



Phyton Biotech

**Specialty Fermentation Solutions**

# Commercial Manufacturing via PCF®

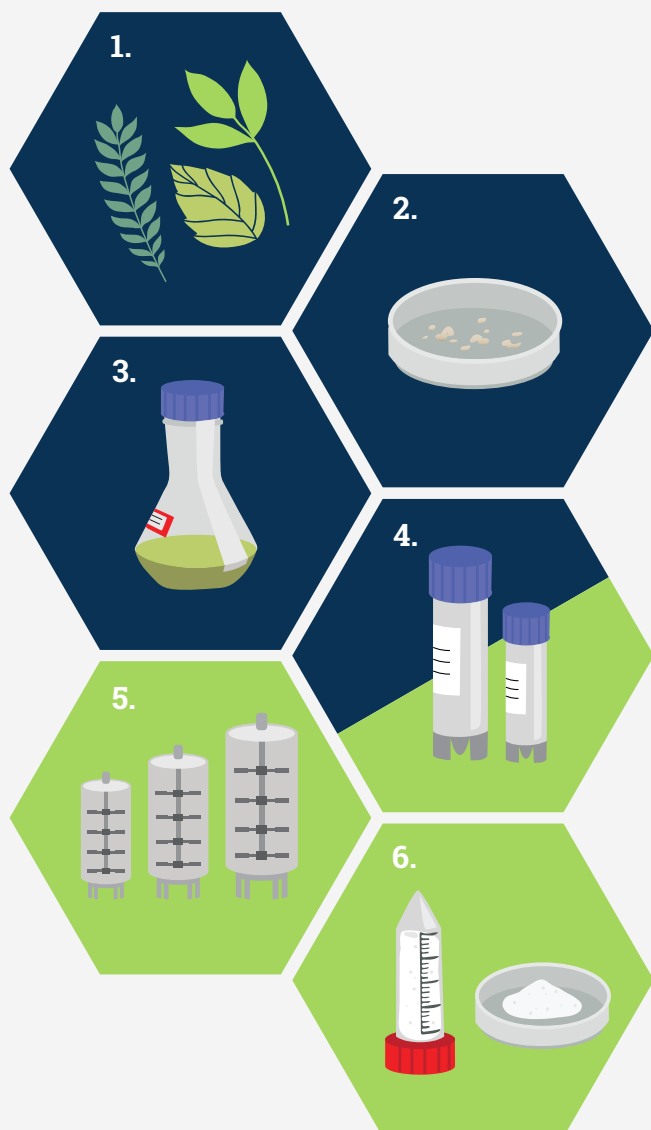


## Award-Winning “Green Chemistry” Process Leader

Phyton Biotech is the largest global supplier of Plant Cell Fermentation (PCF®)-derived **Paclitaxel & Docetaxel** API. Our facility has >200,000L installed fermentation capacity and ability to process commercial quantities of active ingredients. We have transformed plant cell culture technology and have developed a commercially scalable, reproducible, “green” (PCF®) process for the production of high-value phytochemicals, such as Paclitaxel and Docetaxel. Phyton offers a time, risk and cost-balanced pathway to commercially viable production processes, overcoming limitations and drawbacks often experienced with traditional plant extraction and chemical synthesis. With certified GMP facilities in Germany and Canada, Phyton Biotech has a successful track record of developing and implementing innovative fermentation derived active ingredients for clients around the world.

### PCF® Advantage:

- Independent from plant harvest
- Clean technology
- Consistent high quality
- Complete control of supply chain
- Reliability
- Environmental sustainability
- Scalable capacity
- Cost competitive



### Cell Line Development

- 1. Plant Sourcing**  
Source best starting material without destroying nature
- 2. Cell Line Development**  
Use the best natural cell factories from the whole plant
- 3. Cell Culture Development**  
Provide the best culture conditions to allow highest production performance of cells

### Product Manufacturing

- 4. Cell Bank**  
One cryo vial as starting material serves for creating tons of product
- 5. Upstream Fermentation**  
Eliminates supply constraints
- 6. Product Recovery & Purification**  
From PCF® biomass to enriched extracts or purified APIs

# Specialty Fermentation Solutions



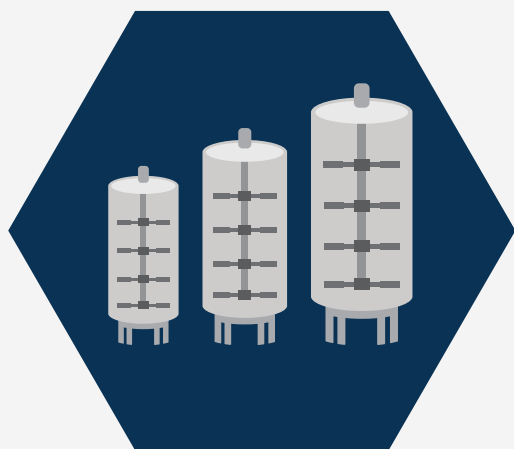
## CDMO Services for Fermentation Derived Active Ingredients

Phyton Biotech offers comprehensive product/process development and commercial manufacturing services for high-value active ingredients from a range of ferment sources.






Our teams in Germany and Canada are uniquely qualified to carry out a full development program for fermentation-based molecules, extracts and recombinant products for use in a range of industries.

Phyton Biotech is known globally for excellence, innovation, quality, reliability and cutting-edge technological solutions.

-  **Fermentation from bench to commercial scale (>200,000L installed fermentation capacity)**
-  **Customized fermentation solutions for Pharmaceutical, Traditional Herbal Medicine, Cosmetic, Food & Nutrition industries**
-  **GMP quality from pilot to commercial scale**
-  **25 years' highly specialized experience in process development and commercial production**
-  **German and Canadian technological excellence at its best**









## Upstream Downstream Process Development and Scale-Up

-  **Pilot Fermentation Facility** - 16L to 7500L
-  **Small Molecule Purification Capabilities**
-  **Semi-Synthesis** - Perform complex chemistry on isolated active ingredients from fermentation
-  **Pilot Scale Protein Purification**
-  **Analytical Methods Development**



## Commercial Production and Global Distribution

-  **Fermentation Facility** - 1 x 45,000L and 2 x 75,000L Production tanks
-  **cGMP Manufacturing** - FDA & EDQM-inspected facilities
-  **Full Project Management and Support**
-  **Analytical and Regulatory Support**
-  **Metric Tonne Output Capability for Active Ingredients**
-  **Expandable Facility to add Tailored Downstream Processing Suites**





## Our Global Offices

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### **Phyton Biotech Canada**

1503 Cliveden Avenue  
Delta, British Columbia  
Canada, V3M 6P7  
+1.604.777.2340

### **Phyton Biotech Germany**

Alter Postweg 1  
22926 Ahrensburg  
Germany  
+49.4102.49060

## Sales & Customer Service

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### **For API inquiries:**

[api@phytonbiotech.com](mailto:api@phytonbiotech.com)

### **For PCF® inquiries:**

[pcf@phytonbiotech.com](mailto:pcf@phytonbiotech.com)

### **For CDMO inquiries:**

[cdmo@phytonbiotech.com](mailto:cdmo@phytonbiotech.com)



# Phyton Biotech

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[www.phytonbiotech.com](http://www.phytonbiotech.com)