

# SEQENS

OUR SCIENCE FOR YOUR FUTURE

**Trusted CDMO**

*for Active Pharmaceutical Ingredients & Intermediates*

APIs



DEVELOP

SECURE

MANUFACTURE  
IN THE EU & US

IMPROVE  
CONTINUOUSLY

## Foster growth with Seqens

Four custom development and manufacturing organizations – PCAS in France and Finland, Chemie Uetikon in Germany, PCI Synthesis in the United States and Wavelength in Israel & India – have joined forces as Seqens CDMO to offer world-class drug Substance development and manufacturing services to the pharmaceutical industry.

### I&GP, the pharmaceutical division of SEQENS: Custom Synthesis, Proprietary APIs, Drug Delivery Solutions



**1,700**  
Employees



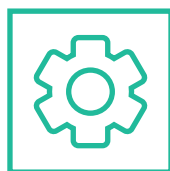
**250**  
Scientists, experts  
and engineers



**3**  
Main R&D Centers  
worldwide



**7**  
cGMP/FDA  
inspected sites WW



**3**  
Pre-GMP sites for  
RSMs & Building-blocks



**1,200 m<sup>3</sup>**  
700 m<sup>3</sup> cGMP



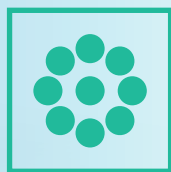
Over **35** years  
of API production  
experience



**200+**  
DMFs for  
commercial APIs



Excellent record  
at all GMP sites



Global sales  
and distribution  
network



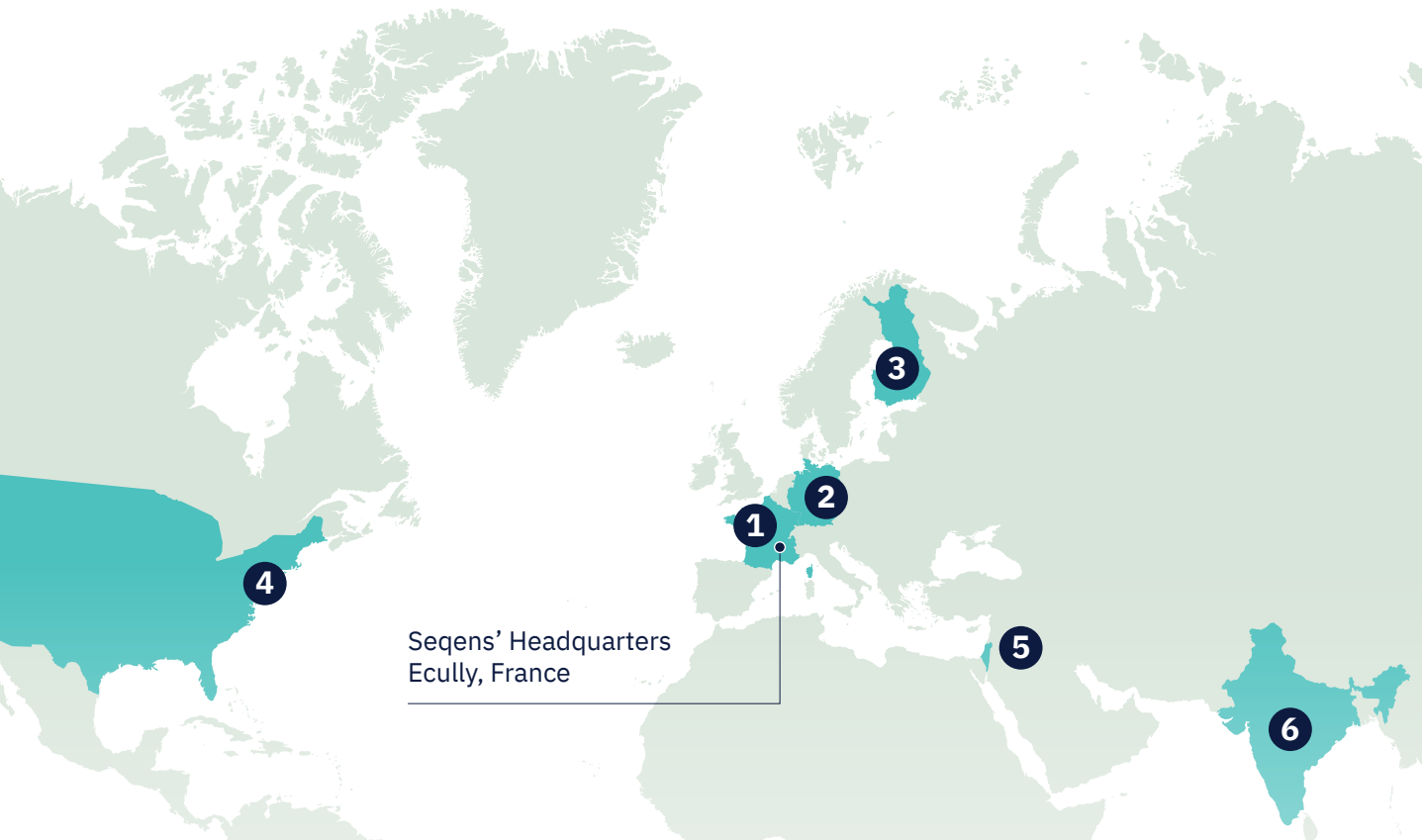
**700+**  
Clients



In-house back integration of  
intermediates and starting  
materials for safe supply

# An International Network

Benefit from a manufacturing network of **7 cGMP plants** (located in Europe, United States, Israel) and **3 pre cGMP sites** (located in France and India) with a strong **regulatory track record** with international health authorities and recognized **expertise in specialized technologies**.



Seqens' Headquarters  
Ecully, France

## Europe

- 1. Aramon (France) ●
- 1. Villeneuve-la-Garenne (FR) ●
- 1. Limay (FR) ●
- 1. Bourgoin-Jallieu (FR) ●
- 1. Couterne (FR) ●
- 2. Lahr (Germany) ●●
- 3. Turku (Finland) ●

## US

- 4. Newburyport, MA ●

## Middle East & Asia

- 5. Neot Hovav (Israel) ●
- 6. Hyderabad (India) ●●

## Features

- Agile multi-step Chemistry
- Highly Potents
- High pressure chemistry
- Biocatalysis
- Flow chemistry
- Solid state design
- Particle Design
- Spray Drying
- Micronization
- Lyophilization
- Standalone Analytics

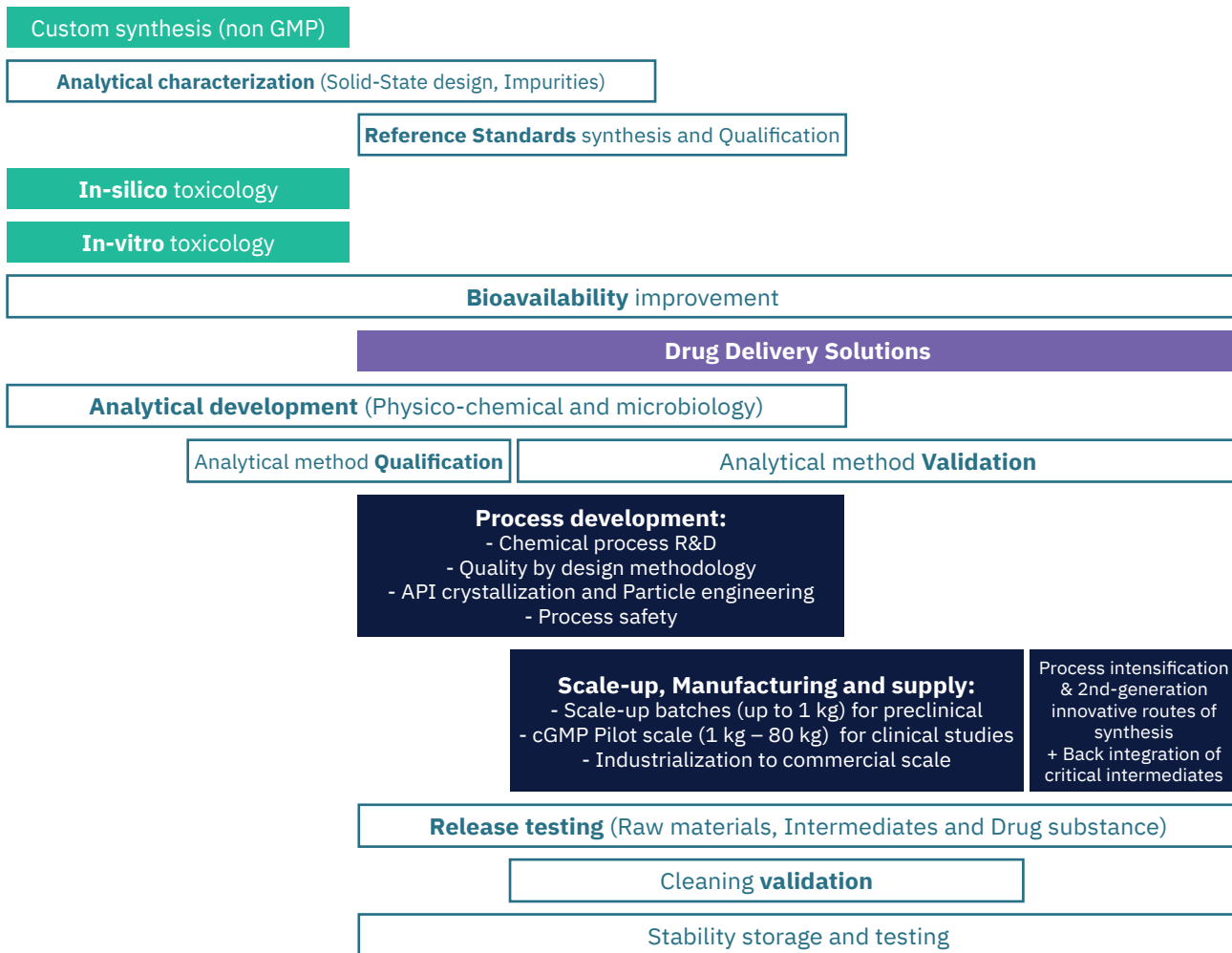
# Contract Research & Manufacturing Services: Full service from Preclinical to Industrial API Production

## Custom Intermediates

Non-GMP Intermediates • Registered Starting Materials • GMP Intermediates

## Small molecule APIs Custom Research, Development & Manufacturing

Drug Discovery (Lead optimization) → Preclinical → Clinical Phase I → Clinical Phase II → Clinical Phase III → Phase IV Commercial → Proprietary



CMC Program management by dedicated staff / Regulatory support



# A comprehensive global R&D platform with unique scientific skills

## Europe • France

### SEQENS'Lab



#### Small molecules & polymers

- 2,000 m<sup>2</sup> Lab-Floor
- 3 Kilo Labs suites
  - 3 Pilot units
  - 110 Scientists
- Crystallization
- Solid state & Polymorphism
- Flow chemistry
- Grams to multi ton GMP scale up
- High potency APIs OEL<100 ng/m<sup>3</sup>



protéus  
by SEQENS

#### Biocatalysis

- 1,000 m<sup>2</sup> Lab-Floor
- 8,000 Micro-organisms library 350 Enzymes available for testing
  - 20 Scientists
- Biocatalysis
- Tailor made enzymes

## North America • US



#### Early phase projects

- 1,000 m<sup>2</sup> Lab-Floor
  - 5 Kilo Labs
  - 30 Scientists
- Controlled substances (Schedule II-V)

New R&D site for preclinical work launched 2022 in Devens

## Specific offer

### Standalone CRO services

- Bioavailability
  - Solid state characterization
  - Polymorph screening
  - Particle engineering
  - Pre-formulation study
- Toxicology
  - In-silico testing
  - In-vitro testing (general tox, genotoxicity, sensitization)
- Analytical science
  - Analytical characterization
  - Genotoxic impurities
  - Reference standard custom synthesis & qualification
  - Development and validation of analytical methods
  - Stability storage and testing
  - GMP release testing
  - Cleaning validation studies
  - Microbiological testing

### Drug Delivery Solutions

- GMP Lipids and Polymers
- Solutions for Bioavailability
- Oncology, RNA encapsulation, Material for medical devices

## SEQENS'Lab

### A unique innovation ecosystem

that fosters collegial interactions among industry, investors, government, and academia

Start-ups currently on-site specialize in:

- In-silico toxicology
- In-vitro toxicology
- Drug repositioning



# Agile Multi-step chemistry

## Esterification

- Carboxylic Esters
- Fatty acid Esters
- Polyglycol Fatty Acid Esters

## Acylation

- Friedel Craft C-C: Aromatic alkenes, Aromatic cetones
- Schotten-Baumann C-N: Amines, Amides

## Cyclisation

- Cyclopentadiene Derivatives
- Diels-Alder
- Trimerization

## Hydrogenation

- Up to 90 bars and 230°C

## Carbonylation & Hydroformylation

- Up to 90 bars
- Up to 230°C

## Alkylation

- C-C bond:
  - Alkyl alkenes, Friedel Craft
  - Alcohols, acids: Grignard
- C-N Bond:
  - Quaternary ammonium salts
  - Amines
  - Amides

## Halogenation

- Chloride salts
- Acyl chlorides
- Brominated derivatives

## Flow Chemistry

- **NITRATION**
  - Aromatic nitro compounds
  - Aliphatic nitro compounds
- **HYDROGENATION**
  - Saturated chains
  - Aromatics
  - Amines
- **HALOGENATION**
  - Chlorination
  - Acyl chlorides
  - Sulfonic acid derivatives
  - Sulfonates
- **FLUORINATION**

## Oxidation

- Ketones
- Carboxylic acids
- Acyl chlorides
- Esters

## Coupling reactions (Suzuki, Heck, Kumada, Stille)

- Alcohols
- Ketones
- Alkylation (C-C)
- Polymers
- Peptides

## Reduction

- Alcohols
- Alkanes
- Amines

## Phosphonation

- Phosphites
- Phosphates
- Phosphonates:  
Wittig type reaction

## Cryogenic chemistry

- - 80°C

## Enantiopure synthesis

- Resolution
- Asymmetric synthesis
- Biocatalysis

## Enzymatic reactions

- « Non natural » Amino-acids
- Gene engineering
- Chiral molecules
- Steroids

## Miscellaneous

- Ethers (Williamson)
- Sulfurization
- Carbonation
- Sulfonation

# Our CDMO dedicated manufacturing plants

## France

Location	Bourgoin-Jallieu*	Couterne*	Aramon	Villeneuve-la-Garenne	Limay
Product categories	Pharmaceutical Solutions(CDMO)	Pharmaceutical Solutions(CDMO) & Specialty ingredients	Pharmaceutical Solutions (CDMO)	Pharmaceutical Solutions (CDMO)	Pharmaceutical Solutions (CDMO)
Custom APIs & Intermediates			✓	✓	✓
Highly Potents			OEB4	OEB4/OEB5 (Raw mat.)	
RSMs & Catalog Intermediates	✓	✓			
Drug Delivery & Medical Devices Polymers			✓		
Features	Distillation units 95 m <sup>3</sup>	300 m <sup>3</sup>	APIs Pharma Polymers 100 m <sup>3</sup>	Hormones High Potent APIs 95m <sup>3</sup>	APIs & Controlled Substances 90 m <sup>3</sup>
Ecovadis certifications	Gold	Gold	Gold	Gold	Gold
Other certifications	Internal Quality system suitable for RSMs	ISO 9001 Internal Quality system suitable for RSMs	cGMP	cGMP	cGMP
Authorizations by health agencies			EU / USA	EU / USA BR / TK / JP	EU / USA / JP

## Other Countries

Location	Lahr (DE)	Turku (FIN)	Newburyport (US)	Neot Hovav (Israel)	Hyderabad (India)*
Product categories	Pharmaceutical Solutions (CDMO)	Pharmaceutical Solutions (CDMO)	Pharmaceutical Solutions (CDMO)	Pharmaceutical Solutions (CDMO)	Pharmaceutical Solutions (CDMO)
Custom APIs & Intermediates	✓	✓	✓	✓	✓
Highly Potents				OEB4/OEB5	
RSMs & Catalog Intermediates	✓		✓	✓	✓
Drug Delivery & Medical Devices Polymers	✓		✓		
Features	APIs & Controlled Substances 100 m <sup>3</sup>	Injectable APIs 70 m <sup>3</sup>	APIs Pharma Polymers Controlled substances 70m <sup>3</sup>	APIs, including injectables, controlled substances, steroids, cytotoxics, high potency products 160 m <sup>3</sup>	32 m <sup>3</sup>
Ecovadis certifications	Gold	Silver	Gold	Silver (2019)	NA
Other certifications	cGMP ISO 9001 ISO 50001	cGMP	cGMP	cGMP	ISO 9001 cGMP inspection to come
Authorizations by health agencies	EU / USA / JP / MEX	EU / USA / BRCA / JP	USA	EU / USA / JP	EU / USA / JP

● \*Non-cGMP sites    ● cGMP sites

# Our CSR Strategy

SEQENS supports its customers in the development of effective scientific solutions to enable everyone to protect and heal themselves. Because of its activity in the health sector, the Group is aware of its responsibility towards society.

In this continuity, the SEQENS Group integrates social and environmental concerns in its business activities and its relations with stakeholders.

The SEQENS Group has structured an ambitious CSR strategy based on respect for its employees and aimed at reducing environmental impacts throughout the value chain.

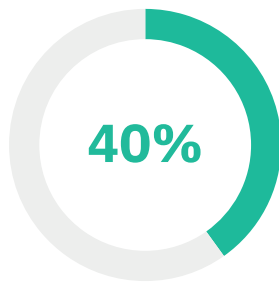
Carbon footprint



2011-2025

Scope 1+2 carbon intensity  
CO2e emissions per ton of product

Renewable energy consumption



Target 2025

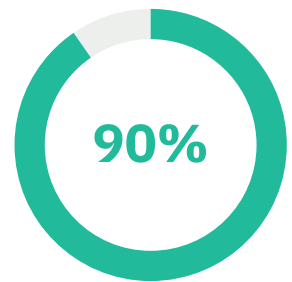
Water



2021 - 2025

Water consumption

Ecovadis



Target 2025

90% of Gold or  
Platinum entities

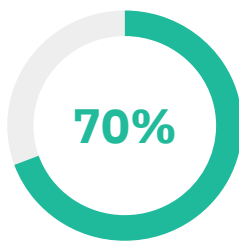
Safety



Target 2025

Category 1 accident  
Frequency rate

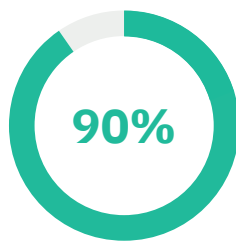
Employee engagement



Target 2027

Calculation carried out and  
audited by the Great Place To  
Work (GPTW) index

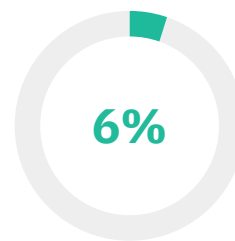
Pay Equity



Target 2025

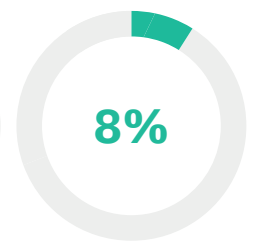
Index calculated for  
companies > 50 employees  
(legal France)

Youth commitment



Target 2025

Share of apprenticeships & internships  
in the total workforce



Target 2030



# SEQENS

OUR SCIENCE FOR YOUR FUTURE

## About SEQENS

SEQENS is a worldwide leader in the development and production of active ingredients, pharmaceutical intermediates and specialty ingredients leveraging on 24 manufacturing sites, 10 R&D centers and 3,200 employees in 10 countries.

As an integrated player across the value chain - from raw materials to active ingredients and from research and development to industrialization - SEQENS offers a broad portfolio of APIs intermediates and specialty ingredients, develops and industrializes the most demanding molecules, and relies on its ability to innovate, develop and implement the best available technologies. Driven by a culture of excellence and a demonstrated entrepreneurial spirit, but also

strong values such as unity, tenacity, agility and reactivity, our employees are committed to providing more than 1000 customers in the world with the highest level of service and quality while acting ethically in accordance with our strong Environmental, Social and Governance program.

In the pharmaceutical industry, Seqens supports its customers in developing, scaling up and manufacturing drug substances from the pre-clinical phase to the commercial phase. Seqens also offers a large portfolio of APIs and proprietary products.



SCAN ME

### DISCOVER SEQENS PHARMA SOLUTIONS PRODUCTS & SERVICES OFFER

- Custom manufacturing
- Early stage manufacturing
- Intermediates
- Drug delivery & Medical material
- Biocatalysis services



**c.3,200**  
Employees



**>300**  
Research  
scientists & experts  
(130 PhDs)



**10 R&D**  
Centers



**1,000+**  
Clients in more  
than **80** countries



**24**  
Manufacturing Sites  
(13 cGMP sites)

CONTACT

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## SEQENS

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