

Recombinant Human Stromal Cell-Derived Factor-1 beta (CXCL12)

Alternate names: CXCL12, SDF1 beta

Catalog No.: PA1175XC

Quantity: 1 mg

Concentration: 1.0 mg/ml

Species: Human

Source: E. coli, E.coli

Format: **State:** Sterile Filtered White lyophilized (freeze-dried) powder.

Purity: >98% Greater than 98.0% as determined by:

(a) Analysis by RP-HPLC.

(b) Anion-exchange FPLC.

(c) Analysis by reducing and non-reducing SDS-PAGE Silver Stained.

Buffer System: SDF-1b is lyophilized from a concentrated sterile solution containing no additives.

Endotoxin Level: Less than 0.1 ng/μg (IEU/μg) of Recombinant Human Stromal Cell-Derived Factor-1 beta.

Dimers: Less than 1% as determined by silver-stained SDS-PAGE gel analysis.

Reconstitution: It is recommended to reconstitute the lyophilized SDF-1beta in sterile 18MO-cm H2O not less than 100μg/ml, which can then be further diluted to other aqueous solutions.

Description: Recombinant Human SDF-1b produced in E.Coli is a non-glycosylated, Polypeptide chain containing 72 amino acids. Human SDF-1b is purified by proprietary chromatographic techniques.

AA Sequence:

The sequence of the first five N-terminal amino acids was determined and was found to be Lys-Pro-Val-Ser-Leu.

Biological Activity: SDF-1b is fully biologically active when compared to standard.

The specific activity as determined by its ability to chemoattract human peripheral T cells activated with PHA and IL-2 using a concentration of 20-80 ng/ml.

Molecular weight: 8508 Dalton.

Molecular weight: 9 kDa

Add. Information: SDF-1b protein quantitation was carried out by two independent methods:

1. UV spectroscopy at 280 nm using the absorbency value of 1.06 as the extinction coefficient for a 0.1% (1mg/ml) solution. This value is calculated by the PC GENE computer analysis program of protein sequences (IntelliGenetics).

2. Analysis by RP-HPLC, using a calibrated solution of Recombinant Human Stromal Cell-Derived Factor-1 beta as a Reference Standard.

Storage:

Lyophilized SDF-1beta although stable at room temperature for 3 weeks, should be stored desiccated below -18 C. Upon reconstitution SDF-1b should be stored at 4 C between 2-7 days and for future use below -18 C. For long term storage it is recommended to add a carrier protein (0.1% HSA or BSA). Please avoid freeze-thaw cycles.

General Readings:

1. Gallagher KA, Liu ZJ, Xiao M, Chen H, Goldstein LJ, Buerk DG, et al. Diabetic impairments in NO-mediated endothelial progenitor cell mobilization and homing are reversed by hyperoxia and SDF-1 alpha. *J Clin Invest.* 2007 May;117(5):1249-59. PubMed PMID: 17476357.
2. Massa A, Casagrande S, Bajetto A, Porcile C, Barbieri F, Thellung S, et al. SDF-1 controls pituitary cell proliferation through the activation of ERK1/2 and the Ca²⁺-dependent, cytosolic tyrosine kinase Pyk2. *Ann N Y Acad Sci.* 2006 Dec;1090:385-98. PubMed PMID: 17384283.
3. Wysoczynski M, Kucia M, Ratajczak J, Ratajczak MZ. Cleavage fragments of the third complement component (C3) enhance stromal derived factor-1 (SDF-1)-mediated platelet production during reactive postbleeding thrombocytosis. *Leukemia.* 2007 May;21(5):973-82. Epub 2007 Mar 1. PubMed PMID: 17330096.
4. Gao C, Li Y. SDF-1 plays a key role in the repairing and remodeling process on rat allo-orthotopic abdominal aorta grafts. *Transplant Proc.* 2007 Jan-Feb;39(1):268-72. PubMed PMID: 17275519.
5. Verma R, Gupta RB, Singh K, Bhasin R, Anand Shukla A, Chauhan SS, et al. Distribution of CCR5delta32, CCR2-64I and SDF1-3'A and plasma levels of SDF-1 in HIV-1 seronegative North Indians. *J Clin Virol.* 2007 Mar;38(3):198-203. Epub 2007 Jan 19. PubMed PMID: 17240189.
6. Fukui A, Goto T, Kitamoto J, Homma M, Asashima M. SDF-1 alpha regulates mesendodermal cell migration during frog gastrulation. *Biochem Biophys Res Commun.* 2007 Mar 9;354(2):472-7. Epub 2007 Jan 10. PubMed PMID: 17239342.

Pictures:

Precursor- Protein structure and amino acid sequence: PA1175XCME0607

