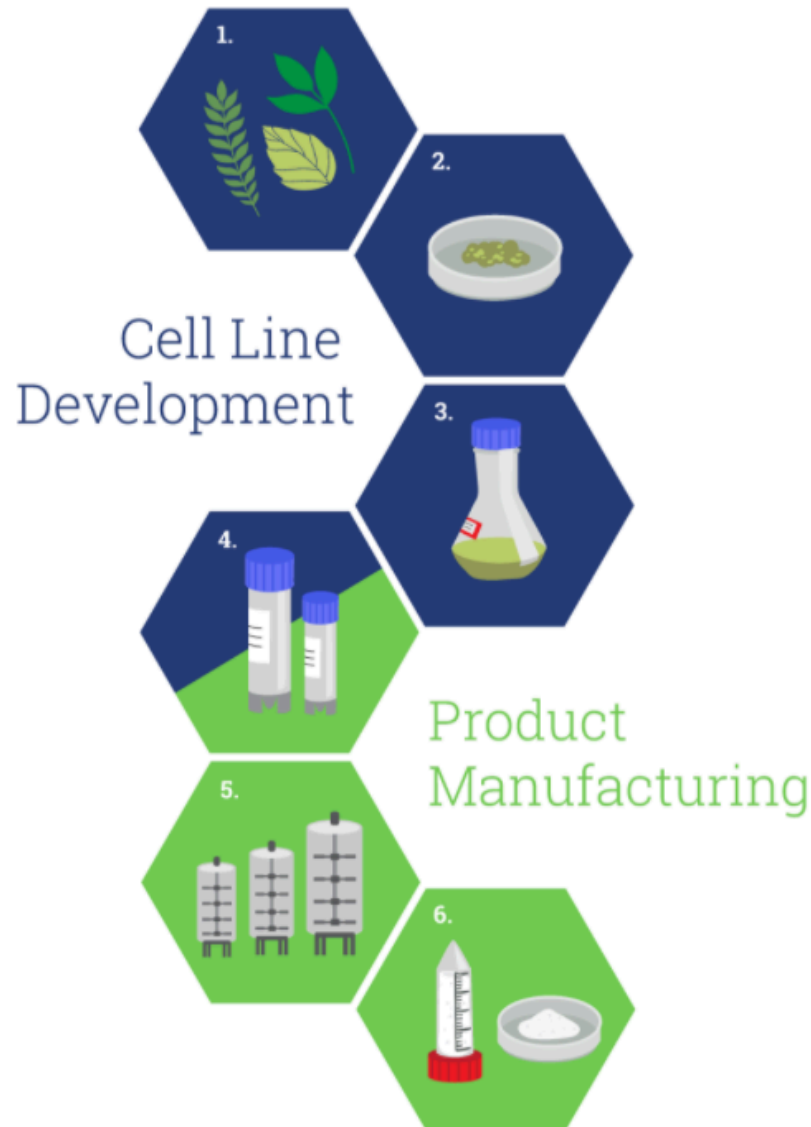


# Producing Phytochemicals with Plant Cell Fermentation



## 1. Plant sourcing

- Diversity of plant material
- Selection of favorable populations
- Eco-friendly

Source best starting material without destroying nature

## 2. Cell line development

- Capture plant diversity in cell lines
- Select the best and most robust natural cell factories
- High producing cell lines

Use the best natural cell factories from the whole plant

## 3. Cell culture development

- High product titer
- Metabolite profile refinement
- Process development
- Quality by Design

Provide the best culture conditions to allow highest production performance of cells

## 4. Cell bank

- Cryopreservation
- Secure cell line diversity
- Cell bank for stable long term supply

One viable cell as starting material serves for creating tonnes of product

## 5. Upstream fermentation

- R&D, pilot and commercial scale
- Scalable to 75,000 L bioreactors
- Fully controlled / cGMP

Eliminates supply constraints

## 6. Product recovery & purification

- From enriched extracts to purified APIs
- From kilograms to tonnes of product
- Fully controlled / cGMP
- Chromatography/Crystallization

Design quality and safety into products and processes