



**M2i,**

Fine Chemistry expertise  
& equipment presentation

# INTEGRATED SOLUTIONS FOR ALL YOUR PROJECTS

We propose to our clients an integrated partner, from early development to commercial supply of high-value niche fine chemicals, for pharmaceutical and biocontrol industry.

French partner for development & manufacturing in fine chemistry



>80 M€ fundraising



Solid industrial and academic network



x 3 Workforce



22 Patent families



New controlled substance production capacity

8 years of dynamism, growth & innovation to become a global industrial group



## Biocontrol

Pheromones Formulation technology  
Finished product development



## Pharma & Fine Chemistry

Active Pharmaceutical Ingredients,  
Advanced intermediates, Polymers,  
Pheromones

4 sites



GMP production plant  
Salin-de-Giraud



R&D center  
Lacq



Conditioning facility  
Parnac



Headquarter  
Paris

# PHARMA & FINE CHEMISTRY ACTIVITY



1

## Proprietary molecule portfolio

API, intermediates, key building block  
& pheromones

2

## Contract Research

Outsourced research services

3

## Custom Development & Manufacturing

Process development, industrialization  
& production

4

## Consulting/accompaniment

R&D, innovation, key sourcing  
& industrial strategy



# 1 PROPRIETARY MOLECULES PORTFOLIO

GMP Active Pharmaceutical Ingredients



Intermediates & Key building blocks



Pheromones AI & Intermediates



## 2 CRO – Contact Research

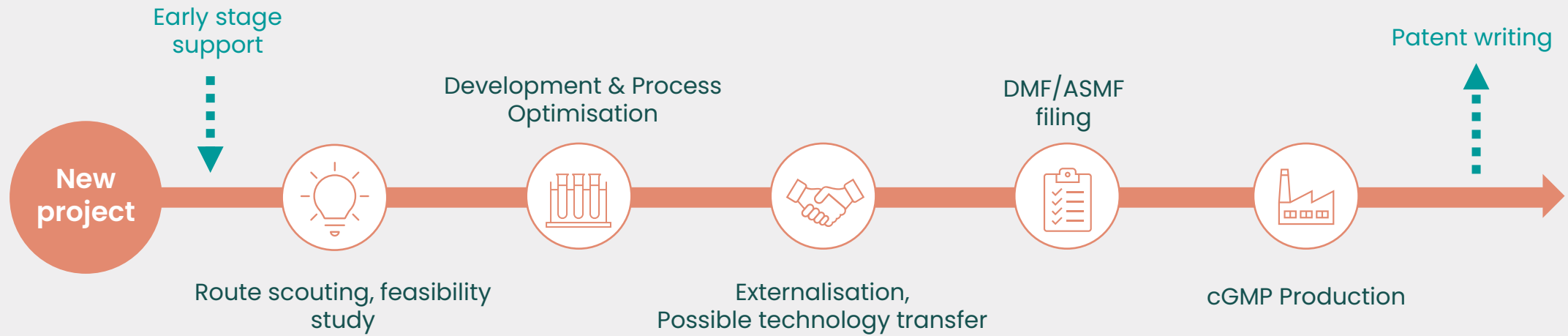
### YOUR OUTSOURCED RESEARCH SERVICE

- Innovation orientated & customer-centric team
- Flexible and adaptable open-ended project management
- Full time equivalent (FTE) basis



# 3 CDMO – Custom Development & Manufacturing

## SOLUTIONS FROM SCOUTING TO COMMERCIAL PRODUCTION



Possibility to start the project at any stage



# 3 CDMO – Custom Development & Manufacturing

**RELIABLE PARTNER**, From early clinical phase up to commercial manufacturing

## Pre-clinical

- **Synthesis route design** and scouting
- Process engineering
- Analytical development
- Industrial cost evaluation
- Industrial raw material sourcing

## Clinical

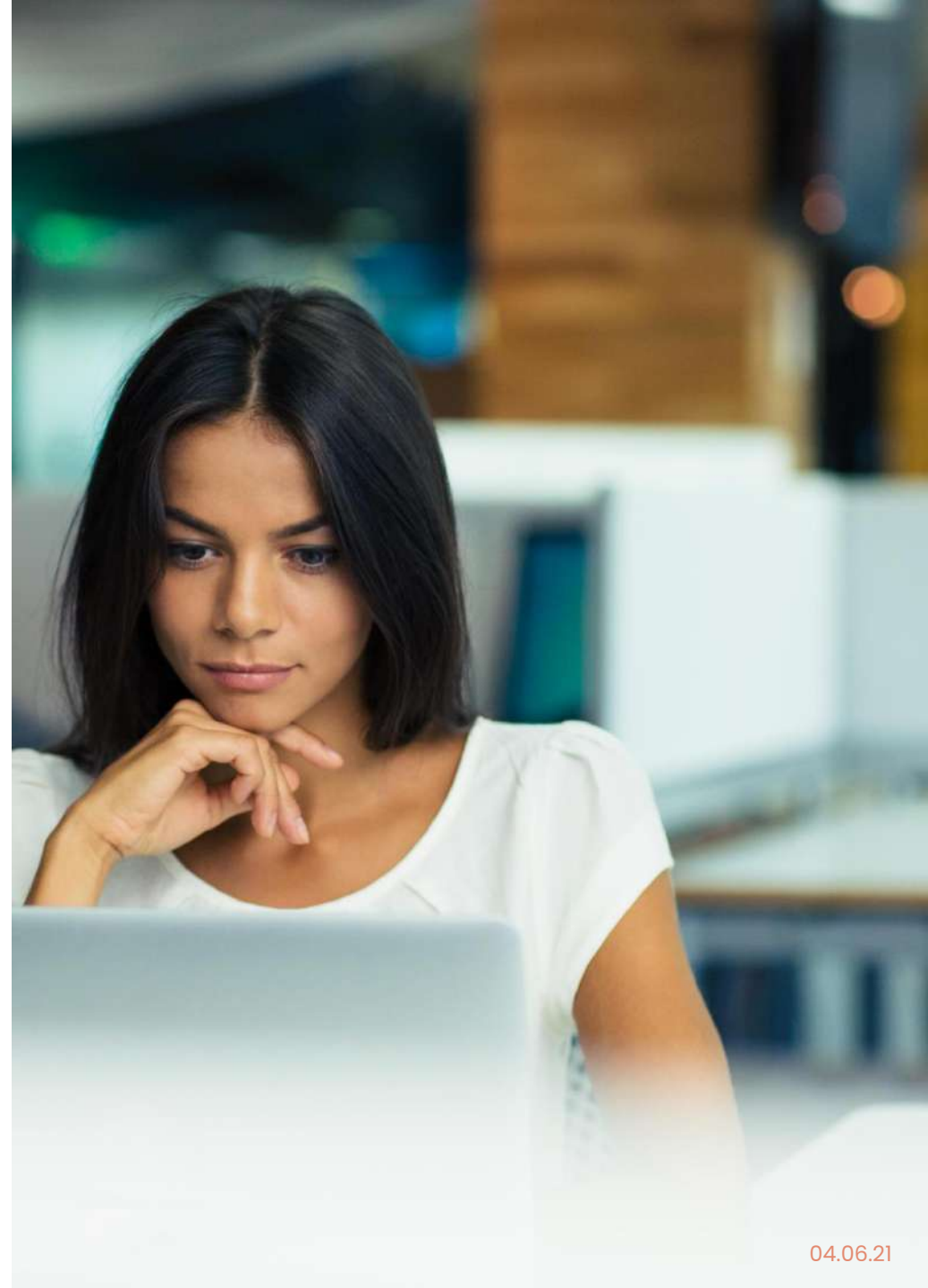
- Chemical process development & optimisation
- Key process parameters study
- **GMP clinical batch production**
- IMP dossier preparation
- Validation of analytical methods
- Forced degradation study

## Commercial

- Manufacturing process validation
- ICH stability program
- **ASMF preparation & filing**
- Quality & Regulatory support
- **Industrial scale cGMP production**
- Continuous improvement
- APIs lifecycle management

## 4 CONSULTING/ACCOMPANIMENT

- **OutSourcing/Smart sourcing**  
Strong network & partnerships
- **Assistance in R&D**  
Experimental plan, bibliographic studies,  
studies on patent exploitation ...
- **Industrial production strategy**
- **Accompaniment in innovation**  
Patent drafting



# FACILITIES





### R&D CENTER in Lacq

- ISO 9001:2015 certified
- Team of 25 people
- Vessels up to 20L



### PRODUCTION PLANT in Salin-de-Giraud

- GMP certified by the French National Agency for Medicines and Health Products Safety (ANSM)
- Team of 70 people
- Vessels up to 3500 L

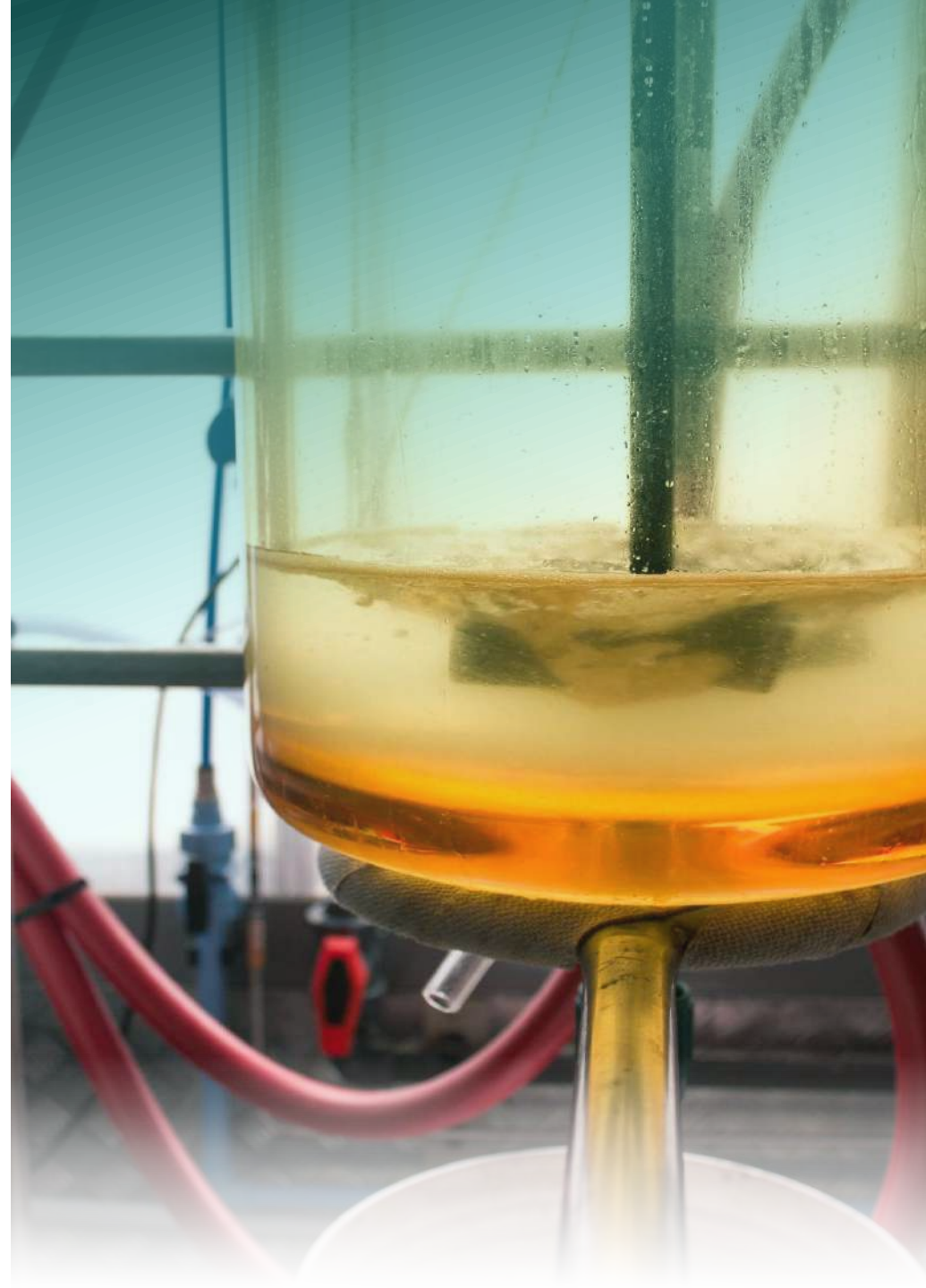


Both R&D center and production plant are approved for Research Tax Credit :

**Crédit d'Impôts Recherche, CIR**

# HISTORICAL TIMELINE

- 2003** - Holis Technologies company creation
- 2012** - Acquisition of Holis Technologies by M2i
- 2015** - Relocation to Chemstart'up center  
- Start of polymer synthesis activity
- 2016** - Obtention of ISO 9001:2015 certification
- 2020** - Premises expansion





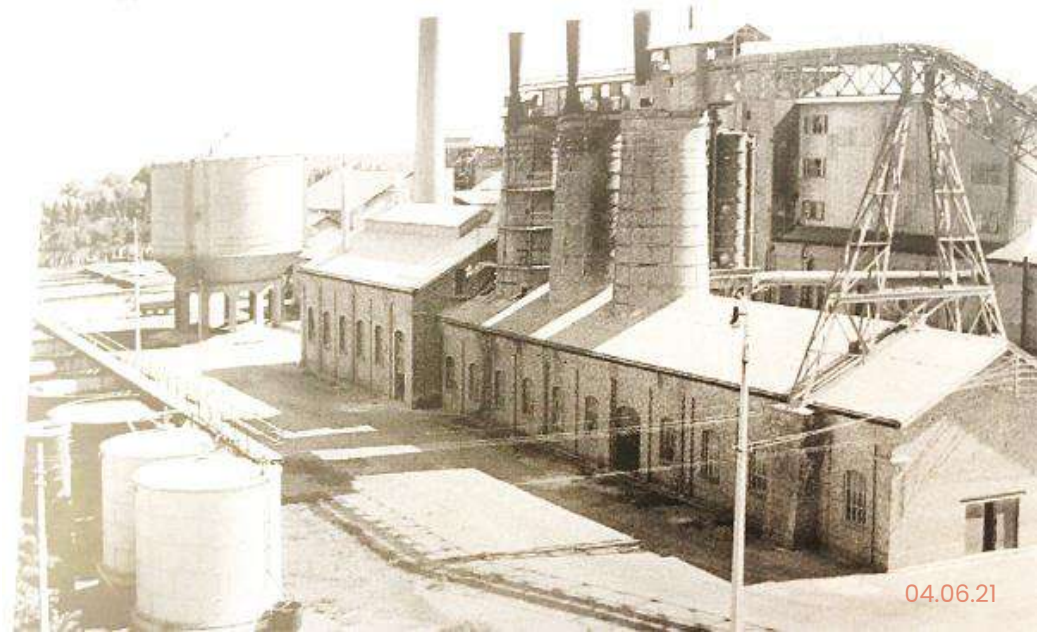
# cGMP FACILITY

## Salin-de-Giraud

- Since **1896**
- Ex Solvay Production plant
- **6** production lines
- Regularly audited

# HISTORICAL TIMELINE

- 1896 - Kick off the Salin-de-Giraud facility by Solvay
- 1981 - Beginning of the Fine Chemistry activities
- 1996 - GMPs productions starts
- 1998 - First afssaps inspection
- 2005 - FDA preapproval inspection
- 2013 - Acquisition of the Salin facility by M2i
- 2018 - Premises expansion
- 2018 - Ansm inspection – 10 GMP APIs



# cGMP MULTIPURPOSE EQUIPMENT

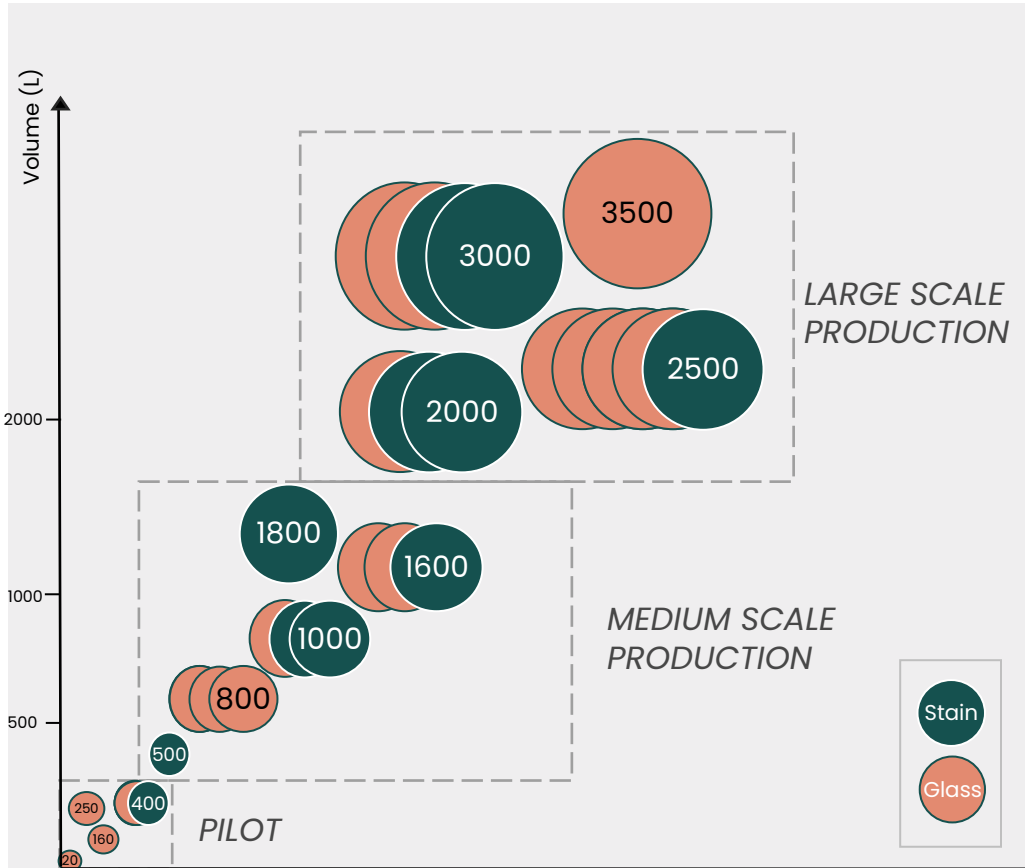
- Vessel capacity : **46 m<sup>3</sup>**
- **27** reactors
- Stainless /glassline
- Volume : [**0,16m<sup>3</sup> / 3,5m<sup>3</sup>**]
- Pressure : [**10 mbars / 4 bars**]
- Temperature : [**-15°C / + 210°C**]
- Monofluidic thermal control
- Anhydrous thermal control (double jacket & condensers)





# cGMP EQUIPMENT from 160 L to 3500 L

PRODUCTION  
PLANT



# KEY DIFFERENTIATORS

## DIFFERENTIATING TECHNOLOGIES

- **Bromine** chemistry associated with cyanation
- **Sulphur** and mercaptan chemistry
- Hydride mediated deprotonation
- High energy POCl<sub>3</sub> chlorination
- Cyclopropane & cyclobutane chemistry
- **Continuous process**

## DIFFERENTIATING PROCESSES

- Multistep synthesis
- **Controlled substance production capacity**
- Integrated CRO-CDMO
- Industrial Proprietary Portfolio
  - ✓ 7 GMP APIs
  - ✓ 8 sensitive Building Blocks and KSM
  - ✓ 9 Pheromones active ingredients and intermediates

# INDUSTRIAL SCALE MAIN REACTIONS

- Alkylation (dimethyl sulfate)
- Amidation
- Bromination ( $\text{Br}_2$ ,  $\text{HBr}$ , ...)
- Chemical resolution
- Chlorination ( $\text{SOCl}_2$ ,  $\text{Cl}_2$ ,  $\text{POCl}_3$ )
- Continuous process
- Cyanation
- Cyclization
- Esterification
- Etherification
- Friedel-Crafts
- Grignard
- Hoffman rearrangement
- Hydrides ( $\text{LiH}$ ,  $\text{NaH}$ ,  $\text{KH}$ )
- Oxidation
- Phase transfer Catalysis
- Reduction ( $\text{NaBH}_4$ ,  $\text{AlLiH}_4$ )
- Saponification
- Sulfuration ( $\text{H}_2\text{S}$ ,  $\text{S}_8$ )



- **Chemistry initiatives Award** – *Innovation and research*
- **Pierre Potier** – *Innovation in chemistry for sustainable development*
- **Double winner of the Ecophyto plan**
- **European Business Award for the Environment** winner
- **French Chemical Society Award** – *Industrial chemistry*
- **3rd International Symposium on Green Chemistry Award**



### L'USINENOUVELLE

M2i Life Sciences named Start-up of the year 2019

### Forbes

Fundraising: French start-ups break records

### L'EXPRESS

M2i replaces pesticides with organic pheromones

### Les Echos Capitalfinance

M2i Life Sciences obtains € 60 million from five investors

FEATURED IN...





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**THANK YOU**

M2i, Lead the Change