

## Recombinant Mouse CXCL12/SDF-1 Protein

**Catalog Number: PKSM040993**

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

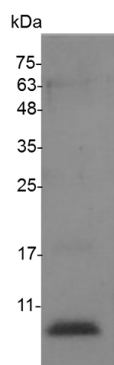
### Description

<b>Species</b>	Mouse
<b>Source</b>	E.coli-derived Mouse CXCL12/SDF-1 protein Gly 21-Lys 89 , with an C-terminal His
<b>Calculated MW</b>	9.0 kDa
<b>Observed MW</b>	11 kDa
<b>Accession</b>	P40224
<b>Bio-activity</b>	Measure by its ability to chemoattract BaF3 cells transfected with human CXCR4. The ED <sub>50</sub> for this effect is <0.5 ng/mL.

### Properties

<b>Purity</b>	> 98 % as determined by reducing SDS-PAGE.
<b>Endotoxin</b>	< 0.1 EU per µg of the protein as determined by the LAL method.
<b>Storage</b>	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.
<b>Shipping</b>	This product is provided as lyophilized powder which is shipped with ice packs.
<b>Formulation</b>	Lyophilized from sterile PBS, pH 7.4. Normally 5% - 8% trehalose, mannitol and 0.01% Tween 80 are added as protectants before lyophilization.
<b>Reconstitution</b>	Please refer to the specific buffer information in the printed manual. Please refer to the printed manual for detailed information.

### Data



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### Background

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Mouse Cxcl12 is a secreted and highly conserved protein which belongs to the intercrine alpha (chemokine Cx<sub>C</sub>) 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. SDF1/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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