

# VTU Technology GmbH

## *Pichia pastoris* Protein Expression Excellence

### COMPANY OVERVIEW

**Company name:** VTU Technology GmbH

**Headquarter:** Graz, Austria

**Founded:** 2008

**Industry Sector:** Proteins/Biotechnology  
(pharma, diagnostics, food & feed,  
chemical, agro and other industries)

### DEVELOPMENT ACTIVITIES

- Production strain generation
- Upstream process development
- Downstream processes development
- Establishment of analytical procedures
- Production of protein samples

### OUTLINE

VTU Technology is a leading contract research and development company located in Austria, providing services for the fast track generation of high performance *Pichia pastoris* protein production strains and economically viable protein production processes for biopharmaceuticals and other proteins.

### ACHIEVEMENTS

Judging from numerous completed and ongoing development projects, protein production processes developed in VTU's labs have been shown to be robust and scalable facilitating sound technology transfer and straightforward implementation in large scale production facilities.

Exclusive Proprietary Technologies  
Profound Experience  
Competitive Production Processes



To date several VTU customers have licensed and successfully scaled-up such processes for the manufacture of recombinant proteins with VTU's *Pichia* system to volumes ranging from several hundred to more than 10,000 L.

#### TRACK RECORD

VTU has established a broad range of tools and know-how for the generation of high performance *Pichia* processes. Exclusive proprietary technologies and profound experience of the VTU team lead to competitive production processes for a wide range of recombinant proteins including

- serum proteins
- cytokines and growth factors
- Fc & HSA fusion proteins
- Fabs & Ab derived fragments
- scaffold proteins
- vaccines

#### BROADEST *PICHIA PASTORIS* TECHNOLOGY PLATFORM

VTU's exclusive highly approved 1<sup>st</sup> generation library of synthetic methanol-inducible PAOX1 promoter variants forms the core of the company's cutting-edge in-house *Pichia pastoris* toolbox enabling high-level protein production and secretion of more than 20 g/L.

This library was complemented with groundbreaking and unique methanol-free 2<sup>nd</sup> generation PAOX1 promoter variants, facilitating strong expression even with just glycerol or glucose as the sole carbon source clearly outperforming conventional promoter systems.

In addition to abolishing toxic and explosive methanol as a substrate while retaining high expression levels of up to 15 g/L (e.g. for a cellulose hydrolyzing enzyme), major advantages of this new technology are reduced oxygen consumption and therefore significantly reduced heat production and cooling effort in bioreactor cultivation as well as a significant potential to reduce process time and cost of goods.

#### The versatility and effectiveness of VTU's *Pichia* system is further underlined by

- a set of proprietary expression enhancing helper factors
- several platform strains with different genetic backgrounds
- elaborated cloning and transformation protocols
- a high-throughput microscale screening and cultivation regime
- effective fermentation protocols

Meanwhile, the *Pichia pastoris* expression system has been established as a proven, safe (GRAS) and highly competitive expression system with strong secretory capacities while secreting only low amounts of endogenous proteins. Today, a large number of recombinant protein products on the market (pharma and non-pharma applications) are produced in *Pichia pastoris*.



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