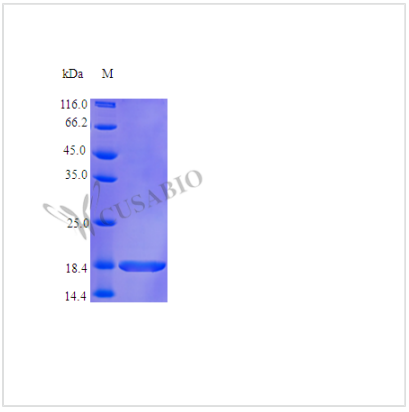
Recombinant Human Fibroblast growth factor 10 protein (FGF10), partial (Active)

Product Code	CSB-AP002441HU
Abbreviation	Recombinant Human FGF10 protein, partial (Active)
Uniprot No.	O15520
Form	Lyophilized powder
Storage Buffer	Lyophilized from a 0.2 μm filtered 2 × PBS, pH 7.4
Product Type	Growth Factor
Immunogen Species	Homo sapiens (Human)
Biological Activity	Fully biologically active when compared to standard. The ED50 as determined by thymidine uptake assay using FGF-receptors transfected BaF3 cells is less than 0.5 ng/ml, corresponding to a specific activity of >2.0x10^6 IU/mg.
Purity	>97% as determined by SDS-PAGE.
Sequence	LGQDMVSPEA TNSSSSSFSS PSSAGRHVRS YNHLQGDVRW RKLFSFTKYF LKIEKNGKVS GTKKENCPYS ILEITSVEIG VVAVKAINSN YYLAMNKKGK LYGSKEFNND CKLKERIEEN GYNTYASFNW QHNGRQMYVA LNGKGAPRRG QKTRRKNTSA HFLPMVVHS
Research Area	Cancer
Source	E.coli
Target Names	FGF10
Expression Region	40-208aa
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	19.1 kDa
Protein Length	Partial
PubMed ID	9287324; 15489334; 15806171; 16597617; 20094046; 12591959; 15654336; 16630169; 16501574
Image	



Description

Recombinant Human Fibroblast growth factor 10 (FGF10) comes from E. coli expression and covers amino acids 40-208 of the protein. This tag-free protein shows purity greater than 97% when checked by SDS-PAGE analysis. The protein appears to be fully biologically active, with an ED50 of less than 0.5 ng/ml based on thymidine uptake assays using FGF-receptor transfected BaF3 cells. This corresponds to a specific activity of over 2.0 × 10^6 IU/mg. Endotoxin levels remain controlled at less than 1.0 EU/μg as measured by the LAL method.

Fibroblast growth factor 10 (FGF10) represents a key protein in various biological processes, though it's particularly important in cell growth and tissue repair. The protein likely plays a significant role in developmental pathways and seems essential for proliferation and differentiation of certain cell types. FGF10's involvement in these processes has made it an interesting target for research into cellular mechanisms and potential therapeutic uses.

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. Cell Proliferation and Viability Assays

This recombinant FGF10 protein can drive cell proliferation in different cell culture systems, especially those that express FGF receptors. With its demonstrated biological activity showing an ED50 of less than 0.5 ng/ml in thymidine uptake assays, researchers may find this protein useful for studying dose-response relationships in cell growth experiments. The high purity (>97%) and low endotoxin levels should make it appropriate for sensitive cell culture work where contamination might skew results. This application builds directly on the provided activity testing method using FGF-receptor transfected BaF3 cells.

2. FGF Receptor Binding and Signaling Studies

The biologically active FGF10 protein can work as a ligand in receptor binding

assays and downstream signaling pathway research. Scientists might use this protein to examine FGF receptor activation, internalization, and the resulting intracellular signaling cascades across various cell types. The defined specific activity of greater than 2.0 × 10? IU/mg offers a quantitative foundation for experimental design and data interpretation. These studies could help clarify the molecular mechanisms behind FGF10-mediated cellular responses.

3. Protein-Protein Interaction Studies

This tag-free FGF10 protein works well in biochemical assays designed to identify and characterize protein-protein interactions involving FGF10. Without tags, there's less chance of interference from tag-related artifacts, which makes it better suited for native interaction studies. Researchers can apply techniques like co-immunoprecipitation, surface plasmon resonance, or other binding assays to investigate how FGF10 interacts with receptors, co-receptors, or other binding partners. High purity means minimal background interference from contaminating proteins.

4. Antibody Development and Validation

The recombinant FGF10 protein may serve as an antigen for creating specific antibodies against human FGF10 or for testing existing antibodies. High purity and the defined protein sequence (amino acids 40-208) provide a well-characterized target for immunization or screening work. Scientists can use this protein in ELISA-based assays, Western blot validation, or other immunoassays to check antibody specificity and affinity. Low endotoxin content becomes particularly important when working with immune system components.

5. Structure-Function Relationship Studies

This partial FGF10 protein (amino acids 40-208) offers opportunities to investigate structure-function relationships of specific FGF10 domains. Researchers might compare the biological activity of this truncated form with full-length FGF10 or other FGF10 variants to pinpoint critical functional regions. The demonstrated biological activity suggests that this region retains essential functional domains, making it valuable for mapping active sites or receptor binding domains. Such studies could provide insights into the molecular basis of FGF10 function and guide protein engineering efforts.

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.