CXCL12 (SDF-1alpha) Human E. coli

Product Data Sheet

Type: Recombinant
Source: E. coli
Species: Human
Other names: Stromal cell-derived factor 1, SDF-1a, C-X-C motif chemokine 12, Pre-B cell growth-stimulating factor, PBSF, hIRH, CXCL12 (isoform alpha)

Cat. No.:
RD172381050 (0.05 mg)

Description

Total 68 AA. MW: 8,0 kDa (calculated). UniProtKB acc.no# P48061 2 (24-89) Protein identity confirmed by LC-MS/MS.

Introduction to the Molecule

Chemoattractant active on T-lymphocytes, monocytes, but not neutrophils. 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-alpha(3-67) show a reduced chemotactic activity. Binding to cell surface proteoglycans seems to inhibit formation of SDF-1-alpha(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 T-lymphocytes through its receptors, CXCR4 and CXCR7, 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. 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.

Research topic

Chemokines, Cytokines and chemokines and related molecules

Amino Acid Sequence

KPVSLSYRCP CRFFESHVAR ANVKHLKILN TPNCALQIVA RLKNNNRQVC IDPKLKWIQE YLEKALNK

Source

E. coli

Purity

Purity as determined by SDS PAGE: >97 %

Biological Activity

EC50 = 0.31nM determined by Calcium Flux with human CXCR4 in U937 cells
EC50 = 0.17nM determined by Migration with U937 cells
SPA Binding assay of CXCL12/SDF-1alpha to CXCR7 (IC50 = 14pM) and CXCR4 (IC50 = 2nM)

Endotoxin

<0.01 EU /1µg

Reconstitution

Add sterile water to prepare a working stock solution of approximately 0.1 mg/ml and let the lyophilized pellet dissolve completely.

Shipping

At ambient temperature. Upon receipt, store the product at the temperature recommended below.

Storage, Stability/Shelf Life

Store the lyophilized protein at -20 to -70 °C. Lyophilized protein remains stable until the expiry date when stored at-20 to -70 °C. Aliquot reconstituted protein to avoid repeated freezing/thawing cycles and store at -20 to -70 °C, the protein is stable for 3 months at -20 to -70 °C under sterile conditions after reconstitution. Reconstituted protein can be stored at 4 °C for 1 month under sterile conditions after reconstitution

Quality Control Test

Quantification is done by A280, using the calculated extinction coefficient (8730 M-1 cm-1).
SDS-PAGE to determine purity of the protein.
LAL TEST to determine endotoxin level.

Applications

Biologically active protein, Cell culture and/or animal studies, ELISA, Western blotting

Note

This product is intended for research use only.

HEADQUARTERS: BioVendor Laboratorní medicína, a.s.	Karasek 1767/1	621 00 Brno CZECH REPUBLIC	Phone: +420-549-124-185 Fax: +420-549-211-460	E-mail: Web:	info@biovendor.com sales@biovendor.com www.biovendor.com
AUSTRIA: BioVendor GesmbH	Nußdorfer Straße 20/10	1090 Vienna AUSTRIA	Phone: +43-1-89090-25 Fax: +43-1-89090-2515	E-mail:	infoAustria@biovendor.com
GERMANY, SWITZERLAND: BioVendor GmbH	Otto-Hahn-Straße 16	34123 Kassel GERMANY	Phone: +49-6221-433-9100 Fax: +49-6221-433-9111	E-mail:	infoEU@biovendor.com
USA, CANADA AND MEXICO: BioVendor LLC	128 Bingham Rd. Suite 1300	Asheville, NC 28806 USA	Phone: +1-828-575-9250 +1-800-404-7807 Fax: +1-828-575-9251	E-mail:	infoUSA@biovendor.com