

Recombinant Human SDF1 Protein

For Research Use Only

1. Basic Product Information

Catalog No.: REP50880

Size: 10ug, 100ug

Protein Name: Stromal cell-derived factor 1 (SDF-1) (hSDF-1) (C-X-C motif chemokine 12) (Interkrine reduced in hepatomas) (IRH) (hIRH) (Pre-B cell growth-stimulating factor) (PBSF) [Cleaved into: SDF-1-beta(3-72); SDF-1-alpha(3-67)]

Synonym: CXCL12, SDF1, SDF1A, SDF1B

UniProt ID: P48061

UniProt Link: www.uniprot.org/uniprotkb/P48061/entry

Species Source: Human

Expression System: HEK293T eukaryotic cell expression system Sequence

Length: 93 AA

Molecular Weight: 11 KD

Protein Tag: C-terminal His6

2. Amino Acid Sequence

MNAKVVVVLVLVTALCLSDGKPVSLSYRCPCRFFESHVARANVKHLKILNTPNCALQIVARLKNNNR
QVCIDPKLKWIQEYLEKALNKRFKM

3. Buffer Composition

Liquid format: PBS-based buffer containing 50% glycerol. Glycerol concentration can be customized upon customer request; please state special requirements when placing your order.

Lyophilized format: Buffer before lyophilization is PBS supplemented with 6% trehalose.

4. Storage Conditions

Upon receipt, store the product at -20 °C or -80 °C. Aliquot the product for on-demand use to preserve protein activity and prevent denaturation and inactivation caused by repeated freeze-thaw cycles.

5. Product Description

This product is recombinant Stromal cell-derived factor 1 (SDF-1) (hSDF-1) (C-X-C motif chemokine 12) (Interkrine reduced in hepatomas) (IRH) (hIRH) (Pre-B cell growth-stimulating factor) (PBSF) [Cleaved into: SDF-1-beta(3-72); SDF-1-alpha(3-67)] produced using the HEK293T eukaryotic cell expression system. It is suitable for in-vitro functional assays, protein-protein interaction studies, antibody preparation and other biomedical research applications.

Protein Function: Chemoattractant active on T-lymphocytes and monocytes but not neutrophils (PubMed:18802065, PubMed:39093700). Activates the C-X-C chemokine receptor CXCR4 to induce a rapid and transient rise in the level of intracellular calcium ions and chemotaxis (PubMed:8752281, PubMed:18802065, PubMed:39093700). Also binds to atypical chemokine receptor ACKR3, which activates the beta-arrestin pathway and acts as a scavenger receptor for CXCL12/SDF-1 (PubMed:16107333, PubMed:19255243). Binds to the allosteric site (site 2) of integrins and activates integrins ITGA5:ITGB3, ITGA4:ITGB1 and ITGA5:ITGB1 in a CXCR4-independent manner (PubMed:29301984). Acts as a positive regulator of monocyte migration and a negative regulator of monocyte adhesion via the LYN kinase (PubMed:18802065). Stimulates migration of monocytes and T-lymphocytes through its receptors, CXCR4 and ACKR3, and decreases monocyte adherence to surfaces coated with ICAM-1, a ligand for beta-2 integrins (PubMed:16107333, PubMed:18802065, PubMed:19255243, PubMed:39093700). CXCR4 signaling axis inhibits beta-2 integrin LFA-1 mediated adhesion of monocytes to ICAM-1 through LYN kinase (PubMed:18802065). Inhibits CXCR4-mediated infection by T-cell line-adapted HIV-1 (PubMed:8752281). Plays a protective role after myocardial infarction. Induces down-regulation and internalization of ACKR3 expressed in various cells. Has several critical functions during embryonic development; required for B-cell lymphopoiesis, myelopoiesis in bone marrow and heart ventricular septum formation (By similarity). Stimulates the proliferation of bone marrow-derived B-cell progenitors in the presence of IL7 as well as growth of stromal cell-dependent pre-B-cells (By similarity).; [SDF-1-beta(3-72)]: Shows a reduced chemotactic activity.; [SDF-1-alpha(3-67)]: Shows a reduced chemotactic activity (PubMed:14525775). Binding to cell surface proteoglycans seems to inhibit formation of SDF-1-alpha(3-67) and thus to preserve activity on local sites (PubMed:14525775).

Subcellular Localization: Secreted .

6. Notes

- Avoid repeated freeze-thaw cycles to maintain protein stability and biological activity.
- Please specify special buffer-composition requirements at the time of order placement.
- For research use only. Not intended for clinical diagnosis, therapeutic use or commercial manufacturing.