



Phyton Biotech



Upstream Capabilities

We provide our partners a unique process for commercial manufacturing and development of Active Pharmaceutical Ingredients via plant cell fermentation and other expression systems.

Large-Scale Fermentation

- 880,000-liter-per-year production capacity for taxanes
- Concentrated to 600 kg of primary taxanes
- Converts to 300 kg to 400 kg of paclitaxel or docetaxel
- HPAPI handling
- cGMP-compliant process
- Fermentation trains
 - 2 prefermentation areas (one BSL 1 classified)
 - 9 fermenters (55 liters to 75,000 liters)
 - 4 fermenters (75 liters to 7,500 liters) (BSL 1 classified)
- Strain bank storage

Process Development

- Twelve parallel 16-liter fermenters (in BSL 1 area)
- Multiple incubator cabinets for shake flask cultivations

- Miniaturized cultivation systems in well plate format for screening experiments
- Cryopreservation and cell bank operation
- Product isolation and purification (resin adsorption, biomass separation, static and dynamic filtration processes)

cGMP-Compliant Analytics and Quality Control

- Comprehensive set of optimized IPCs
- Analytical method development
- Production control experiments

Markets

- Pharmaceuticals
- Biopharmaceuticals
- Cosmeceuticals
- Nutraceuticals

Downstream Capabilities

The API production group has nine years of experience in commercial manufacturing and production of semi-synthetic taxanes. The intellectual property behind our production chemistry is well-differentiated from side-chain attachment chemistries. It provides our customers with paclitaxel and docetaxel API produced through a highly efficient semi-synthetic pathway. We are the only supplier of semi-synthetic taxanes independent of tree plantations.

Large-Scale API Production

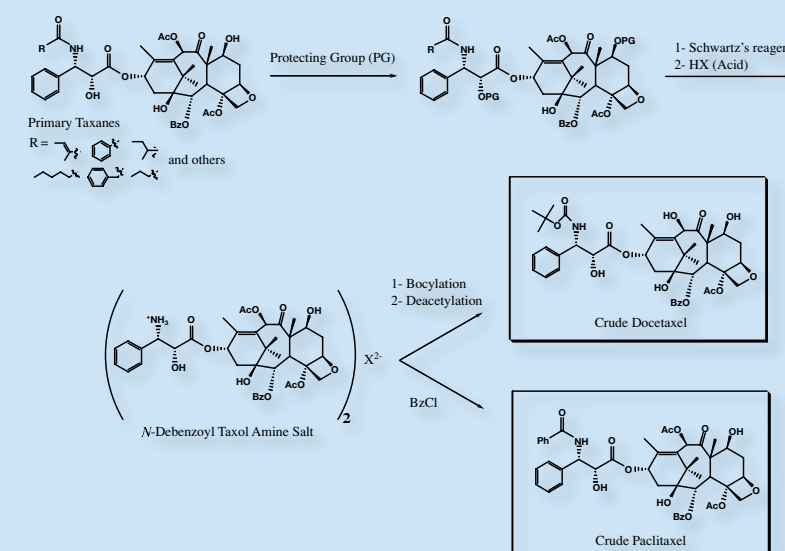
- 100 – 200 kg/year production capacity for API taxanes
- cGMP-compliant process at Vancouver, BC, Canada plant
- Additional API production in Shanghai, China
- CEP and DMF for commercial supply of paclitaxel EP/USP
- Proprietary and non-infringing source for docetaxel API

Patented Semi-Synthetic Chemistry

- Conversion of primary taxanes to paclitaxel and docetaxel

Markets

- Pharmaceuticals
- Biopharmaceuticals
- Medical Device



The New Phyton Biotech



Phyton Biotech

Capacity, Reliability, and Quality in Taxane API Supply • Truly differentiated and patented technology for paclitaxel and docetaxel