



bio ingenium

# The protein- expression specialists

Bioingenium is a biotechnology firm that helps companies to scale up and develop bioprocesses to manufacture biopharmaceuticals with new proteins for human and animal health.



## SERVICES WE OFFER YOUR COMPANY

- Recombinant protein expression
- Fermentation process development
- Purification process development
- Process scale up and transference



# OUR TECHNOLOGY PLATFORMS



Bacterial expression system

E. coli system: high versatility and productivity

- Multiple resistance markers.
- Multiple promoters based on different inductions systems
- Multiple strains.
- Fermentation process development



Mammalian expression system

HEK293 and CHO.

- Transient transfection
- Stable cell lines.
- Production of recombinant antibodies.
- GMP banked cell lines.



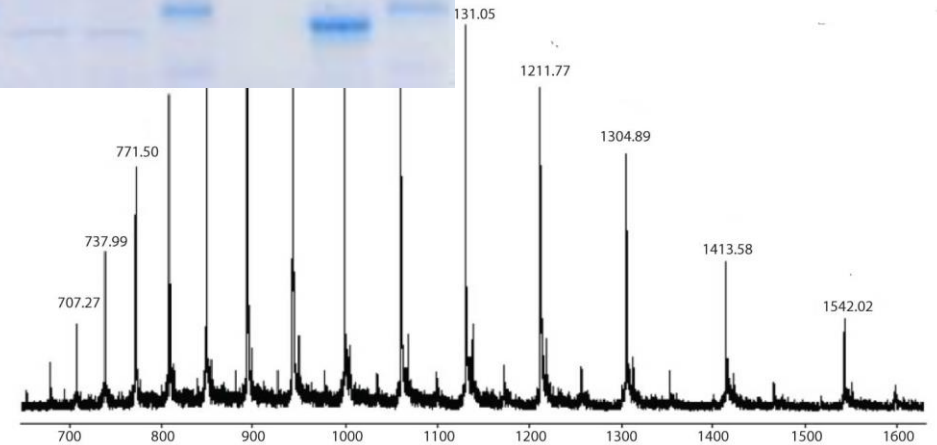
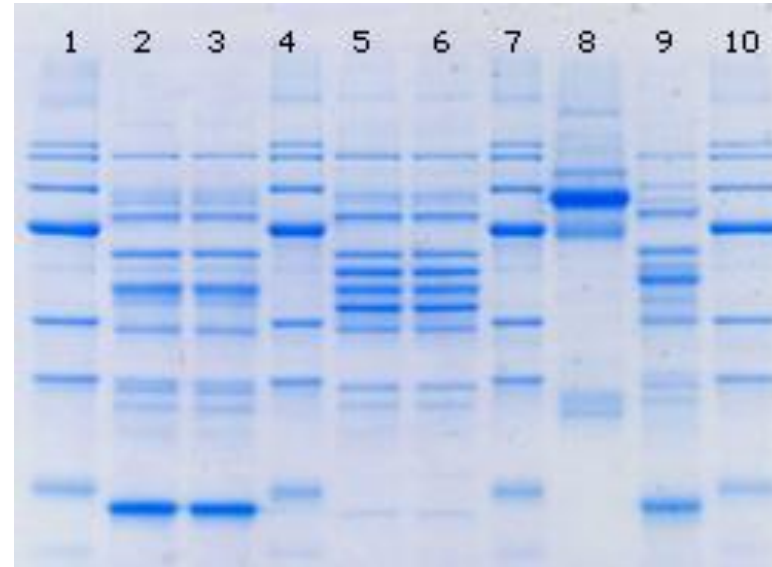
Yeast expression system

P. pastoris system: high yield and low productions costs for human proteins.

- Removable resistance markers genes
- Inducible AOX1 and constitutive GAP promoter
- Multi-copy vectors.
- Improved strains by co-expression of chaperones.
- Fermentation process development .
- ≥ 20 papers published.

# ANALYTICAL METHOD DEVELOPMENT

- SDS-PAGE
- Western Blot
- Aggregation, particle size (DLS)
- Composition and quantification (HPLC)
- Molecular weight (MALDI-TOF)
- Quantification (MS, ELISA)
- Identification, peptide mapping
- Endotoxin levels (LAL Test)
- Host cell protein determination
- Enzyme activity
- Cell based activity assays



# FERMENTATION PROCESS DEVELOPMENT

- 20 years of experience in *E. coli* and *Pichia pastoris* fermentation. Increase productivity by 100-fold.
- Fed-batch fermentations may achieve  $\geq 300$  OD biomass and g/L level protein production.
- Proprietary robust and scalable processes.
- Tailor made processes, adapted to economy and customer facilities.

5 liters fermentor



50 liters fermentor



# PROTEIN PURIFICATION DEVELOPMENT

- DSP is critical for the process economy.
- Use of Design of Experiments (DoE) software.
- Classical multi-step purification IEX, HIC, SEC or affinity purifications.
- Scalable processes. From 1 ml to 1000 mL columns.



# CONTRACT RESEARCH PROJECTS

## Proof of concept projects

- Production of mg amounts of protein for feasibility studies.

## Process development projects

- Development of completed production processes
- Strain and process transference to customer



Contact us

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