward-looking statements contain these identifying words. All statements other than statements of historical facts included in this presentation regarding the company's strategies, prospects, financial condition, operations, costs, plans and objectives are forward-looking statements. Actual results could differ materially for a variety of reasons. You should carefully consider the risks and uncertainties described in the "Risk Factors" section of eXoZymes' quarterly reports on Form 10-Q, annual reports on Form 10-K, and other documents filed by eXoZymes from time to time by the company with the Securities and Exchange Commission. These filings identify and address important risks and uncertainties that could cause actual events and results to differ materially from those contained in the forward-looking statements. Forward-looking statements speak only as of the date they are made. Readers are cautioned not to put undue reliance on forward-looking statements, and eXoZymes assumes no obligation and does not intend to update or revise these forward-looking statements, whether as a result of new information, future events, or otherwise. eXoZymes does not give any assurance that it will achieve its expectations.*

# exoZymes' vision

## Solving a generational problem

A lack of **sustainable access to chemicals**, which form the basis of modern life



enzymes × AI = exozymes



# Resources via conventional methods



Plant-derived  
chemicals



Petroleum-based  
chemicals



Cell-based  
synthetic biology



# Problems with conventional methods



Plant-derived  
chemicals

**Depleting natural  
resources**



Petroleum-based  
chemicals

**Polluting  
and toxic**



Cell-based  
synthetic biology

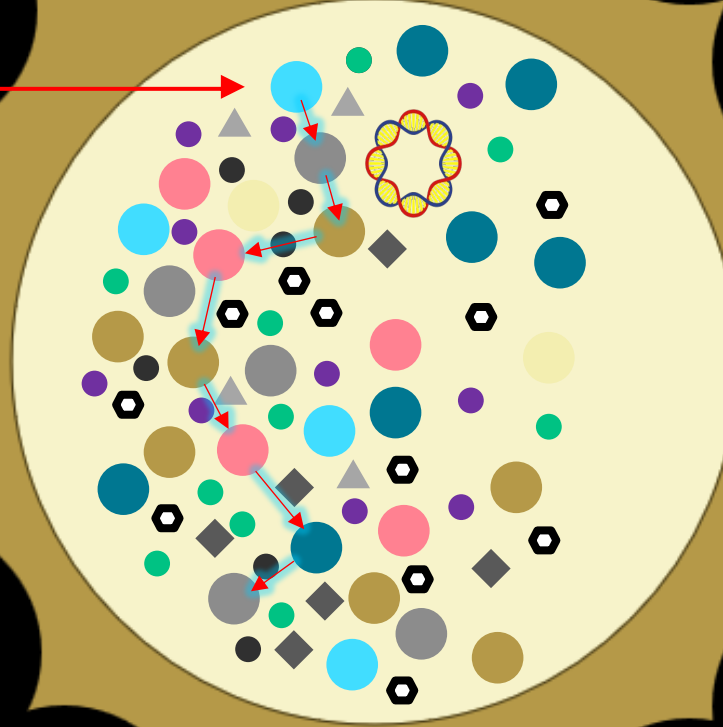
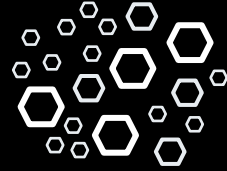
**Rarely makes it to  
commercial scale**



# Old SynBio paradigm: How cells makes chemicals

Sugar/Feedstock

Cell



# Top reasons why SynBio/cells/fermentation is not ideal

1

Cells are, by evolution, designed to only do things that help the cell survive, grow, and replicate. They do not want to **produce chemicals** they do not need.

2

The cells often get sick or die from the **toxic** chemicals or the intermediates. Resulting in scaling problems and low titer results.

3

Most SynBio projects commercially die as the **isolation cost** to get the pure chemical, out of the cell slurry, is higher than the value of the chemical itself.

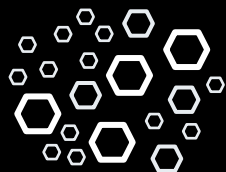




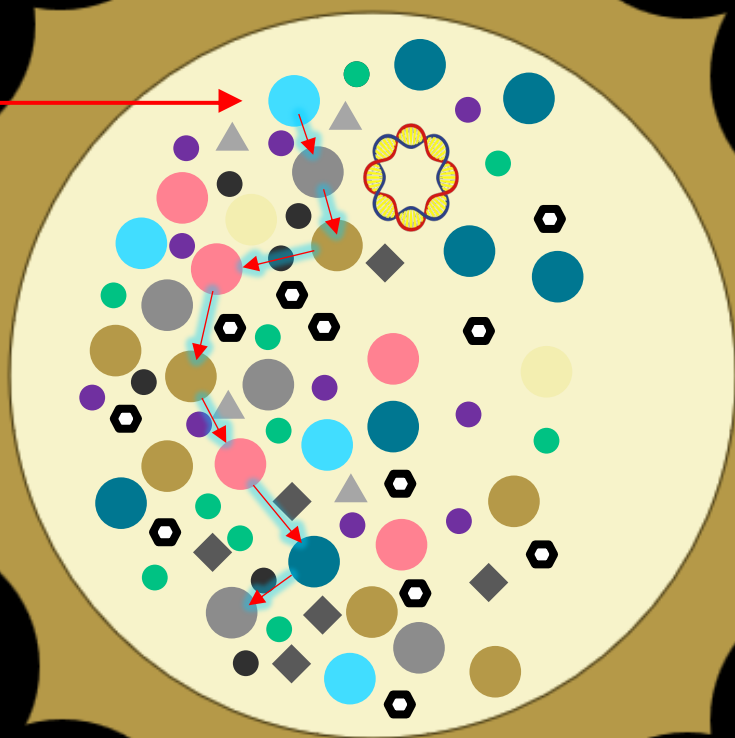
How are **exozymes** different to **synthetic biology**?

# Old SynBio paradigm: How cells makes chemicals

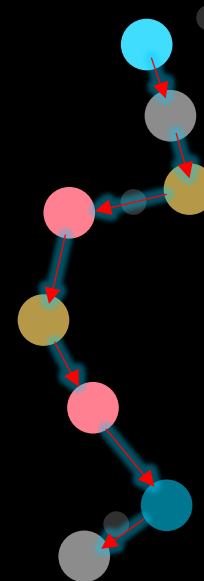
Sugar/Feedstock



Cell



Why not just liberate the  
Enzymatic Pathway from the cell?

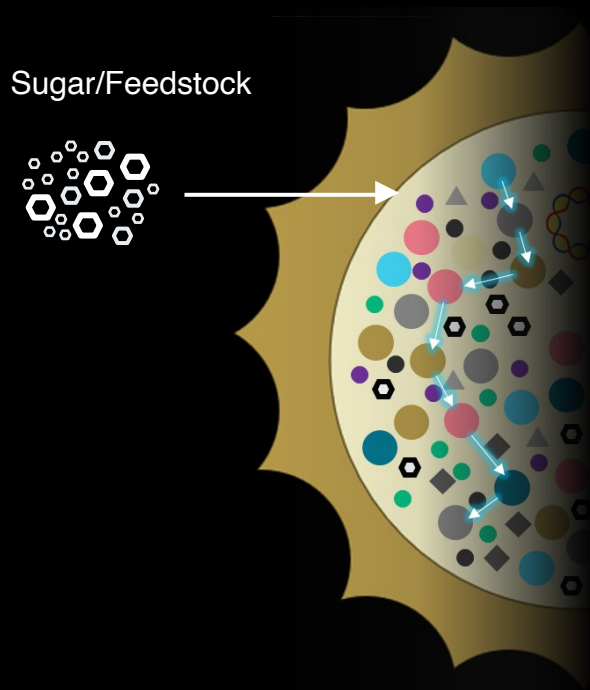


**Former belief system:**  
Enzyme Pathways does not  
function outside of cells...



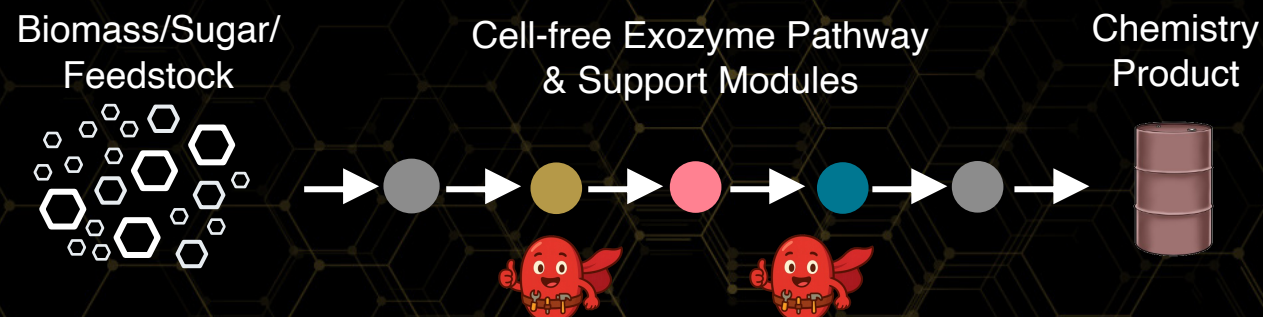
# Cell-based enzymes vs **exozyme** biosolutions

## cell-based synbio



## exozyme biosolutions

= exozymes (AI-optimized enzymes)  
+ production pathways helper modules



- Engineering-level control
- Efficient use of feedstock
- High titer/yield
- Works and Scales like Chemistry

Enabling chemical and drug companies to turn natural resources into valuable chemicals **sustainably and affordably, including new kinds of chemistry**

**enzymes × AI = exozymes**



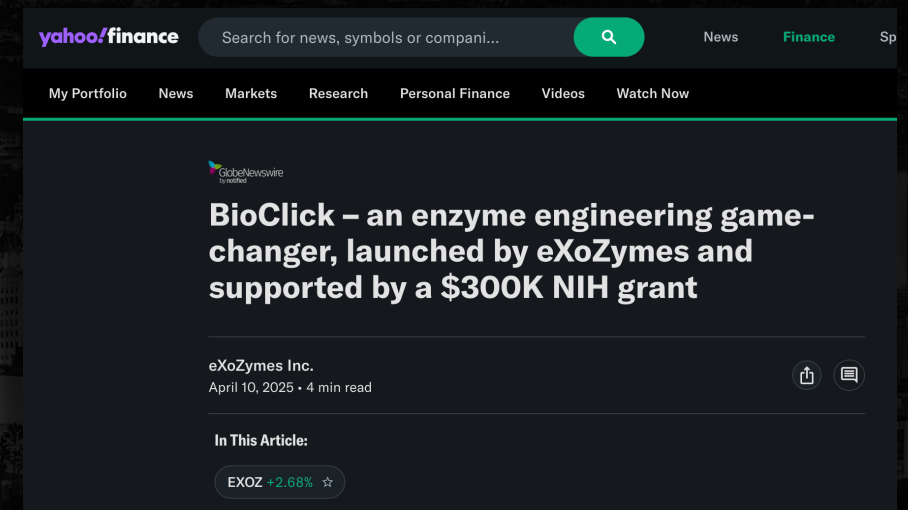
The background of the slide is a dark, high-contrast aerial photograph of a city skyline at night. The city lights are visible, creating a bokeh effect against the dark sky. The foreground shows a winding road or highway with some light trails.

**enzymes × AI\* = exozymes**

- \* Proprietary enzyme knowledge and technology – both wet-lab and dry-lab.
  - e.g. one of our secret sauces is how we generate enzyme training data.



# The market leader of cell-free exozymes biomanufacturing





An aerial night photograph of a city, likely Los Angeles, showing a dense urban landscape with numerous skyscrapers and residential areas. Light trails from traffic on a major highway in the foreground create a sense of movement. The overall tone is dark and futuristic.

**cell-based SynBio was the last generation**

**exozymes is the next gen of biomanufacturing.**





exoZymes

[exozymes.com/exoz](https://exozymes.com/exoz)

# Nutraceuticals with a pharmaceutical potential





An **exoZymes** biosolution for **NCT**

[www.NCTx.one](http://www.NCTx.one)





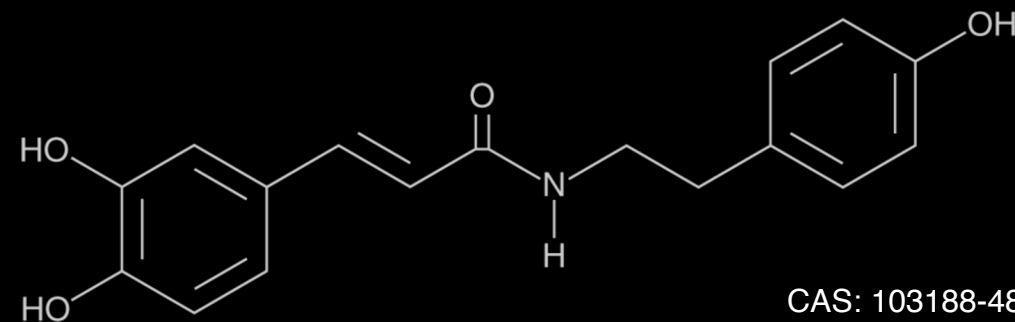
An exozyme biosolution for  
N-trans-Caffeoyltyramine – aka **NCT**



## A Nutraceutical with Pharmaceutical Potential

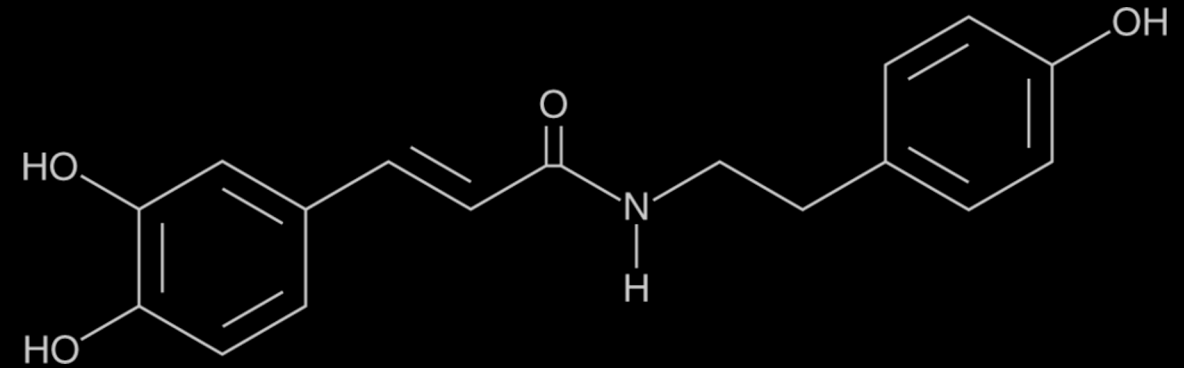
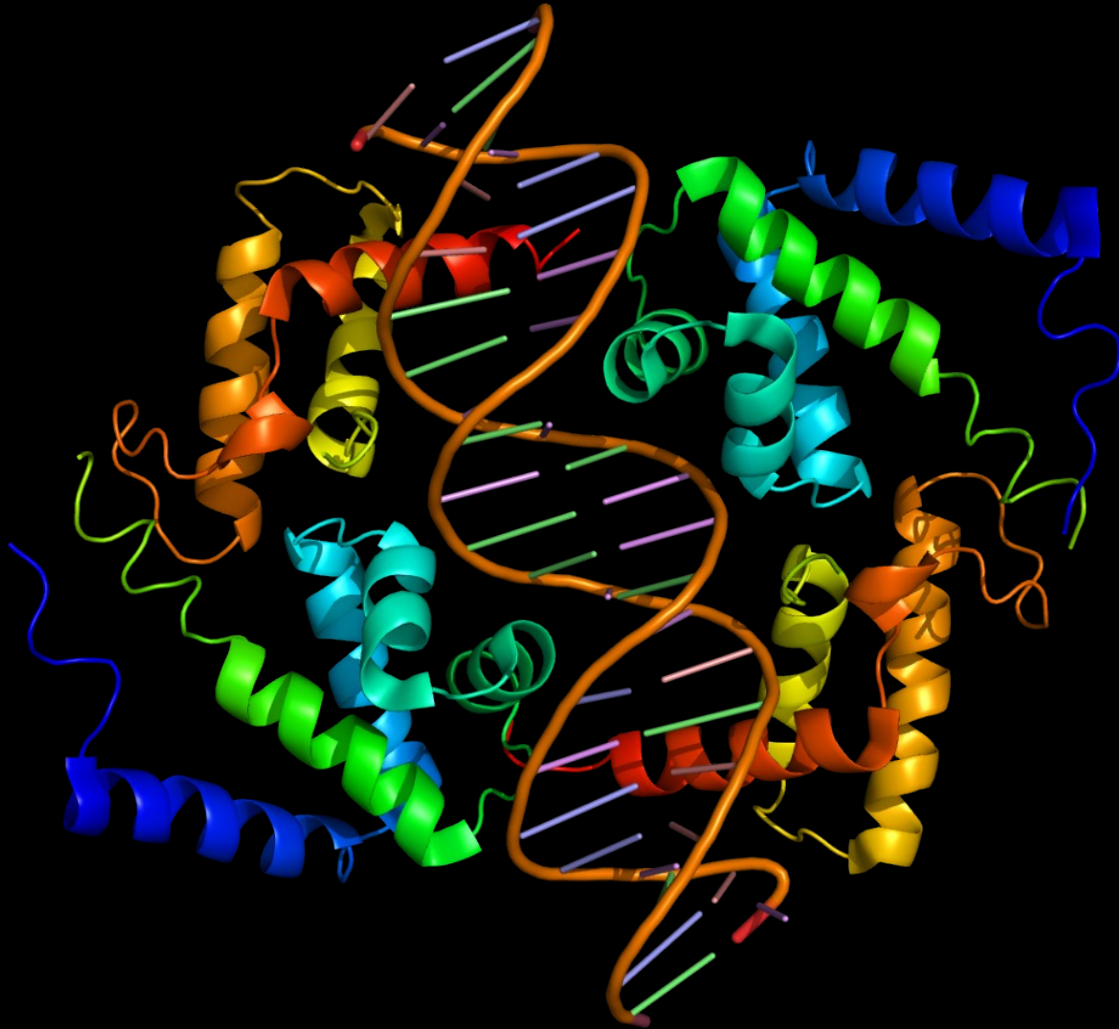
A potent HNF4 $\alpha$  agonist, and candidate for fatty liver disease and gut health

[www.NCTx.one](http://www.NCTx.one)



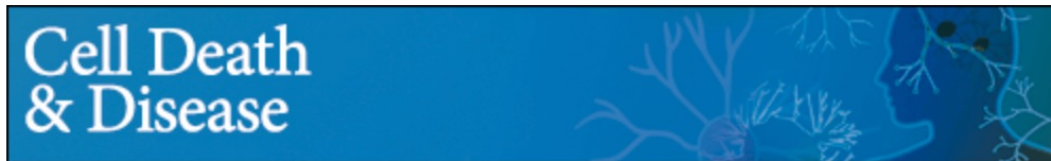
CAS: 103188-48-3  
Purity: >98%

When **NCT** meets the HNF4a drug receptor it becomes a **potent agonist**



**Agonist:** A small molecule that, upon binding to a receptor, activates it and produces a biological response.

The **leading** pre-clinical model **experts** in the world, **say**...



► Cell Death Dis. 2021 Jun 11;12(6):603. doi: [10.1038/s41419-021-03862-x](https://doi.org/10.1038/s41419-021-03862-x)

**Liver fat storage is controlled by HNF4α through induction of lipophagy and is reversed by a potent HNF4α agonist**



► PLoS One. 2022 Apr 6;17(4):e0266066. doi: [10.1371/journal.pone.0266066](https://doi.org/10.1371/journal.pone.0266066)

**A potent HNF4α agonist reveals that HNF4α controls genes important in inflammatory bowel disease and Paneth cells**

*“NCT was completely nontoxic at the highest dose administered and so is a strong candidate for an NAFLD (fatty liver disease) therapeutic.”*

*“These (studies and) data suggest that HNF4a could be a therapeutic target for Inflammatory bowel disease and that the (NCT) agonists that we have identified could be candidate therapeutics.”*



# What is Non-Alcoholic Fatty Liver Disease (NAFLD)?

## Size of problem

- Globally impacts over 30% of adults and growing fast
- Closely linked to obesity, gut health, maybe diabetes
- Very few good medical options
- A huge problem for the individual and society



# exoZymes

NCT - The first of many natural products and new-to-nature  
analogs that can **now** be **biomanufactured**





As well as **extraordinary** business opportunities

# As well as extraordinary business opportunities



Customer(s) via grants:

DoD & DoE

## Isobutanol used as Sustainable Aviation Fuel (SAF)

- A liquid fuel already used in commercial aviation, which reduces CO2 emissions by up to 80%
- A politically mandated hyper-growth market in both US and EU

Aviation Fuel Market: **\$793B**

**\$220B**

2022

2030

Source: The International Air Transport Association (IATA.org) and Acumen Research and Consulting



# Approx **\$14MM** in **US Gov grants** enabling the development of our cell free platform technology



**Cannabinoids**  
Phase I SBIR \$150k

**Cannabinoids**  
Phase II SBIR \$2MM

**Methylation**  
Phase I SBIR \$245k

**Cell-Free Tools**  
BioClick Chemistry \$300k



**Cofactors**  
Phase II SBIR \$2.3MM

**Isobutanol**  
BETO \$2.1MM  
\$3.7MM

**Alcohols**  
ARPAe \$1.6MM

**Proteins**  
ARPAe SBIR \$500K



**Proteins**  
TCF \$150k

**Cell-Free**  
Subcontract \$50k



**Protein Scaleup**  
BioMade \$805k

# Background

**Location:** Pasadena, CA. 30 full-time, and a very large support system.

**2019:** UCLA spin-out, “Big Idea” status = MDB Capital backed.

**2020/22:** POC projects and technology platform development.

**2023:** AI/ML and state-of-the-art enzyme engineering capabilities.

**2024:** Commercial CEO, focus strategy, rebranding and Nasdaq IPO

**2025:** Applications and traction with “powered by exozymes” (NCT etc.)





**Damien**  
Perriman  
CCO

**Paul**  
Opgenorth, PhD  
VP of Development

**Tyler**  
Korman, PhD  
VP of Research

**Michael**  
Heltzen  
CEO

**Fouad**  
Nawaz  
VP of Finance

**Zachary**  
Karl, PhD  
VP of Business Development

**Lasse H.**  
Görlitz  
VP of Comms

eXoZymes Inc.

a platform-of-platforms company

short term: kick-starting tech use via spin-outs and JVs,

longer term: mostly sell and license exozymes technology





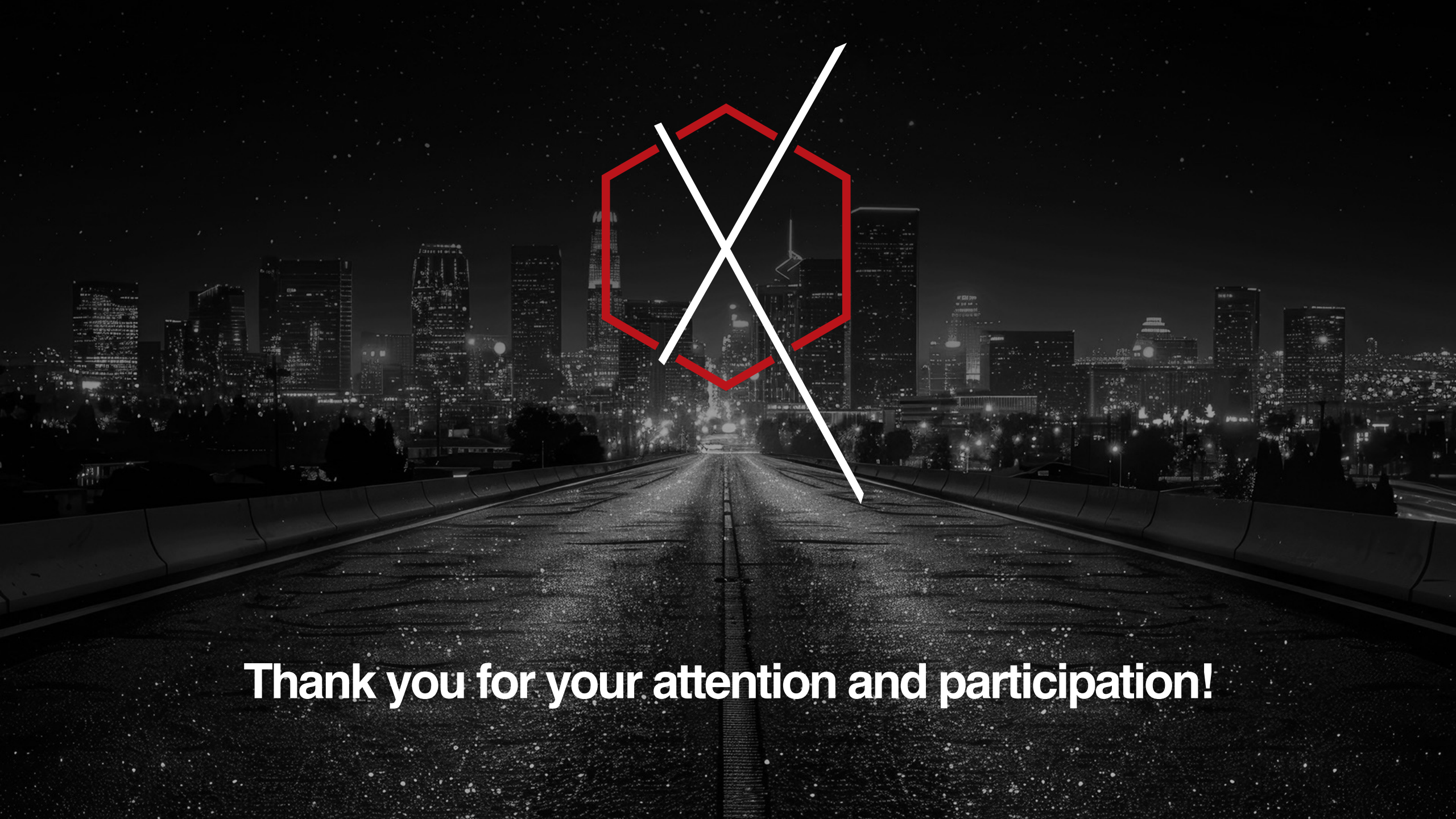
The future is **bright**



If you want to learn more as an investor

[www.exozymes.com/exoz](http://www.exozymes.com/exoz)





**Thank you for your attention and participation!**

# Questions



# Financials

Please see **[exozymes.com/sec-filings](https://www.exozymes.com/sec-filings)** for details

# Recognized leader of cell-free biomanufacturing in peer-reviewed scientific journals



3x published



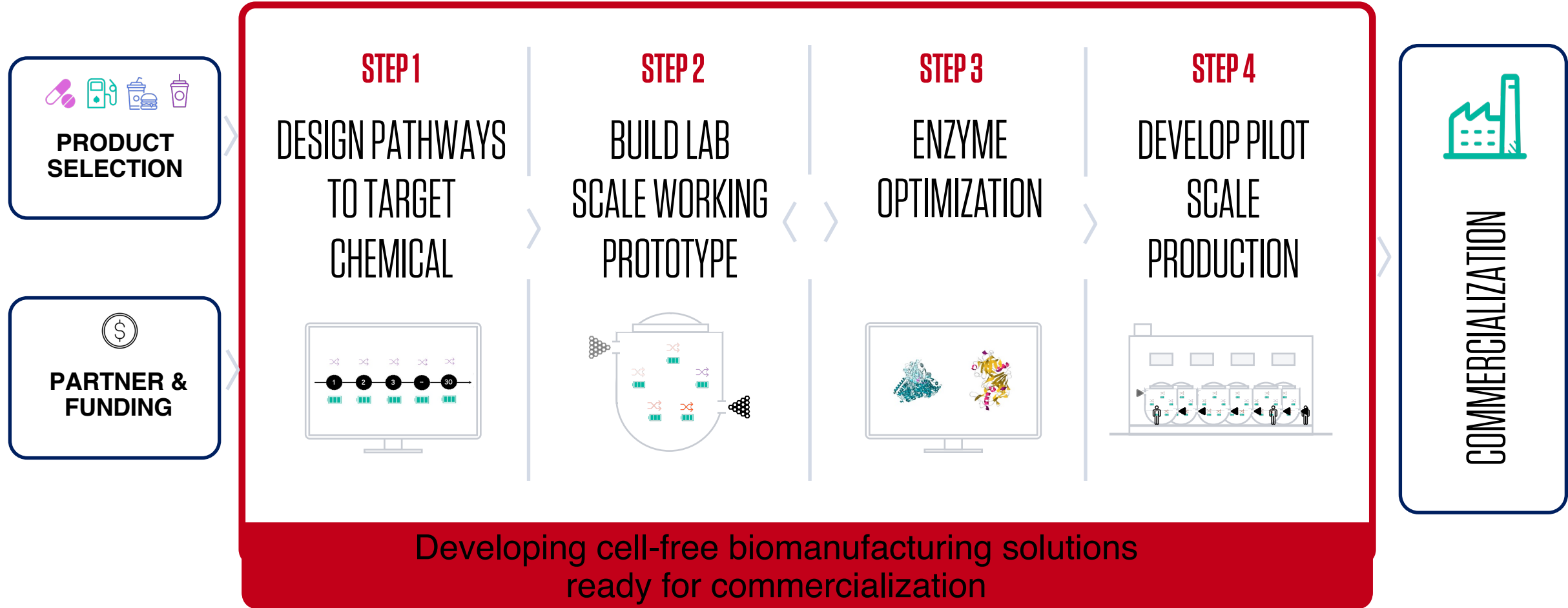
Cover story



4x published



# eXoZymes R&D de-risking and speed-up process





Business model leverages **IP** for proprietary processes,  
key enzymes, and novel chemicals

**10+ patents** and substantial **trade secrets** protecting

Patents &  
trade secrets

Novel cell-free  
biomanufacturing

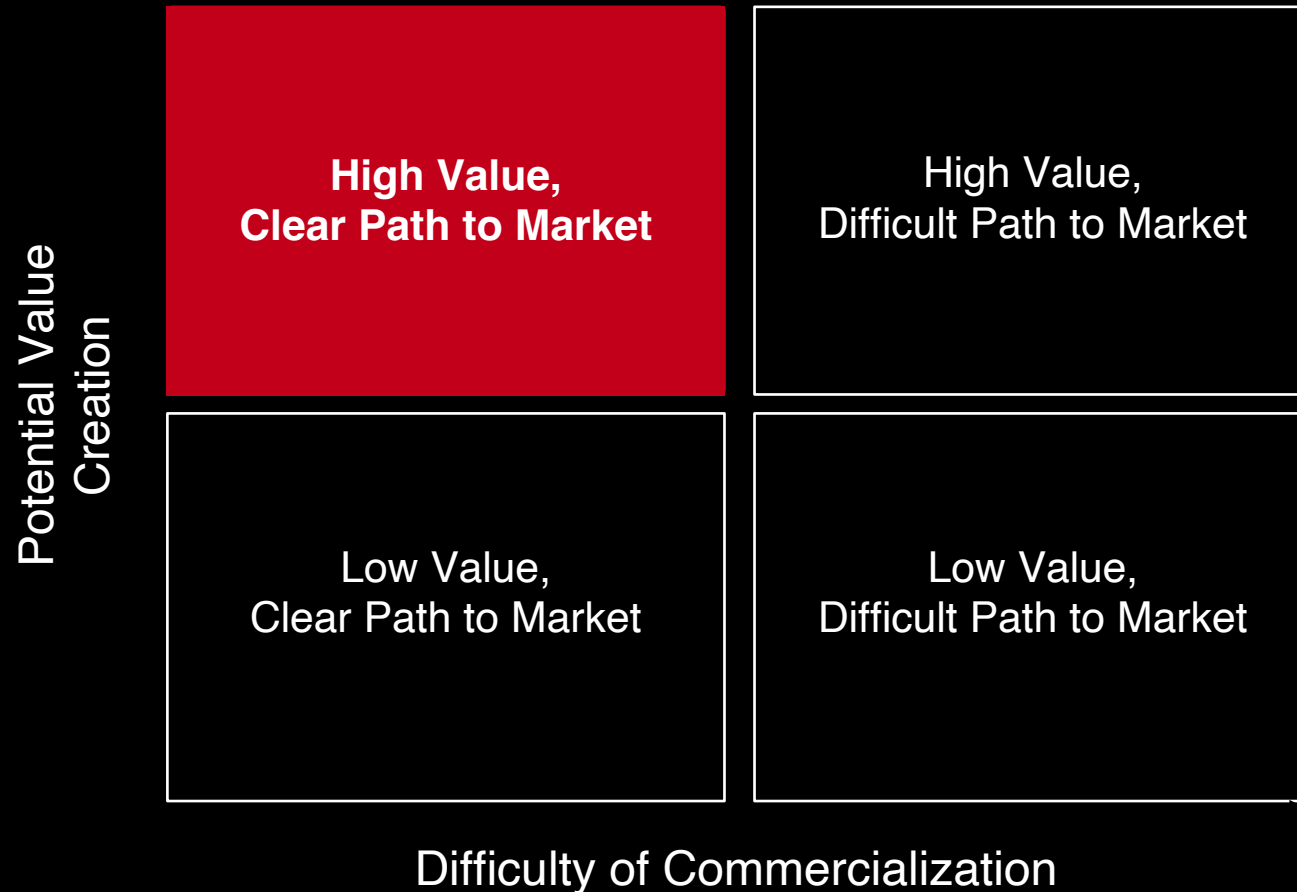
**Advanced AI &  
R&D platform**

Novel Enzymes  
& exozymes

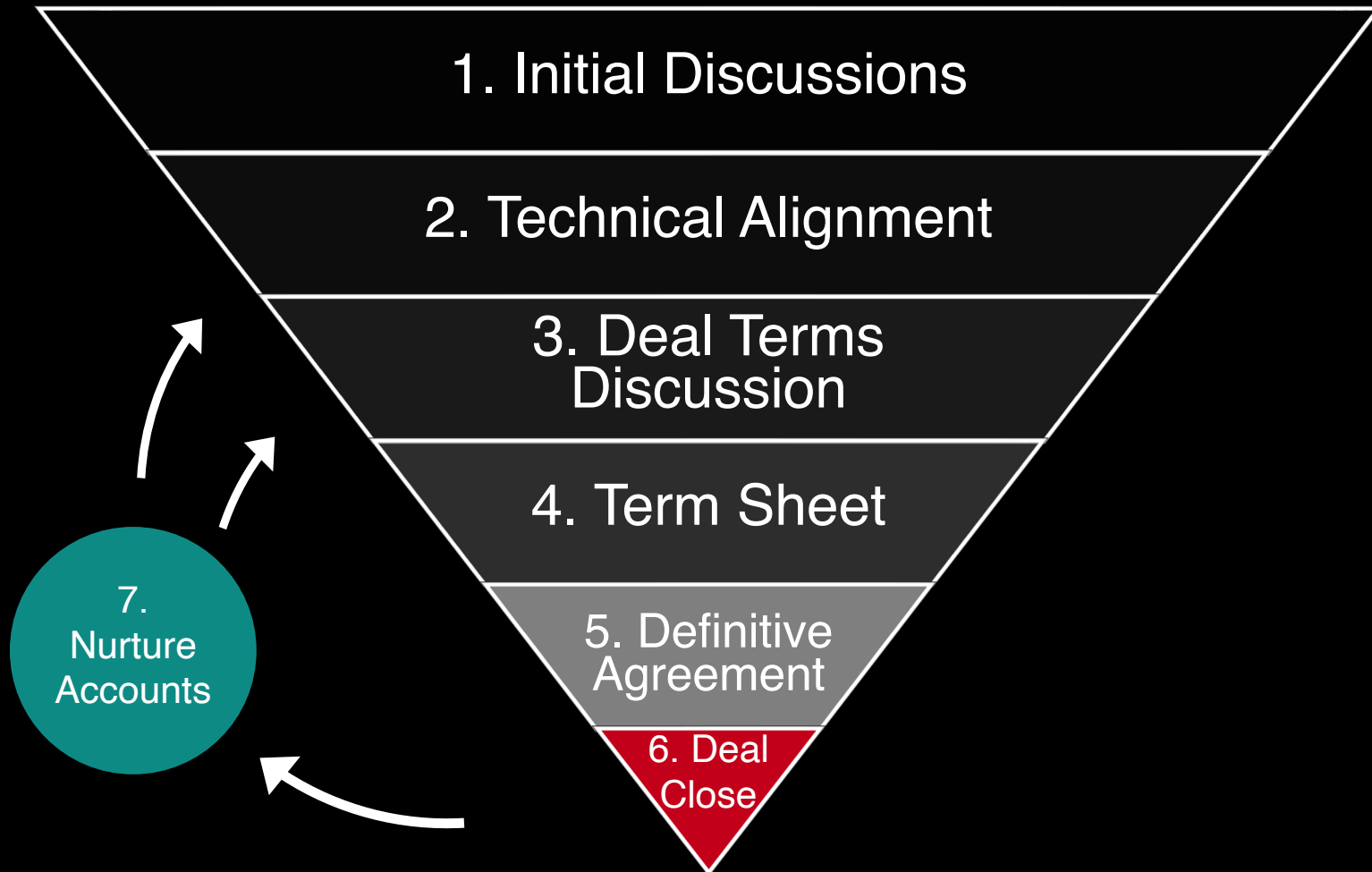
Novel & rare  
chemicals



# Focus on opportunities and markets that create value for our shareholders



# Partnership deal funnel optimization



## Key Considerations

- Discernment in deal selection
- Balanced funnel dynamics
- Continuous replenishment
- Efficient transition and progression
- Quality over quantity
- Strategic abandonment



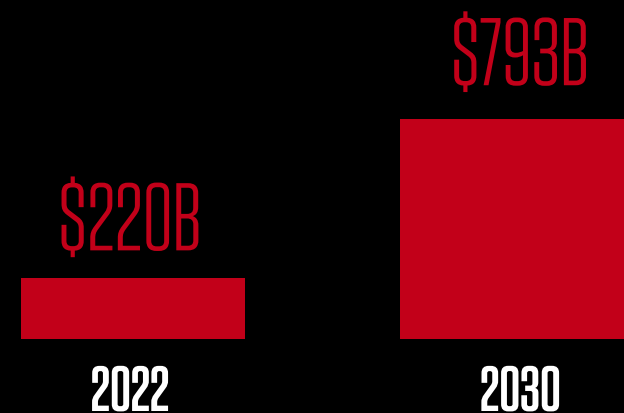
# Next generation **biomanufacturing** for **drug discovery** and development

- Enables new and better drugs **otherwise impossible to make**
- Allows for the biochemical engineering and mass production of a new generation of complex drug molecules, **by overcoming the limitations of cellular metabolism** and first-generation synthetic biology
- Allows for chemical engineering level control (biocatalysis) at never seen before levels by using **the best of biology and chemistry simultaneously**

# Isobutanol used as Sustainable Aviation Fuel (SAF)

- A liquid fuel already used in commercial aviation, which reduces CO2 emissions by up to 80%
- Comprises less than 0.1% of aviation fuels, but all airlines are looking for suppliers
- Healthy premiums/subsidies paid for SAF over fossil fuels
- A politically mandated hyper-growth market in both US and EU
- 70% of jet fuels at EU airports mandated to be SAF by 2050

## Total Addressable Market (US)



Source: The International Air Transport Association (IATA.org) and Acumen Research and Consulting



# Business model with **assymetric upside** potential

## Limited Downside

- Foundational patents
- Capital light
- Government grants & partners cover cost

## Unlimited Upside

- Unlimited markets
- Multiple revenue streams :
  - License fees
  - Royalties (1%—8%)
  - Critical enzyme sales

## High Impact on NPV

- Ability to disrupt multiple, multi-billion-dollar markets
- Value creation potential significant without the risk profile and cost of competing directly
- Potential to generate significant investor returns relative to capital requirement

By partnering, instead of trying to compete,  
we have **multiple shots on goal in multiple markets**