

Product Name: CXCL12 (SDF-1 α)

Catalog Numbers: CXCL12-5ug CXCL12-20ug CXCL12-50ug CXCL12-100ug CXCL12-1mg

DESCRIPTION

Source	E. coli derived Accession # P48061-2 (22-89)
Modification	None
Actual Molecular Mass (Mass Spec)	Mol weight confirmed by mass spec
Predicted Molecular Mass	7.959 kDa
Extinction Coefficient	8730 M ⁻¹ cm ⁻¹
Protein Sequence	KPVLSYRCPFRFFESHVARANVKHLKILNTPNCALQIVARLKNNNRQVCIDPKLKWIQEY LEKALNK

SPECIFICATIONS

Activity	EC50 = 0.62nM determined by Calcium Flux with human CXCR4 in U937 cells EC50 = 0.17
Endotoxin Level	<0.01 EU per 1 μ g of the protein by the LAL method
Purity	> 97% by SDS PAGE
Formulations	Lyophilized
Carrier Protein	None

PREPARATION AND STORAGE

Reconstitution	Spin tube prior to resuspending. Recommended at 100 μ g/mL in sterile water
Shipping	Room Temp

Stability and Storage**Avoid repeated freeze-thaw cycles**

- 12 months from date of receipt, -20 to -70 °C as supplied.
- Suggest to use immediately after reconstitution
- 1 month at -20 to -70 °C under sterile conditions after reconstitution.

BACKGROUND**Description**

As a chemoattractant active on T-lymphocytes, monocytes, but not neutrophils, SDF-1 α activates the C-X-C chemokine receptor CXCR4 to induce a rapid and transient rise in the level of intracellular calcium ions and chemotaxis. Also binds to another C-X-C chemokine receptor CXCR7, which activates the beta-arrestin pathway and acts as a scavenger receptor for SDF-1. SDF-1-beta(3-72) and SDF-1 α (3-67) show a reduced chemotactic activity. Binding to cell surface proteoglycans seems to inhibit formation of SDF-1 α (3-67) and thus to preserve activity on local sites. Acts as a positive regulator of monocyte migration and a negative regulator of monocyte adhesion via the LYN kinase. Stimulates migration of monocytes and Tlymphocytes through its receptors, CXCR4 and CXCR7, and decreases monocyte adherence to surfaces coated with ICAM-1, a ligand for beta-2 integrins. SDF-1 α /CXCR4 signaling axis inhibits beta-2 integrin LFA-1 mediated adhesion of monocytes to ICAM-1 through LYN kinase. Inhibits CXCR4-mediated infection by T-cell line-adapted HIV-1. Plays a protective role after myocardial infarction. Induces down-regulation and internalization of CXCR7 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.

References:

1. "Structure and chromosomal localization of the human stromal cell-derived factor 1 (SDF1) gene."
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2. "Identification and expression of novel isoforms of human stromal cell-derived factor 1."
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3. "Nucleotide sequence of hIRH, human intercrine reduced in hepatomas."
Begum N.A., Barnard G.F.
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4. "Polymorphism study of cell-derived factor 1 (SDF1) gene and their correlation with HIV infection in a Chinese cohort."
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