



Oct 24-26, 2023

**Accelerating  
Enzyme development  
for Biocatalysis**

# Our Mission

*Screen & Optimise*

***Highly Selective Enzymes***

*for the production of*

*Active Pharmaceutical Ingredients (APIs)*

# Biocatalysis at Allozymes: The first company generating & testing millions of enzymatic reactions per day



\*proprietary  
microfluidics  
machine

## Fast

**1,000x**

Faster screening of enzyme variants  
(Allozymes engineers enzymes in 2  
months)

## Cost-effective

**10x**

Negligible reagent consumption  
and less manpower with 75%  
lower CAPEX

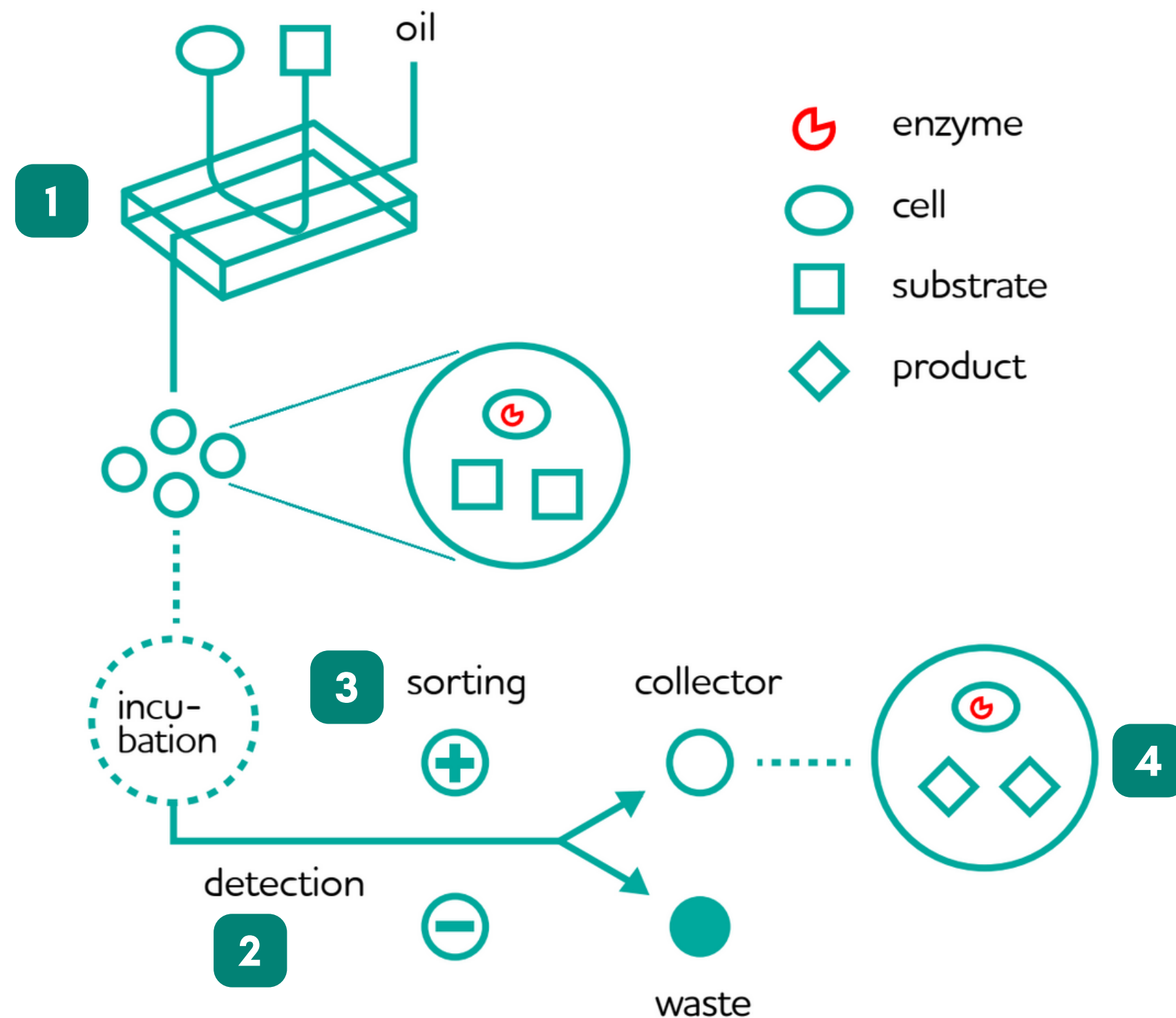
## Reliable

**200x**

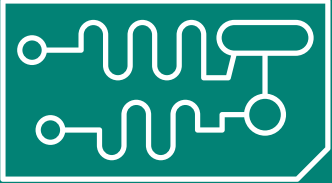



Higher chance of success with a  
larger library

# Allozymes Patented technology

## Directed evolution in a microfluidic system



# Key technical novelties by Allozymes

- 1**  **Proprietary Chip designs**  
Various chip designs for integrated or off-chip droplet incubation
- 2**  **Versatile detection Assays**  
Covering several classes of enzymes with versatile and sensitive assays
- 3**  **Embedded Sorter**  
Proprietary embedded sorting unit for droplet sorting
- 4**  **Data Library**  
Generate 10 M per day enzyme variant and data points

# Versatile Enzyme Engineering Platform for Diverse Chemistry

## Adaptable across Different Enzyme Classes

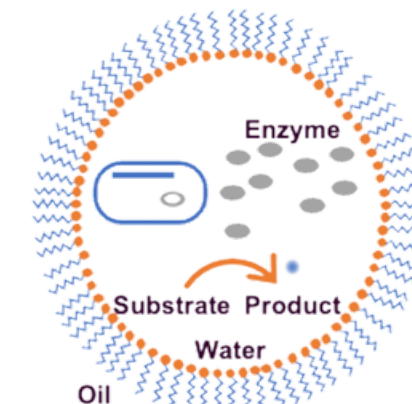
Transaminase	Amine Reductases	Amine Dehydrogenase
Hydrolases	Oxidases	Reductases
Isomerases	Transferase	Lyases

- Covering several **classes of enzymes** with versatile and sensitive assays
- Screening of **label-free** substrates

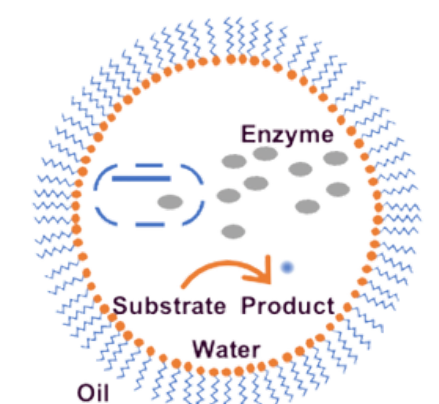
## Supports a Variety of Assays



Intracellular whole-cell



Extracellular whole-cell



Intracellular lysed cell

- Screening at wide **temperature, pH** ranges
- Detecting enzymes with **low to high activity**

# How Allozymes can help

## Directed Evolution of Enzymes for API processes

Optimise  
Target Enzymes

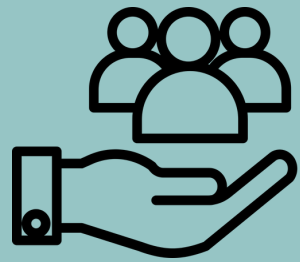


Ultra-high throughput screening (HTS)  
& Data generation

Accelerate Proof-of-Concept (POC)

Bioprocess Development

# Allozymes Flexible Business Models



## Fee-for-Service

*Support R&D*

### Service with IP ownership

Shorter-term, one-off R&D project to improve industrial enzymes

### Platform Play

Serve as External R&D partner for multiple projects with bespoke offers



## Custom enzyme development

*Partner Innovative Companies*

### Development with IP licensing

Support partner's Discovery & Commercial development programs for custom enzymes

### Enzyme Supply

In-house capacity to upscale production of engineered enzymes

# Case Studies: A Few Selected Examples

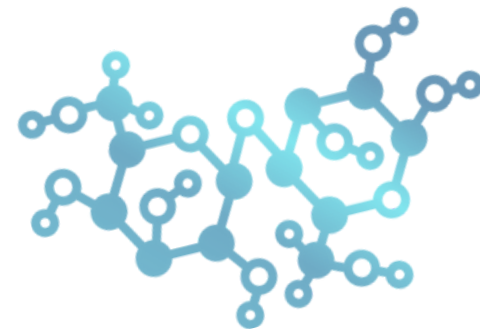
## Enzyme Selectivity

Improved product yield by **70% in 3 months** by engineering enzyme selectivity for Pharma API



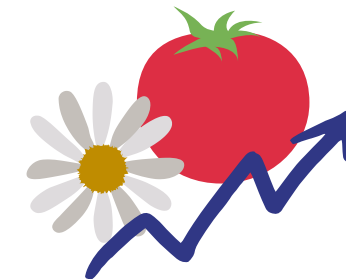
## Enzyme Activity

Improved enzyme activity by **10X in 2 months** in a challenging enzymatic transformation for feed



## Enzyme Cascade

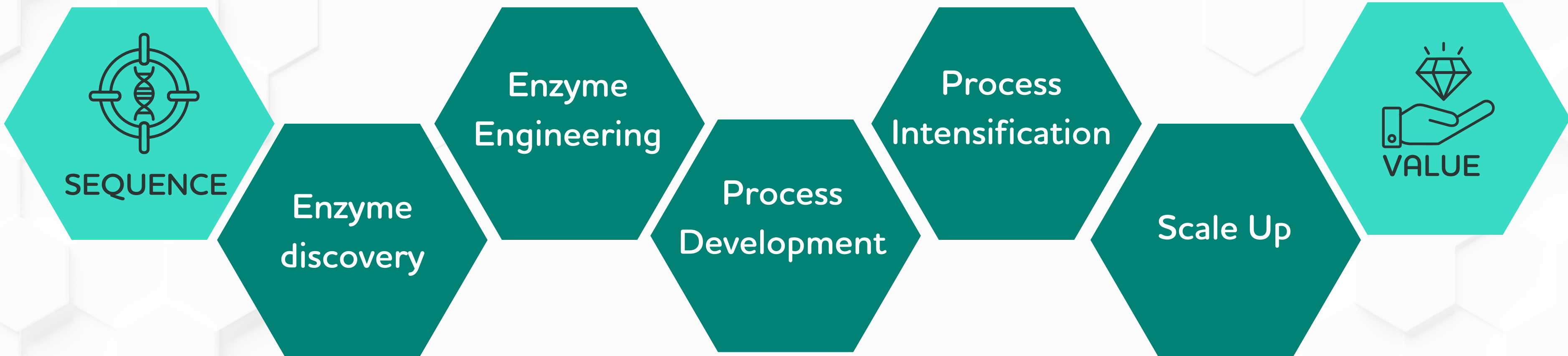
Screened **42,000** variants to select **1000** variants, which were tested in **upscaled assays**







ETA alliance offers protein R&D from discovery to manufacturing across the entire value chain



# Our Team

**100+**  
Publications

**50+**  
Years  
experience in protein  
engineering, biology,  
microfluidics,  
sequencing,  
computation

**22**  
Talented  
people

## Management Team



Peyman Salehian  
Co-Founder, CEO



Akbar Vahidi  
Co-Founder, CTO



Deepak Raghothaman  
Director of Business  
Development



Ali Fallah  
Director of Protein  
Engineering

## Biotech Team



Shahla Zavosh  
Application  
Engineer



Pradeep Nair  
Lead Protein  
Engineer



Balaji Sundara Sekar  
Engineering  
Scientist



Jacky Tan  
Research  
Assistant



Jonathan San  
Research  
Assistant



Pavan D R  
Research  
Assistant



Jasmin Jebarani  
Senior  
Research  
Officer



Alessandro Serafini  
Research  
Assistant



Shelly Cheng  
Protein  
Engineer

## General & Admin



Renee Leong  
Office &  
People  
Manager



Ernest Chan  
HR Manager



Tiago Resende  
Computational  
Biologist



Russell Lee  
Data  
Engineer

## Data Team

## Business Development



Chin Yi Loh  
Cosmetic Product  
Specialist



Audrey Robic  
BD Specialist

## Microfluidics Team



Patrick Tan  
Senior  
Microfluidics  
Scientist



Konstanze Kwek  
Research  
Assistant



Vijay Sairam  
Research  
Technician



Ehsan Mihankhah  
Electrical  
Engineering

# Thank you!


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page



 (ETA) Website