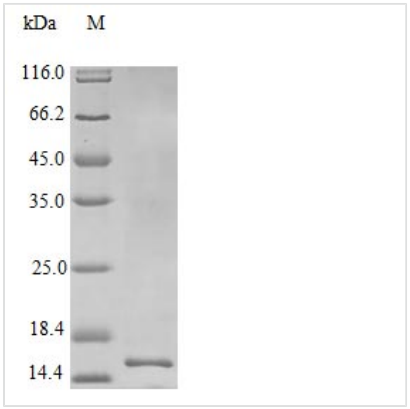
Recombinant Human Interleukin-22 protein (IL22) (Active)

Product Code	CSB-AP001891HU
Abbreviation	Recombinant Human IL22 protein (Active)
Uniprot No.	Q9GZX6
Form	Lyophilized powder
Storage Buffer	Lyophilized from a 0.2 μm filtered PBS, pH 5.0
Product Type	Interleukin
Immunogen Species	Homo sapiens (Human)
Biological Activity	Fully biologically active when compared to standard. The ED50 as determined by inducing IL-10 secretion of human COLO 205 cells is less than 0.3 ng/ml, corresponding to a specific activity of >3.3x10^6 IU/mg.
Purity	>97% as determined by SDS-PAGE.
Sequence	M+APISSHCRL DKSNFQQPYI TNRTFMLAKE ASLADNNTDV RLIGEKLFHG VSMSERCYLM KQVLNFTLEE VLFPQSDRFQ PYMQEVVPFL ARLSNRLSTC HIEGDDLHIQ RNVQKLKDTV KKLGESGEIK AIGELDLLFM SLRNACI
Research Area	Immunology
Source	E.Coli
Target Names	IL22
Expression Region	34-179aa
Notes	Repeated freezing and thawing is not recommended. Store working aliquots at 4°C for up to one week.
Tag Info	Tag-Free
Mol. Weight	16.9kDa
Protein Length	Full Length of Mature Protein
PubMed ID	10954742; 11197690; 10875937; 12975309; 15489334; 15340161; 11856845; 15983417; 18599299

Image



Description

Recombinant Human Interleukin-22 protein (IL22) is produced in an E. coli expression system and contains the complete mature protein sequence from amino acids 34 to 179. This tag-free protein achieves purity levels greater than 97% as verified by SDS-PAGE analysis. The protein demonstrates biological activity with an ED50 of less than 0.3 ng/ml in IL-10 secretion assays using human COLO 205 cells, which translates to a specific activity exceeding 3.3 × 10^6 IU/mg. Endotoxin levels remain below 1.0 EU/μg, making it suitable for research applications.

Interleukin-22 (IL-22) appears to be a cytokine that primarily regulates inflammatory responses while helping maintain epithelial barrier integrity. The protein seems to play a critical role in immune function by influencing pathways involved in tissue repair and pathogen defense. IL-22 has garnered significant research interest due to its involvement in various diseases and potential therapeutic applications for modulating immune responses.

Potential Applications

Note: The applications listed below are based on what we know about this protein's biological functions, published research, and experience from experts in the field. However, we haven't fully tested all of these applications ourselves yet. We'd recommend running some preliminary tests first to make sure they work for your specific research goals.

1. IL-22 Receptor Binding and Signaling Pathway Studies

This recombinant IL-22 protein can investigate IL-22 receptor (IL-22R1/IL-10R2) binding kinetics and downstream signaling cascades across different cell lines. The high biological activity (ED50 < 0.3 ng/ml) makes it well-suited for dose-response studies that characterize STAT3 phosphorylation and related signaling events. Researchers might use this protein in surface plasmon resonance or similar binding assays to determine receptor affinity constants. Since the protein lacks fusion tags, binding studies likely reflect native protein-receptor interactions without potential tag interference.

2. Cytokine-Induced Gene Expression Analysis

The biologically active IL-22 protein can serve as a stimulus in gene expression

profiling experiments designed to identify IL-22-responsive genes in target cell types. Given that activity testing shows IL-10 induction in COLO 205 cells, this protein appears suitable for RNA sequencing or qPCR studies examining cytokine cross-regulation. Researchers could study tissue-specific responses, particularly in epithelial cells where IL-22 signaling may be most physiologically relevant. Time-course experiments might map both early and late gene expression changes following IL-22 stimulation.

3. Cell Proliferation and Survival Assays

This recombinant IL-22 can be used in cell culture studies to examine its effects on cell proliferation, differentiation, and survival across various cell lines. The high specific activity (>3.3 × 10^6 IU/mg) allows for precise dose-titration experiments to establish optimal concentrations for different cellular responses. Standard proliferation assays such as MTT, BrdU incorporation, or direct cell counting can quantify IL-22's growth-promoting effects. The low endotoxin level (<1.0 EU/μg) helps ensure that observed cellular responses stem specifically from IL-22 activity rather than inflammatory contaminants.

4. Antibody Development and Validation

The high-purity (>97%) recombinant IL-22 protein may serve as an excellent immunogen and standard for developing and characterizing anti-IL-22 antibodies. Researchers can use this protein for immunizing animals in monoclonal or polyclonal antibody production protocols. It functions as a positive control in ELISA development and validation studies for IL-22 detection assays. The protein can also be used in neutralization assays to test anti-IL-22 antibody blocking capacity by measuring inhibition of the established IL-10 induction activity in COLO 205 cells.

5. Protein-Protein Interaction Studies

This tag-free IL-22 protein works well in co-immunoprecipitation experiments and protein interaction screening assays designed to identify novel binding partners or cofactors. The absence of tags eliminates potential artifacts in interaction studies while maintaining native protein conformation and activity. Pull-down assays using immobilized IL-22 can capture interacting proteins from cell lysates or tissue extracts. Cross-linking mass spectrometry experiments might also use this active protein to map direct protein contacts and identify previously unknown IL-22-interacting molecules.

Endotoxin	Less than 1.0 EU/μg as determined by LAL method.
Reconstitution	We recommend that this vial be briefly centrifuged prior to opening to bring the contents to the bottom. Please reconstitute protein in deionized sterile water to a concentration of 0.1-1.0 mg/mL.We recommend to add 5-50% of glycerol (final concentration) and aliquot for long-term storage at -20°C/-80°C. Our default final concentration of glycerol is 50%. Customers could use it as reference.
Shelf Life	The shelf life is related to many factors, storage state, buffer ingredients, storage temperature and the stability of the protein itself.

Generally, the shelf life of liquid form is 6 months at -20°C/-80°C. The shelf life of lyophilized form is 12 months at -20°C/-80°C.