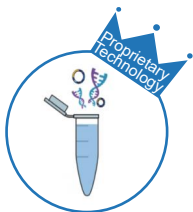


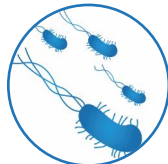
# Protein Expression and Purification

GenCefe Biotech's protein production team is composed of technical experts with years of experience in protein expression and purification. With stable production capacity and in-house R&D capabilities, we can provide one-stop solutions from codon optimization, gene synthesis, to protein expression and purification.

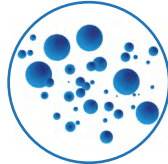
## Comprehensive Expression Systems



Cell-Free



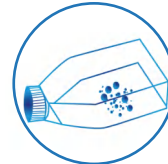
Bacterial



Yeast



Insect Cell



Mammalian Cell

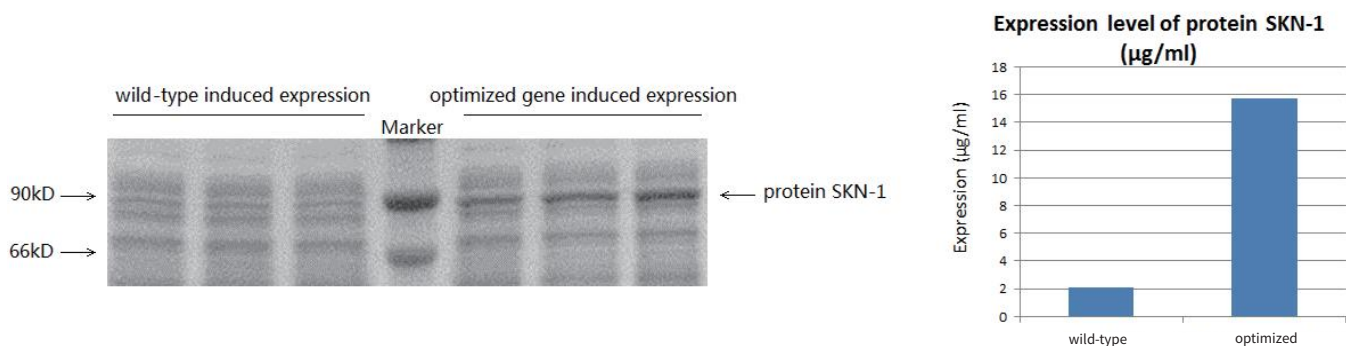
## GenCefe Gene-to-Protein Solutions



## Case Study

### 7.4-Fold increase in eukaryotic protein expression in *E. coli*

The three clones containing optimized SKN-1 gene showed a 6-fold, 7.2-fold, and 9-fold increase separately, with an average of 7.4-fold increase, over the clones containing wild-type.



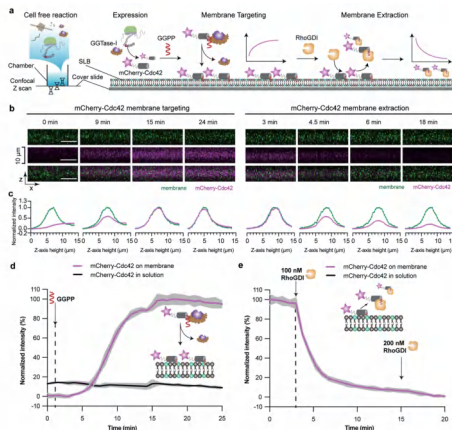
**Figure:** Left: Protein electrophoresis of bacteria lysate expressing wild-type and optimized SKN-1 gene. Right: protein quantitation by Western Blot.

## Cell-Free Protein Expression

Cell-Free Protein Synthesis (CFPS) is an in vitro protein expression technology. Due to the advantages of simple genetic background, ease of use, and minimal cell interference, cell-free protein expression has been used in small and medium-scale protein expression, high-throughput expression screening, membrane protein expression, toxic protein expression, etc.

- GenCefe CFPS platform is led by world-renowned CFPS expert Dr. Lei Kai, he holds 28 patents and has published more than 40 papers in related fields.
- Rich experience in production of GPCRs, ion channel proteins, aquaporins, transport proteins, etc.
- Customized solutions to meet customers individual needs.

### Case Study



Dr. Kai's team developed an innovative cell-free expression system, and successfully reconstituted the prenylated polarity hub Cdc42 and its regulatory protein in vitro, implementing a key membrane switch.

*Ref: Kai L, Sonal, Heermann T, et al. Reconstitution of a reversible membrane switch via prenylation by one-pot cell-free expression[J].ACS Synthetic Biology, 2022, 12(1): 108-119.*

### Service Types

Cell-Free System Development

Membrane Protein Preparation

Optimization of Membrane Protein Expression System

Cell Extraction Preparation

Full-Length Membrane Protein

Membrane Protein Product Development

### Service Specifications

Step	Description	Deliverables
Project Evaluation	Project analysis and design based on protein information submitted by customers	Evaluation report
Pilot Expression	Gene synthesis & codon optimization (optional) Cell-free expression system design Pilot expression and detection	Pilot expression data Purified protein
Scale-up Production	Scale up protein expression according to customer's requirement	Purified protein CoA

## GenCefe Biotech

+1 408-828-0438; +86 510-85220969

www.gencefebio.com

protein@gencefebio.com

17800 Castleton St., Ste 665, City of Industry, CA 91748, USA  
35-307 Changjiang South Road, Xinwu District, Wuxi, Jiangsu Province 214000, China