TargetEx

➜ RECOMBINANT PROTEIN EXPRESSION

➜ XpressXpert™

XpressXpert™ is a comprehensive modular protein expression service which delivers purified recombinant proteins according to client's needs. For the production of recombinant proteins we have a well-equipped molecular biology laboratory, with bacterial and yeast protein expression units, mammalian and insect cell culture laboratories. We are equipped with a protein purification platform as well.

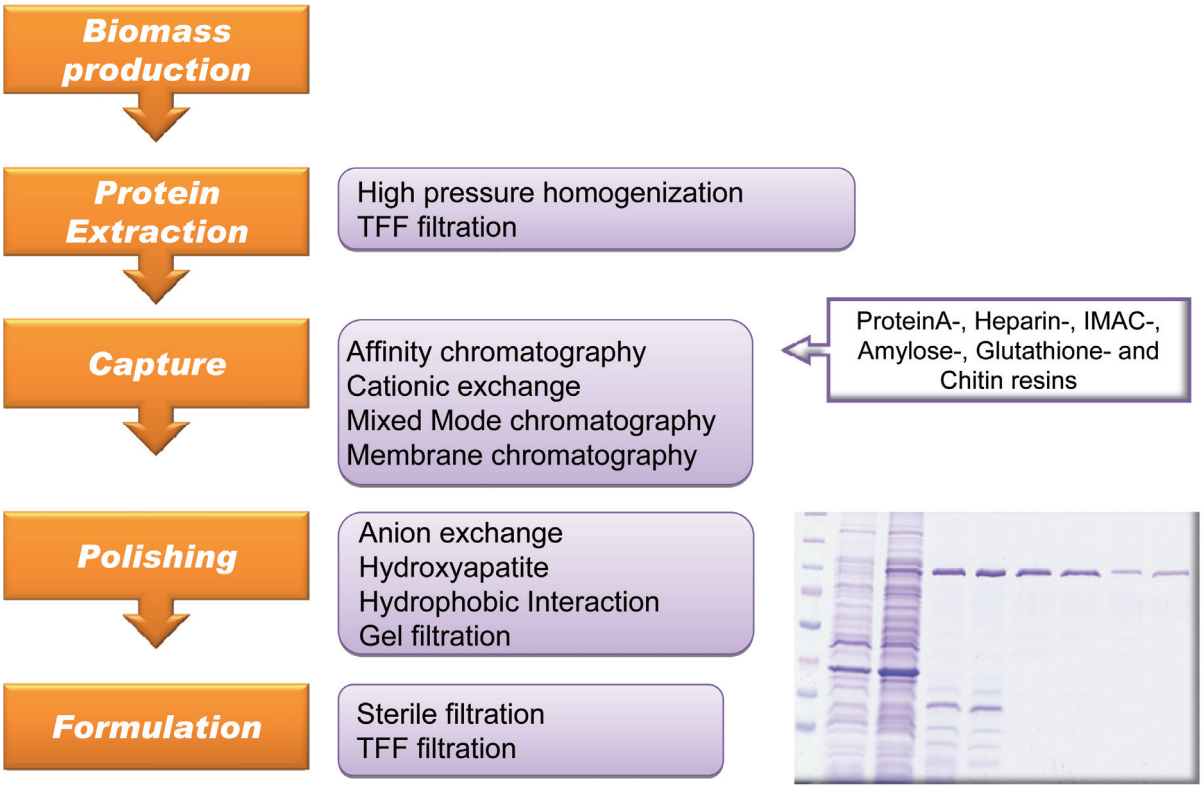
➜ Technology Platform

There is particular challenge to recover the active conformation of a protein after completing the expression. Selection of the most appropriate technology is the solution. TargetEx has multi-year experience working with 'troublesome' proteins and the art is in choosing the right expression system and designing the appropriate expression construct. TargetEx also offers services for affinity-tagged and non-tagged native proteins from small scale (evaluation the protein quality) to laboratory scale expression. Up-scalable purification process development (up to 1 g) could meet the strict quality requirements of the clients. Extensive biophysical characterization of the expressed and/or refolded proteins is also provided. Purification is available for process related or product related impurities.

Quality Control/Protein Analytics Service

The following quality controls are available to confirm the proper folding/structure, purity and functionality of the proteins: non-reducing SDS-PAGE, Mass Spectrometry identification of the protein, High Performance Size Exclusion Chromatography, Differential Scanning Calorimetry, Circular Dichroism, Dynamic Light Scattering, Surface Plasmon Resonance, Quartz Crystal Microbalance, receptor ligand or protein binding assay and functional tests specific for a given protein.

➜ Protein Purification Workflow



TargetEx

➜ *E. coli* expression

- Design of the expression construct (codon optimization, choosing the right tag for the fusion protein if required)
- Subcloning of the synthesized gene
- Small scale expression in shake flasks (to test and optimize expression and solubility)
- In the case of inclusion body formation we use our RefoldAll technology to prepare active soluble protein.

  Non-exclusive examples:
  - TAQ polymerase
  - Chicken AnnexinV
  - Gelsolin
  - CD34

➜ *Pichia pastoris* expression

- Codon optimization might be necessary for sufficient expression
- Intracellular or extracellular expression vectors depending on the protein of choice
- Yeast strains with multicopy insertion of the gene of interest can be selected by qPCR
- Small scale parallel protein expression for selecting the best producing clones
- The expression level of the protein can be increased further using fermentation

  Non-exclusive examples:
  - C1 inhibitor

➜ Baculovirus expression

- Design of the expression construct (codon optimization, choosing the right tag for the fusion protein if required)
- Subcloning of the synthesized gene into transfer vector
- Recombinant virus generation
- Expression optimization

  Non-exclusive examples:
  - Phosphodiesterases

➜ Mammalian expression

- Design of the expression construct (codon optimization, choosing the right tag for the fusion protein if required)
- Subcloning of the synthesized gene
- Evaluation of the recombinant protein using transient expression
- Selection of stable transformed cell line

  Non-exclusive examples:
  - GPCRs (e.g. 5HT6, 5HT7, CB1, CB2, MCH)

➜ Reference:

Beinrohr L, Harmat V, Dobó J, **Lőrincz Z**, Gál P, Závodszky P. 2007. C1 inhibitor serpin domain structure reveals the likely mechanism of heparin potentiation and conformational disease. *J Biol Chem* 282 (29), 21100-9

➜ Contact:

Different strategies and purification schemes will be custom designed for each protein. Please contact Sándor Cseh, CEO, CSEH@TARGETEX.COM, for a proposal.