

Pichia pastoris Protein Expression Services - AOX1 MeOH-free

VTU's exclusive highly approved 1st 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.

Notably, this library was complemented with groundbreaking and unique methanol-free 2nd 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.

Key features

- Product yields of up to 15 g/L of secreted protein
- Glycerol or glucose as the sole carbon source
- Significantly reduced heat formation and cooling demand at large scale
- Safe and economically viable production processes

Exclusive Proprietary Technologies Profound Experience Competitive Production Processes

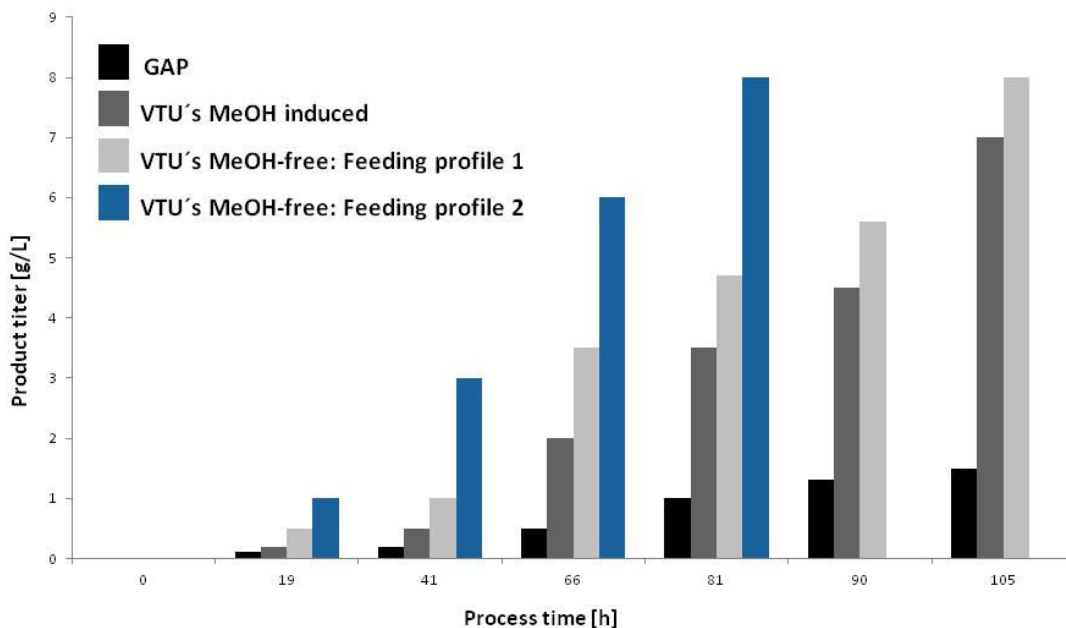


Tunable AOX1 promoter library - different regulatory properties

VTU's highly proven *Pichia pastoris* expression toolbox is characterized by a large number of exclusive AOX1 promoter variants for proper fine-tuning of gene expression by selecting the perfect match of the respective promoter variant and a given target gene.

A subset of VTU's AOX1 promoter library has been found to elicit high productivities already during the glycerol-based derepression phase obviating the initiation of methanol dosing for induction, thus allowing for efficient methanol-free PAOX1 controlled production of recombinant proteins!

Elaborated fermentation and feeding strategies have been developed by VTU to further boost volumetric productivity by reducing the process time while maintaining final product concentrations.



Time course of accumulation of recombinant target protein in bioreactors in both a typical methanol-induced and methanol-free process (with two different feeding strategies) controlled by VTU AOX1 promoter variants in comparison with constitutive expression controlled by the GAP-promoter.

"VTU Technology is the only company worldwide offering *Pichia pastoris* methanol-free PAOX1 controlled production processes with unmatched product yields, short development times and highest quality standards."



Contact

Dr. Thomas Purkarthofer
Head of Business Development
VTU Technology GmbH
Parking 18
8074 Grambach/ Graz, Austria
T: +43 316 4009-4017
thomas.purkarthofer@vtu.com