

SERVICE GUIDE

Synthetic biology biofoundry and CRO,
designed for scale, built for speed



Proprietary systems for
accelerated commercialization



Flexible fee-for-service
engagement



Development driven by
performance and economics



IP friendly
commercial terms

Outcomes based,
success approach

End-to-End
R&D services

 ACCELERATED POC

 PROCESS OPTIMIZATION

 R&D SERVICES


INDUSTRY SEGMENTS

- Industrial biotech
- Foodtech & ingredients
- Agriculture & environmental
- Pharma & personal Care
- Emerging markets



BIOLOGICAL PRODUCTS

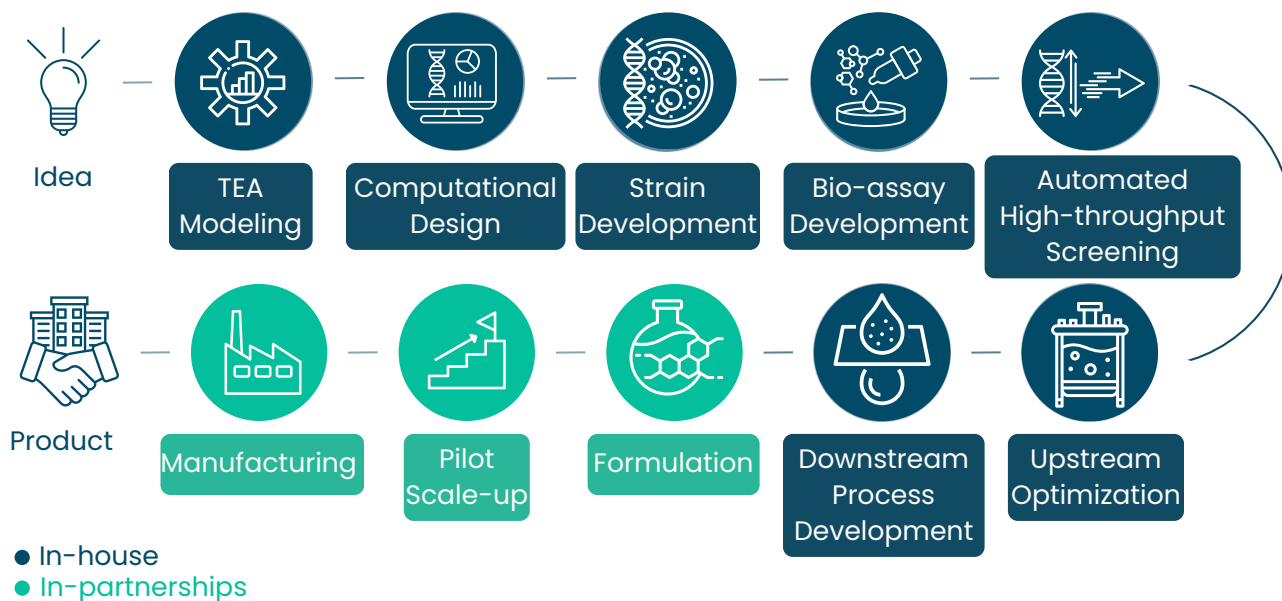
- Proteins & peptides
- DNA & RNA
- Enzymes
- Secondary metabolites
- Microbes / consortia



GENETIC PLATFORMS

- *E. coli*
- *Bacillus subtilis*
- *Pichia pastoris*
- *Trichoderma reesei*
- Various microbial systems

CORE CAPABILITIES AND SERVICES



02 PROPRIETARY SYSTEMS

Ensuring smarter discovery and significantly lower commercialization costs.

ULTRA HIGH-PERFORMANCE BIOLOGICAL ASSETS



PICHIA PROTECT™

PROTEASE-DEFICIENT

Enhanced protein stability and yield by minimizing degradation



PICHIA SECURED™

METHANOL-FREE

Safer, more sustainable fermentation without methanol induction



BACILLUS SAFE™

SPORULATION-FREE

Optimized for industrial manufacturing and clean downstream processing



TRICHODERMA FACTORY™

SCALE-READY

High-capacity enzyme secretion systems for industrial volumes, with potential of reaching >100g/L depending on the enzyme

AUTOMATION INFRASTRUCTURE & PREDICTION SYSTEMS



HTP SCREENING PLATFORMS

PICHIA SCREEN™

BACILLUS SCREEN™

Episomal HTP screening platforms for rapid library validation



AUTOMATED BIOASSAYS BANK

ACCELERATED DISCOVERY

Rapid functional testing to support performance claims (yield, activity, etc.)



BIOINFORMATICS & SEQUENCING

NGS

SANGER SEQUENCING

Deep genetic insights and sequence verification



MICROBIAL CHARACTERIZATION

BID & FID

ECOLOGY & MORPHOLOGY

Detailed phenotypic profiling and culture health monitoring



AUTOMATED FERMENTATION

DESIGN OF EXPERIMENT

Modeling systems to reduce runs and maximize parameter coverage

03 TECHNO-ECONOMIC ANALYSIS

We combine biological design with our proprietary techno-economic model to ensure every development path is scalable, cost-effective, and commercially viable from day one

✓ VALIDATES MULTIPLE PROCESSES ✓ END-TO-END PROCESS MODELING ✓ CUSTOMIZED FOR YOU

100X
Cost reduction

TOTAL COST OF PRODUCT

Bridging the gap between **market reality** and **biological potential**

CURRENT MARKET PRICE \$1,187 / kg

OPTIMIZED COST FORECAST \$11.5 / kg

OUR APPROACH

01 / BIOPRODUCTION STRATEGY

Select and compare expression systems and processes (USP & DSP) to be aligned with your cost target

SELECTION 1

SELECTION 2

ORGANISM

Pichia pastoris ▾

CARBON SOURCE

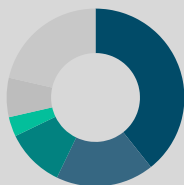
Methanol ▾

AVERAGE FEED RATE (g/h)

1.5

TITER (g/L)

6.5



REAGENTS
15%

STEAM
8%

CARBON SOURCE
30%

ELECTRICITY
25%

WASTE
17%

WATER
5%

02 / COST DRIVERS

Our model breaks down CAPEX & OPEX and highlights where optimization has the highest impact

03 / OPTIMIZE PERFORMANCE TARGETS

We guide development toward clear cost and performance milestones

		VOLUME (L)			
		10	100	1,000	10,000
PRODUCTIVITY (g/L/h)	10	\$/kg 820	\$/kg 340	\$/kg 96	\$/kg 46
	5.0	\$/kg 1,380	\$/kg 690	\$/kg 220	\$/kg 88
	1.5	\$/kg 2,500	\$/kg 1,450	\$/kg 720	\$/kg 310
	0.5	\$/kg 4,200	\$/kg 2,800	\$/kg 1,650	\$/kg 980

04 STRAIN OPTIMIZATION

Alagene integrates computational design with advanced cell engineering to develop and optimize biological systems, from improving existing strains to designing novel ones. Leveraging cloning, genome engineering, and automated high-throughput screening, we enable rapid, large-scale variant evaluation and efficient optimization, accelerating R&D towards scalable, cost-effective solutions.

OUR STRAIN EXPERTISE INCLUDES



EXPRESSION SYSTEM ENGINEERING

PROTEINS & PEPTIDES DNA & RNA

Design and engineering of scalable expression systems for diverse biomolecules



NON-GMO OPTIMIZATION

MUTAGENESIS DIRECTED EVOLUTION

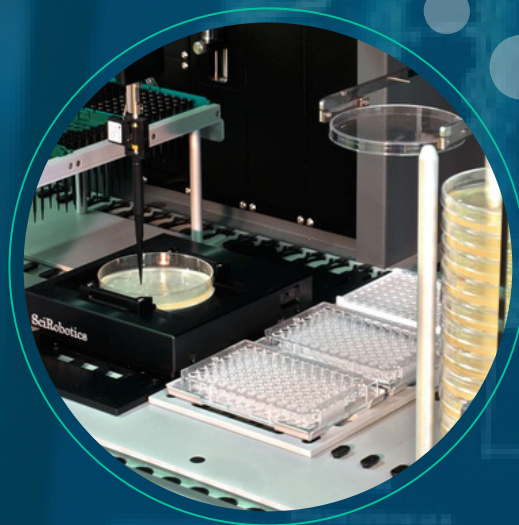
Enhance microbial performance through adaptive selection



PATHWAY ENGINEERING

METABOLITES BIOCHEMICALS
LIPIDS & OILS POLYSACCHARIDES

Programming cellular pathways to enable efficient production of high-value molecules



OUR HTP CAPABILITIES INCLUDE



HIGH-END AUTOMATION

ROBOTIC LAB

Enabling large-scale screening of samples to optimize expression and function



AUTOMATED ENGINEERING CYCLE

COLONY PICKING LIQUID HANDLERS

Accelerated Design–Build–Test–Learn cycles with robotic systems supporting engineering, screening and strain validation



DE-NOVO BIOASSAY DEVELOPMENT

AUTO PLATE READER ACOUSTIC LIQUID HANDLERS

HTP bioassays for rapid evaluation of expression, secretion, functionality, and growth

Alagene's fermentation, downstream, and analytics teams support the full development of biological processes from early-stage research to production. We design and optimize fermentation processes, develop purification strategies and apply advanced analytical methods to monitor performance and ensure product quality, purity, and consistency throughout development.

FERMENTATION CAPABILITIES



PROCESS OPTIMIZATION

MULTI-PARAMETER CALIBRATION

Multi fermentation systems for simultaneous calibration



PROOF OF CONCEPT

SCALE-READY PROTOCOL

We produce prototypes to demonstrate commercial viability



CORE DSP TECHNIQUES



PRODUCT PURIFICATION

CHROMATOGRAPHY FILTRATION

Utilizing separation methods to achieve precise purification within target cost



PRODUCT ANALYTICS

HPLC LC-MS/MS

Development of analytical methods for product purity, quantification, and validation



DRIVING COMMERCIAL SUCCESS THROUGH SCIENTIFIC EXCELLENCE

Through continuous optimization and integration of advanced technologies, Alagene delivers efficient, scalable bioprocess solutions that move projects from development to commercial production.

Alagene offers optimal conditions and strategic partnerships to accelerate your research and development. By leveraging our advanced facilities and expert network, we ensure your projects are delivered with unparalleled precision and effectiveness.

ALAGENE SERVICE PACKAGES



FEASIBILITY & DESIGN

GO/NO-GO WORK PLAN

Host & Targets definition
Experimental design
Techno-economic analysis



HTP STRAIN OPTIMIZATION

ACCELERATED CHASSIS SELECTION

Sequence & construct design
GMO/ Non-GMO
HTP Bioassays screening



BIOPROCESS OPTIMIZATION

MEGA-PRODUCER PROCESS

Fermentation optimization
Downstream strategy



STRATEGIC PARTNERSHIP

EXTENSION OF YOUR R&D TEAM

Multi-module roadmap under a unified program

OUR COMMITMENT

Our flexible and accessible approach, backed by extensive in-house expertise, adapts to meet your unique needs. Whether it's a single service or a comprehensive project engagement, we tailor our solutions to ensure your success.



Risk-reduced

Full process integration
to enable smarter
decision making



IP Friendly

Flexible models aligned
with your IP constraints



Milestone-based

Clear project roadmap
and defined deliverables

TRUSTED BY INDUSTRY LEADERS

"It was a pleasure to work with the experts at Alagene. The team was highly responsive and professional. From experimental design to swift execution of the experiments and detailed summaries of the results, the collaboration was a great success."

Daniel Taglicht, PhD

Department Head
Protein Expression & Purification
R&D Science

"Working with Alagene was efficient and professional. Alagene is an important player in the biotech ecosystem; I recommend to consider outsourcing part of their projects to Alagene – in many cases, this can save time and money."

Tamir Tuller, Prof.

Head of Computational
Systems and Synthetic
Biology Laboratory at Tel Aviv
University

"Alagene has shown a creative and thoughtful approach to strain optimization, with a solid understanding of the technical aspects. With good collaboration, and quick delivery, the work has been handled in a professional way."

Yosef Behrend Ph.D

Managing Director,
Fermentek Ltd.

MERCK



READY TO REALIZE YOUR NEXT BREAKTHROUGH?

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www.alagene.co.il