Recombinant Mouse CXCL12/SDF-1 Protein

Catalog No. PKSM040993

Note: Centrifuge before opening to ensure complete recovery of vial contents.

Description	
Synonyms	Cxcl12;Stromal cell-derived factor 1;SDF-1;12-O-tetradecanoylphorbol 13-acetate repressed protein 1;TPAR1;C-X-C motif chemokine 12;Pre-B cell growth-stimulating factor;PBSF;Thymic lymphoma cell-stimulating factor;TLSF;Sdf1
Species	Mouse
Expression Host	E.coli
Sequence	Gly 21-Lys 89
Accession	P40224
Calculated Molecular Weight	9.0 kDa
Observed molecular weight	11 kDa
Tag	C-His
Bioactivity	Measure by its ability to chemoattract BaF3 cells transfected with human CXCR4.The ED ₅₀ for this effect is < 0.5 ng/mL.
Properties	
Purity	> 98 % as determined by reducing SDS-PAGE.
Endotoxin	< 0.1 EU per µg of the protein as determined by the LAL method.
Storage	Generally, lyophilized proteins are stable for up to 12 months when stored at -20 to -80°C. Reconstituted protein solution can be stored at 4-8°C for 2-7 days. Aliquots of reconstituted samples are stable at < -20°C for 3 months.
Shipping	This product is provided as lyophilized powder which is shipped with ice packs.
Formulation	Lyophilized from sterile PBS, pH 7.4. Normally 5 % - 8 % trehalose, mannitol and 0.01% Tween80 are added as protectants before lyophilization. Please refer to the specific buffer information in the printed manual.
Reconstitution	Please refer to the printed manual for detailed information.
Data	



> 98 % as determined by reducing SDS-PAGE.

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Background

Mouse Cxcl12 is a secreted and highly conserved protein which belongs to the intercrine alpha (chemokine CxC) family.CXCL12 is widely expressed in various organs including brain, kidney, skeletal muscle, heart, liver, and lymphoid organs. Cxcl12 activates the C-X-C chemokine receptor CXCR4 to induce a rapid and transient rise in the level of intracellular calcium ions and chemotaxis. It also binds to atypical chemokine receptor ACKR3 which activates the beta-arrestin pathway and acts as a scavenger receptor for SDF-1. Cxcl12 has several critical functions during embryonic development such as B-cell lymphopoiesis, myelopoiesis in bone marrow and heart ventricular septum formation. Cxcl12 plays an important role in acting as a positive regulator of monocyte migration and a negative regulator of monocyte adhesion via the LYN kinase. It 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. SDF1A/CXCR4 signaling axis inhibits beta-2 integrin LFA-1 mediated adhesion of monocytes to ICAM-1 through LYN kinase. It also plays a protective role after myocardial infarction, induces down-regulation and internalization of ACKR3 expressed in various cells and stimulates the proliferation of bone marrow-derived b progenitor cells in the presence of IL-7 as well as growth of the stromal cell-dependent B-cell clone DW34 cells.

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