



Service package 1: Protein production

SP1

Protein production

In SP1 NorStruct offers unique opportunities for subcloning, small and pilot scale expressions (up to 15 L) and purification, in addition to protein expression optimization and refolding.

The subcloning, small scale expression and purification using *E. coli* as expression host will be performed in high throughput format. Expression will also be offered using *Pichia pastoris* as expression host. The customer can select between N- and C-terminal His-tag. Expression of target proteins will be verified by SDS-PAGE and MS.



Protein expression hosts

The standard package includes:

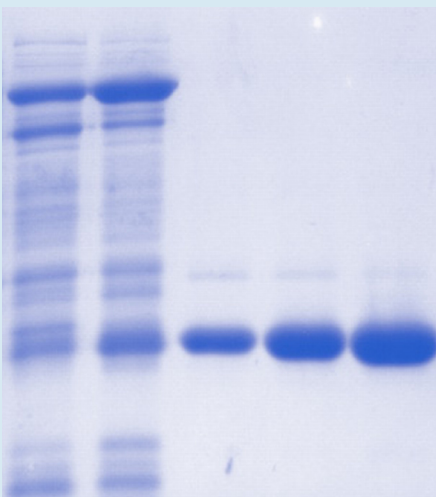
- Cloning into expression vectors
- Small scale expression in 3 *E. coli* strains
- Purification using spin columns
- Medium scale (1 L) or pilot scale in fermenter followed by affinity chromatography purification

Alternatively the gene can be cloned and integrated into the genomic DNA of *P. pastoris* by homologous recombination. Five positive clones will be selected for small scale expression and purification. Pilot scale expression will be performed in a fermenter followed by affinity chromatography purification.

Summary NorStruct Services

NorStruct will continue to offer state of the art services and collaboration in structural biology techniques to the Norwegian research community. High quality expertise and services will be assured via in-house research projects and national and international partnerships.

The services will be organized in three different service packages (SPs), whereby the services ordered are tailored to the customer's specific needs. The three SPs will be "Protein production" (SP1), "Structure determination" (SP2), and "Drug discovery and design" (SP3).



Protein expression optimization in *E. coli*

If no expression or insoluble protein is detected using vectors and strains in the standard package, customers can select the optimization package including:

- 48 different expression conditions: 8 expression vectors or 8 constructs, 3 expression strains, 2 temperatures (20°C, 37°C)
- Optimization of culture media for expression is optional.

SP1

Subcloning, small-scale expression and purification
Large scale expression and purification
Protein expression optimization and refolding

SP2

Crystallization
Quality control and buffer optimization
Data collection and structure determination

SP3

Protein ligand complexes
Molecular modeling/docking and virtual screening
Protein-ligand thermodynamic studies

Protein refolding

A protein refolding package will also be available. Here commercially available kits with at least 96 different conditions will be used for refolding trials.

Customers should provide a biological activity assay which will help evaluating the refolding results.

