



SEQENS

OUR SCIENCE FOR YOUR FUTURE

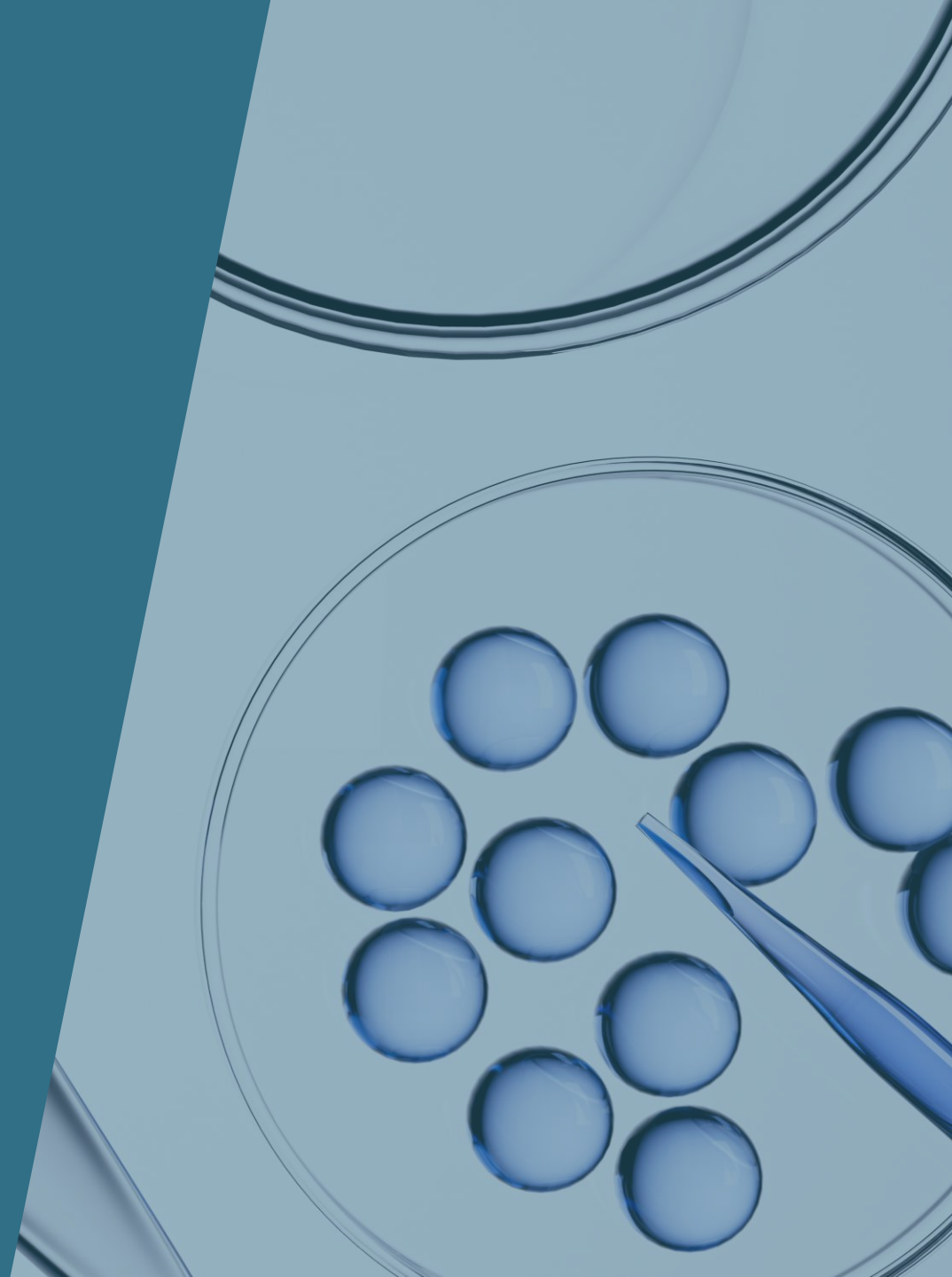
SEQENS Biotechnologies

Biosolutions 2.0 for every application

From Drylab to Wetlab



Business Line Presentation





Who we are

SEQENS Group

Global Leader in Specialty Ingredients Manufacturing



>€1BN
Revenue



c.2700
Employees



1500+
Clients



15
Manufacturing
sites



9
Countries

→ State of the art science platform



5 R&D
Centers



>300
Research scientists
& experts (130
PhDs)



>12000
SQM
Lab surface



LABS
Up to 50L & 7
Pilot Plants

CDMO – Pharma Division

- Aspirin
- Paracetamol
- Ketamine

CRDMO – SEQENS Biotechnologies

- SEQENZYM βG
- SEQENZYM FT
- SEQENZYM LM
- SEQENZYM AL
- Estolides
- PeptiCode™ HP-9

CDMO – Specialty Ingredients Division

- Diols & Green Diols
- Lubricants



Who we are

Facilities

Two centers, One team



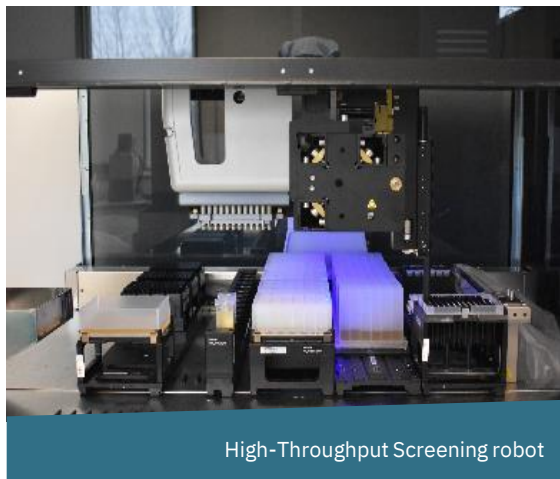
Enzyme Peptides, Polypeptides & Cell Factory Experts

Synthetic Biology / Microbiology / Enzymology / Cell Metabolism /
Biocatalysis / Fermentation (USP/DSP) / Scale-up / Industrialization /
Manufacturing

>10 years without cat.1 Accident

Le Bourget-du-Lac
alganelle
by SEQENS

Nîmes
protéus
by SEQENS



High-Throughput Screening robot



High-Throughput Experimentation robot



6 x 1L and 2 x 3L
Lab-scale bioreactors



LCMS coupled to HTE



2 x 40L Fermenters



1 x 20L & 1 x 30L
Photobioreactors



1 x 300L Pilot-scale &
Manufacturing fermenter



Who we are

Equipment

Two centers, One integrated platform

Automated Platform (HTP)

High-Throughput Screening robot (HTS)

High-Throughput Experimentation robot (HTE)

BIG KAHUNA from Unchained Labs, unique in a European CDMO

Fermentation

6 x 1L and 2 x 3L Lab-scale bioreactors

2 x 40L Scale-up fermenters

1 x 300L Pilot-scale & Manufacturing fermenter

Photobioreactors : 2 x 3L – 1 x 20L – 1 x 30L

Downstream Processing

High-pressure homogenization (1-100 L/h)

Tangential & Frontal flow filtration: MF / UF / NF (1-200 L/h)

Chromatography purification systems (ÄKTA pure FPLC)

Formulation & Stability

Lyophilization (Lab-scale, 800 mL/24 h)

Analytics

HTP U-HPL Chromatography (UV, MS, RI, ELSD)

HTP Gas Chromatography (FID, MS)

UV-VIS Spectrophotometry

SDS-PAGE Protein quantification



What we do

Exclusive Custom Ingredients



30+ years of
combined expertise

Biosolutions



Engineered Cell Factories



Specialty Enzymes
63M+



Native Strains
5000+

Bioprocesses



Precision Fermentation
Synthetic Biology & Bioproduction



Industrial Biocatalysis

Applications



Personal Care



Flavors & Fragrances



Food / Feed



Agrosciences



Fine Chemicals



Pharmaceuticals



How we do it

Proof of Concept

Screening &
Green Engineering



Biosolutions Discovery 2.0

5000+ unique native strains
63M+ unique native genes

- **Data-mining & In silico selection**
Screen through 100'000s sequences
in just 2 weeks
- **Design of innovative chimeric genes**



Native or Engineered Cell Factories

- Precision **fermentation**
- **Metabolic engineering**
- Expression system selection
- Cell Banking (MCB/WCB)

Cell Factory Platforms

Our proprietary Yeast strain
YarrowMax (*Y. lipolytica*)

- ↗ Productivity
- ↘ Process costs

Our proprietary Microalgae

- *Chlamydomonas*
- *Chlorella*

Other common Cell Factory

- *E.coli*
- *P. pastoris*
- *Bacillus subtilis*
- **Plant stem cells**

Cyanobacteria



Proprietary & Custom Ingredients

- **Peptides & Polypeptides**
- **Proteins**
- Carbohydrates
- Lipids
- Small molecules



Enzymes

- Directed Evolution
- **AI-driven** rational design
- **Cost-Driven** optimization of activity and expression
- Biocatalytic reaction

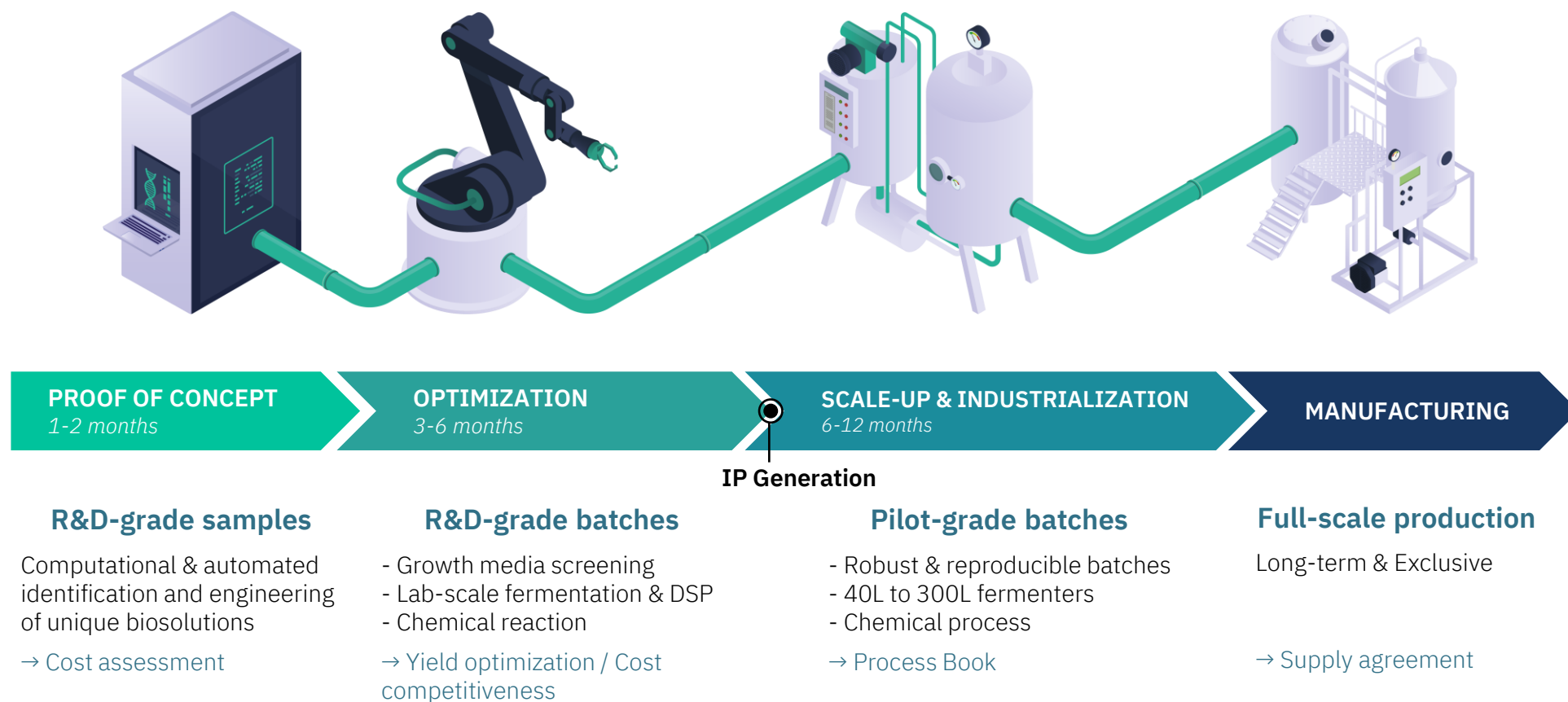




How we do it

From Concept to Market

Bioprocesses & Ingredients



**Exclusive
Custom
Ingredients
& Bioprocesses**

Thank you!



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