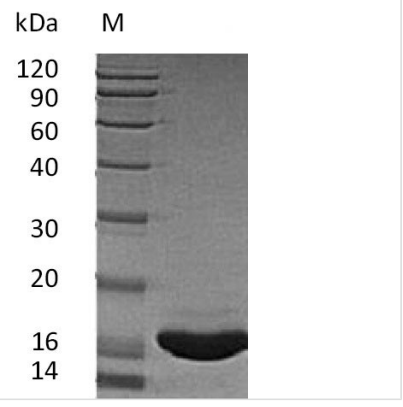
Recombinant Human Kit ligand (KITLG), partial (Active)

Product Code	CSB-AP003741HU
Abbreviation	Recombinant Human KITLG protein, partial (Active)
Uniprot No.	P21583
Form	Lyophilized powder
Storage Buffer	Lyophilized from a 0.2 μm filtered 20 mM PB, 150 mM NaCl, pH 7.0
Product Type	Growth Factor
Immunogen Species	Homo sapiens (Human)
Biological Activity	The ED50 as determined in a cell proliferation assay using TF?1 human erythroleukemic cells is 1-5 ng/ml.
Purity	Greater than 95% as determined by SDS-PAGE.
Sequence	EGICRNRVTNNVKDVTKLVANLPKDYMITLKYVPGMDVLPSHCWISEMVVQLSDSLTDLLDKFSNISEGLSNYSIIDKLVNIVDDLVECVKENSSKDLKKSFKSPEPRLFTPEEFFRIFNRSIDAFKDFVVASETSDCVVSSTLSPEKDSRVSVTKPFMLPPVA
Research Area	Immunology
Source	E.coli
Target Names	KITLG
Expression Region	26-189aa
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	18.4 kDa
Protein Length	Partial
Image	



(Tris-Glycine gel) Discontinuous SDS-PAGE (reduced) with 5% enrichment gel and 15% separation gel.

Description

Recombinant Human Kit ligand (KITLG) is produced in an E. coli expression system, covering the amino acid region 26-189. This product is tag-free and shows a purity level exceeding 95%, as verified by SDS-PAGE analysis. It demonstrates biological activity, with an effective dose (ED50) of 1-5 ng/ml, determined through a cell proliferation assay using TF-1 human erythroleukemic cells. The endotoxin level remains below 1.0 EU/μg, as measured by the LAL method.

Kit ligand (KITLG), also known as stem cell factor (SCF), appears to play a crucial role in hematopoiesis. It promotes the survival, proliferation, and differentiation of hematopoietic stem cells. The protein is involved in various signaling pathways and seems essential for the development of melanocytes, germ cells, and interstitial cells of Cajal. Researchers commonly use KITLG to study stem cell biology and related cellular processes.

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 KITLG can stimulate cell proliferation in hematopoietic cell lines and primary cells expressing the KIT receptor. The established ED50 of 1-5 ng/ml in TF-1 cells provides a validated concentration range for dose-response studies. Scientists may use this protein to investigate cell cycle progression, survival signaling pathways, and growth factor dependencies in various blood cell lineages. High purity and low endotoxin levels make it suitable for sensitive cell culture applications where contamination could potentially skew results.

2. Hematopoietic Stem Cell Research

KITLG appears essential for hematopoietic stem cell maintenance and differentiation. This makes the recombinant protein valuable for in vitro stem cell studies. Scientists can use it to maintain primitive hematopoietic progenitors in culture or to study the molecular mechanisms that may govern stem cell fate decisions. The protein can be incorporated into defined media formulations for ex vivo expansion of hematopoietic stem cells from bone marrow or cord blood samples. Its biological activity likely ensures proper receptor activation necessary for studying stem cell biology and hematopoiesis.

3. Signal Transduction Pathway Analysis

This biologically active KITLG serves as a tool to investigate KIT receptor-mediated signaling cascades in various cell types. Scientists can study downstream phosphorylation events, protein-protein interactions, and gene

expression changes following receptor activation. The defined concentration range allows for controlled stimulation experiments to map temporal signaling dynamics. Time-course studies using this protein may help clarify the kinetics of pathway activation and identify key regulatory nodes in KIT signaling networks.

4. Antibody Development and Validation

The high-purity, tag-free recombinant KITLG works as an antigen for developing and characterizing anti-KITLG antibodies. Researchers can use it in immunization protocols for monoclonal antibody generation or as a standard in antibody specificity testing. The protein serves as a positive control in immunoassays such as ELISA, Western blotting, and immunoprecipitation experiments. Its biological activity can also validate the functional impact of neutralizing antibodies in cell-based assays.

5. Protein-Protein Interaction Studies

This recombinant KITLG works well in biochemical assays to study its interactions with the KIT receptor and other binding partners. Surface plasmon resonance, bio-layer interferometry, or other biophysical techniques can determine binding kinetics and affinity constants. Scientists may also use the protein in pull-down assays or co-immunoprecipitation experiments to identify novel interacting proteins. Its soluble nature and high purity make it well-suited for structural biology applications and protein complex characterization studies.

Endotoxin	Less than 0.01 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.