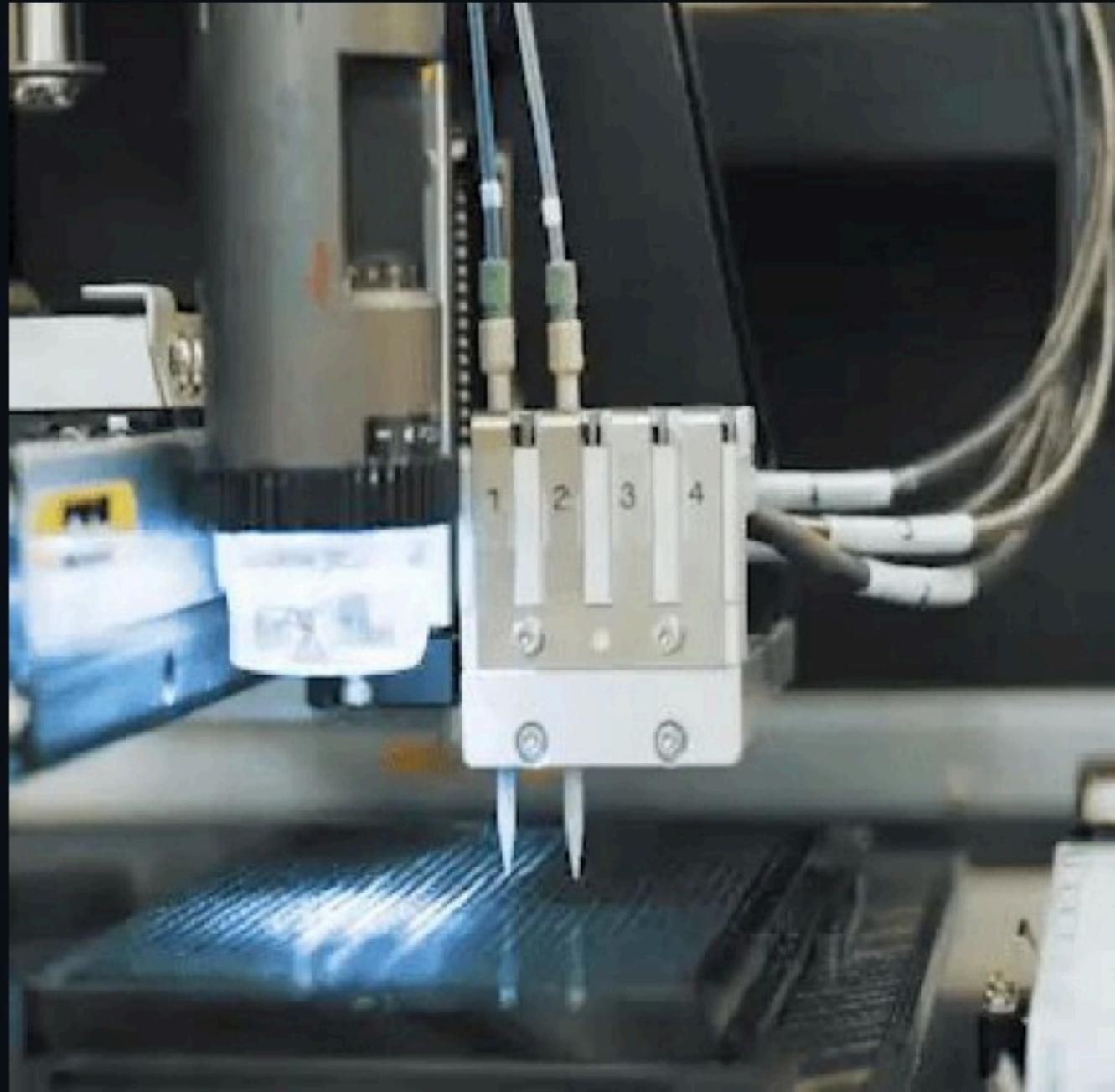




Aether

2023

Confidential





Confidential

**Imagine a future where
anything can be built atom
by atom**



Aether is building this future by designing molecular assemblers

Modern molecular manufacturing is limited in the products that can be built

Traditional scale-up is capex intensive, slow to scale and damaging to the environment

Fixing this requires moving from brute force chemistry to precisely assembling products at the atomic scale



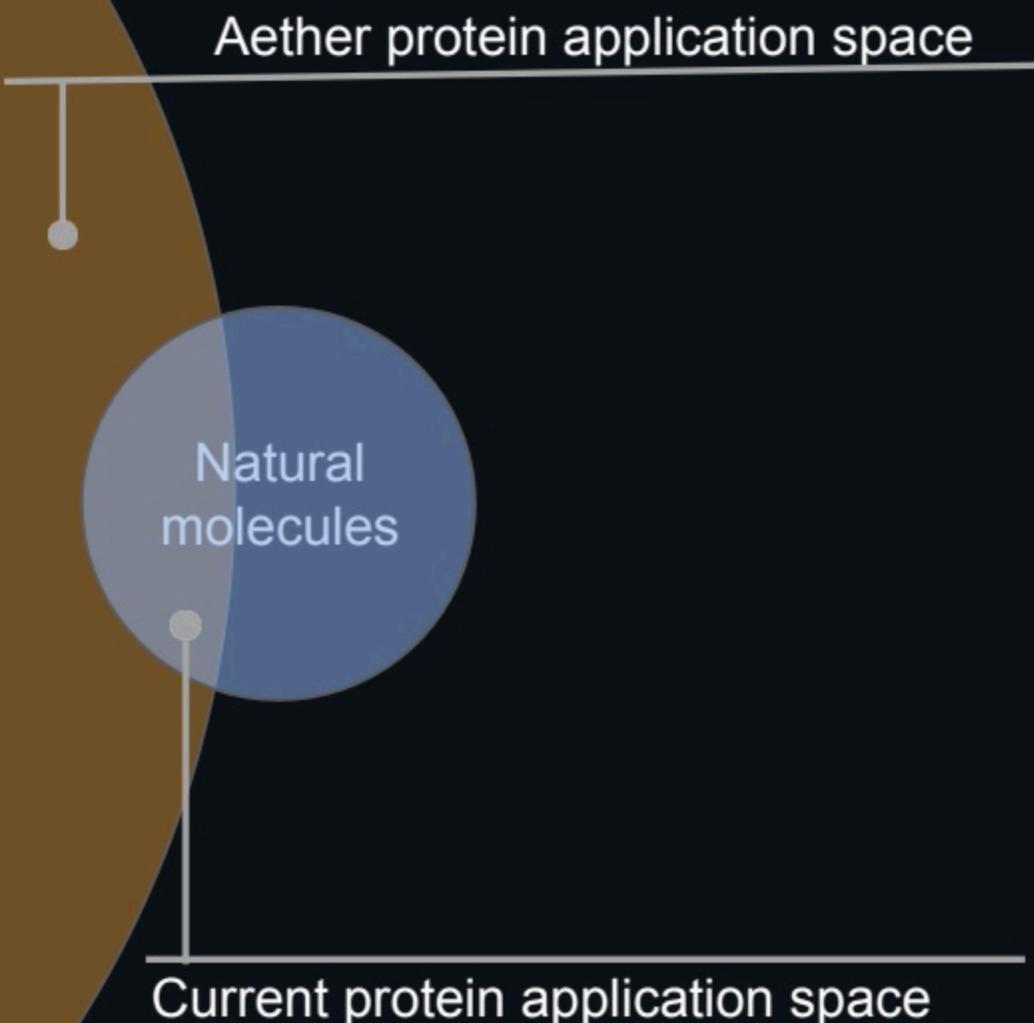
Biology gave us a start, but we need to push beyond what nature invented

proteins are nanoscale machines that manufacture molecules from simple building blocks

Current protein technologies are limited to catalyzing **natural-like reactions**

This limits the use of proteins to applications where the final product or reaction is similar to what already exists in nature

High value molecules





We have to build searchable **indexes** of proteins

Every protein can catalyze **thousands** of diverse non-natural reactions

However existing technologies test protein designs against **only a few** reactions at a time

Building searchable indexes requires empirically testing **millions** of protein - reaction combinations



Aether is building these indexes with proprietary technology

Aether's platform runs **miniaturized enzymatic experiments** on high density 1536 micro-plates to reduce per sample cost

Acoustic and piezoelectric printers rapidly print thousands of different molecules in order to empirically test proteins at scale

Reactions are spotted onto metal chips and **ionized with UV lasers** to maximize data rate per chip



Enabling our platform to generate datasets of unprecedented size and diversity

Ultra-High Throughput: **>20,000 samples/day per laser**, **20X** faster than state of the art

Hypothesis Free Data: Proprietary screening technology can detect over **10,000 different reactions per screen**

Scalability: Up to **10X lower per sample cost** through miniaturization and at **50X** lower CapEx than comparable tech



These indexes help Aether build molecular product lines with unique properties

Detoxifying our drinking water supply
from harmful forever chemicals

Synthesizing completely new materials
with extraordinary strength to weight ratios

**Extracting high value metals from new
sources** accelerating the electrification of the
global economy



Building these products requires overcoming 2 technological challenges

No catalyst for desired reaction class

Creating novel molecular products requires **identifying proteins catalyzing new reaction types** that are either impractical or impossible via other conventional methods

Reaction yield isn't optimized for scale

Once the product can be made in small quantities, the **protein yield must be boosted to industrially relevant conditions** in order to manufacture the final product economically



Aether's technology creates breakthrough solutions to both challenges

PROTEIN INDEXING

Aether can index proteins against over **1000X** more molecules than conventional technologies, enabling **rapid identification of new reaction types**

PROTEIN OPTIMIZATION

Aether's multi-parametric optimization algorithms can rapidly improve newly identified reactions under industrially relevant conditions, **enabling scale-up of new molecular products**



PROTEIN INDEXING

PROTEIN OPTIMIZATION

We've only just started indexing and already identified new reaction types for 3 product lines

We've demonstrated the capability to screen over **30,000** molecules against individual proteins

Over **1000X** more functional labels per protein than state of the art screening technologies

protein leads identified for defluorination, antiviral manufacturing, and aramid polymerization, all forming potential novel IP

Aether's Indexes enable the identification of new reaction types for unique product lines

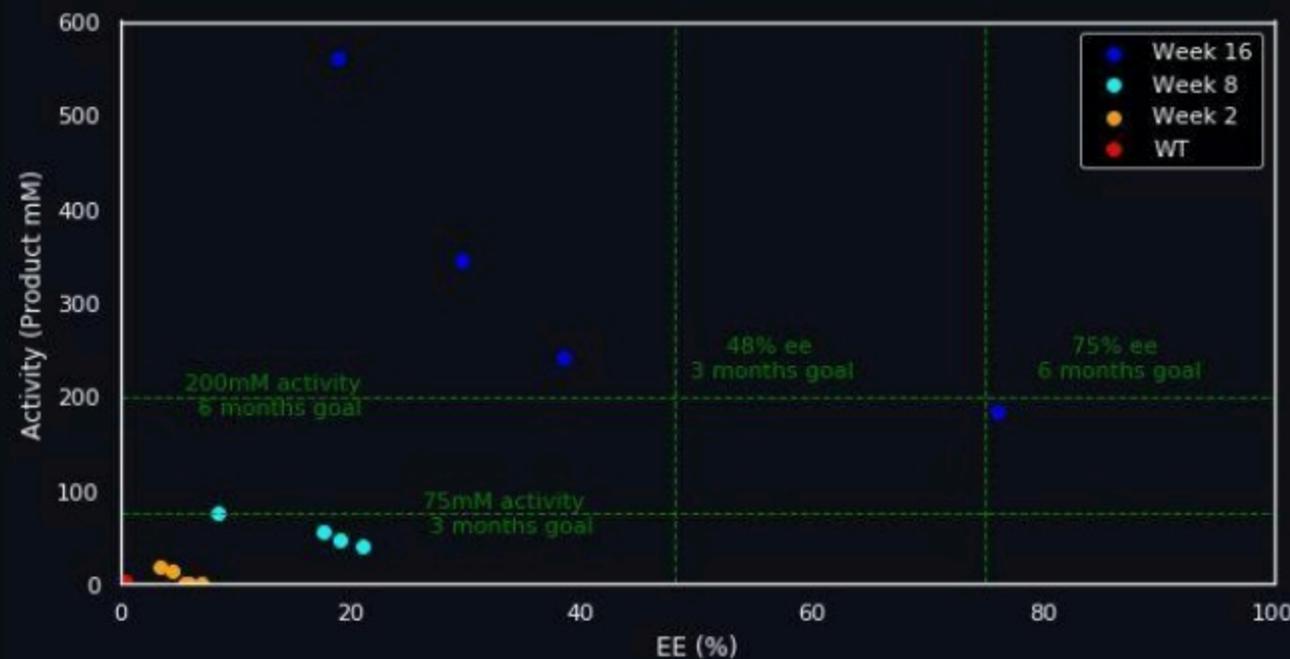
** new reaction type: patentable biocatalytic reaction between a specific protein and substrate(s) in which a specific type of bond change occurs*



PROTEIN INDEXING

PROTEIN OPTIMIZATION

**And we can
optimize proteins to
industrial spec in
under 6 months**



protein identified during indexing chosen as starting point for optimization

Algorithms combined with expert systems ran 15 iterations over 4 months, exceeding 6 month targets

Demonstrated **64X** product yield improvement and **190X** enantioselectivity improvement in 4 months



Our go to market strategy is designed to address 3 main challenges

Identifying new molecular products

Identifying new and interesting molecular products from the space of possible molecules can be like finding a needle in a haystack

Time and cost to design and deploy products

Companies can spend 3+ years trying to develop new molecules and spend \$15M or more before even attempting to scale manufacturing

Disappointing economics at scale

Long development time, incremental performance/lack of green premiums and small margins have plagued synbio products with disappointing economics when they finally reach the market



We derisk our product lines by mining our indexes for novel and proprietary reactions

Aether simplifies searching for new molecular products by mining our indexes for **novel reaction types** on **valuable molecular classes**

Every indexed reaction can be the foundation for novel IP owned by Aether

Aether's reaction-first approach reduces early product R&D risks and ensures sustainable competitive advantage



Our platform allows us to develop and derisk products rapidly, and at low cost

5+ product lines can be started per year

Standardized expression system and biocatalysis (instead of fermentation) **allow for fast and low risk process scale up**

Lower per-program costs and rapid timelines allow Aether to fail fast and rapidly iterate to new molecular products