

# API Development and Manufacturing

Aurigene Pharmaceutical Services has a legacy of +20 years in developing and manufacturing compounds under cGMP. Our manufacturing plants are spread across 3 continents with facilities in India, UK, and Mexico.

- (y) /AurigenePharma
- (in) /aurigenepharmaceuticalservices
- www.aurigeneservices.com
- 🖂 contactapsl@aurigeneservices.com
- Worth America: +1 617 821 0595
  European Union: +32 471 808710

AurigenePharmaceuticalServices

# CGMP manufacturing scale at in-house manufacturing sites



- Kilo lab: 50 to 630 L
- Commercial: 500 to 10,000 L

#### **Capacity of Production**

- Kilo lab: 1 to 10 Kg
- Commercial: 15 to 500 Kg

#### MOC

 All glass set-up, Mild Steel Glass Lined (MSGL), stainless steel (SS316) and Hastelloy

#### **Niche reactions**

- Cryogenicreactor size (2,000 to 11,000 L)
- Reaction temperature up to -80°C
- Hydrogenator capacity (20 to 500 L) at 4 to 55 bar

## **Downstream Process**

#### Centrifuge

#### Nustche Filters

- 12", 36" and 48"
- 25 L to 1 KL

• 0.1 m<sup>2</sup> to 5.0 m<sup>2</sup>

Agitated Nustche Filter Dryer (ANFD)

#### **Spray Dryers**

#### **Micronization**

- 5 to 50 Kg/Hr
- Development (M50)
- Manufacturing (M100 to M2000)

All manufacturing facilities are equipped with particle size regulating equipment including multimill, air jet mill or micronizer, sifter and blenders. Dedicated unit for micronization of steroid products.

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## Core technologies development and manufacturing features

### Steroid

#### Development/PoC

- Quantity: 10 to 50 g
- Capacity: Lab scale

#### **Early Phase**

- Quantity: 1 to 3 kg
- Capacity: 20 to 189 L

#### Commercial

- Quantity: 25 to 100 Kg
- Capacity: Up to 7000 L

#### Pre-clinical/NGMP

- Quantity: 100 to 250 g
- Capacity: 20 to 50 L

#### Late Phase

- Quantity: 5 to 10 Kg
- Capacity: Up to 7000L

## HPAPI (OEB 5/OEL < 1 ug/m<sup>3</sup> for HPAPIs and cytototoxics)

#### Development/PoC

- Quantity: 10 to 50 g
- Capacity: Lab scale

#### **Early Phase**

- Quantity: 1 to 3 kg
- Capacity: ~20 to 2,000 L

#### Commercial

- Quantity: 10 to 15 Kg
- Capacity: 160 to 2000 L

#### Pre-clinical/NGMP

- Quantity: 100 to 250 g
- Capacity: Lab scale

#### Late Phase

- Quantity: 5 to 10 Kg
- Capacity: 160 to 2000L

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## PEGylation

#### Development/PoC

- Quantity: 10 to 50 g
- Capacity: Lab scale

#### **Early Phase**

- Quantity: 25 to 50 kg
- Capacity: 50 to 3,000 L

#### Commercial

- Quantity: 500 to 1000 Kg
- Capacity: 50 to 3000 L

### Carbohydrate

#### Development/PoC

- Quantity: Up to 100 g/batch
- Capacity: Lab scale

#### Pre-clinical/NGMP

- Quantity: 250 to 500 g
- Capacity: Lab scale

#### Late Phase

- Quantity: 100 to 250 Kg
- Capacity: 50 to 3000 L

#### Commercial

- Quantity: Upto ~30 Kg/batch
- Capacity: 60 to 250 L

Purification: GPC technique, size -exclusion chromatography, SAX purification, Ion-exchange chromatography



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# **Analytical Equipment**

#### Chromatography

- HPLC (UV, PDA, ELSD&RI detectors with Empower 3 software)
- GC (FID, TCD, ECD detectors with Empower 3 software)
- UPLC instruments

#### Spectroscopy and Thermal analysis

- UV-Vis, IR, NMR spectroscopy and photometers
- DSC and TGA
- Surface area analyzers

# **Sustainability**

#### Characterization

- Mass spectrometer (LC-MS & HR-MS)
- AB SCIEX 4500 QQQ instrument
- Waters UPLC with LCT premier XE time of flight detector
- Agilent HPLC with 6410 triple quad mass detector
- Agilent GC with 5975C EI/CI Inert XL detector

Sustainability is one of our core values, and we continue to build on our goals aligned with global standards. Our work in the field of sustainability was recognized by

- DJSI (Dow Jones Sustainability Indices)
- FTSE4Good Index
- CDP (Carbon Disclosure Project)
- S&P BSE Carbonex

- S&P BSE Greenex
- Bloomberg Gender-Equality Index
- CII-SR EHS Excellence Silver Award
- PSCI Audited

# Regulatory

Our development center is US FDA audited facility and our manufacturing plants are regularly audited by US FDA, EDQM, KFDA (Korea), MHRA (UK), PMDA, SFDA, CDSCO, DMA, TGA, WHO GMP and COFEPRIS.

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