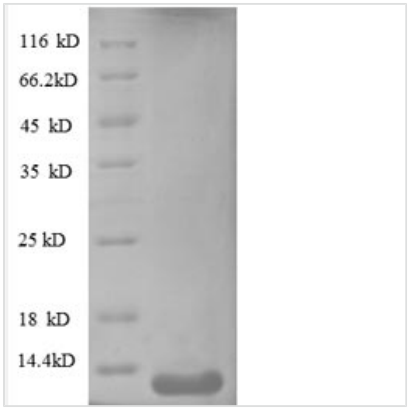
Recombinant Human C-X-C motif chemokine 10 protein (CXCL10)

Product Code	CSB-EP006240HU
Relevance	Chotactic for monocytes and T-lymphocytes. Binds to CXCR3.
Abbreviation	Recombinant Human CXCL10 protein
Storage	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.
Uniprot No.	P02778
Alias	10 kDa interferon gamma-induced protein ;Gamma-IP10 ;IP-10Small-inducible cytokine B10
Product Type	Recombinant Protein
Immunogen Species	Homo sapiens (Human)
Purity	Greater than 90% as determined by SDS-PAGE.
Sequence	VPLSRTVRCTCISISNQPVNPRSLEKLEIIPASQFCPRVEIIATMKKKGEKRCLNP ESKAIKNLLKAVSKERSKRSP
Research Area	Immunology
Source	E.coli
Target Names	CXCL10
Expression Region	22-98aa
Notes	Repeated freezing and thawing is not recommended. Store working aliquots at 4°C for up to one week.
Tag Info	N-terminal 6xHis-tagged
Mol. Weight	12.6kDa
Protein Length	Full Length of Mature Protein
Image	 (Tris-Glycine gel) Discontinuous SDS-PAGE (reduced) with 5% enrichment gel and 15% separation gel.

Description

The recombinant human CXCL10 protein is expressed with an N-terminal 6xHis tag in an E. coli system. The CXCL10 gene fragment (22-98aa) is co-inserted into a vector with the 6xHis tag gene and then introduced into E. coli cells. Protein expression is initiated by adding IPTG, which induces the production of the recombinant CXCL10 protein. After lysis of the cells, affinity chromatography is used to purify the target protein. The recombinant CXCL10 protein is analyzed using SDS-PAGE, with the gel showing a purity of over 90%.

Human CXCL10 is a chemokine that plays a critical role in immune response and inflammation. It is primarily produced in response to IFN-γ and is involved in the recruitment and activation of immune cells, particularly T lymphocytes, monocytes, and NK cells, through its interaction with the CXCR3 [1][2]. CXCL10 is classified as a non-ELR (glutamic acid-leucine-arginine) CXC chemokine, which distinguishes it from other chemokines that promote angiogenesis [3].

The expression of CXCL10 is significantly upregulated in various pathological conditions, including viral infections, autoimmune diseases, and cancers. Elevated levels of CXCL10 have been observed in patients with COVID-19, where it serves as a potential biomarker for disease severity and prognosis [4]. CXCL10 has been shown to inhibit tumor growth and angiogenesis, suggesting its therapeutic potential in cancer treatment [5]. Moreover, its role in chronic inflammatory conditions, such as chronic obstructive pulmonary disease (COPD) and diabetes, highlights its involvement in the pathogenesis of these diseases [6][7]. CXCL10's mechanism of action involves the activation of various intracellular signaling pathways, including the ERK MAPK and PI3K pathways, which are crucial for cell proliferation and survival [8].

References:

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[8] J. Gao, L. Wu, Y. Wang, S. Cui, S. Duan, Z. Dong, et al. Knockdown of cxcl10 inhibits mesangial cell proliferation in murine habu nephritis via erk signaling, Cellular Physiology and Biochemistry, vol. 42, no. 5, p. 2118-2129, 2017. https://doi.org/10.1159/000479914

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.