

Recombinant Mouse Stromal Cell-Derived Factor-1 alpha (rm SDF-1 alpha / CXCL12a)

Synonyms: Pre-B cell growth-stimulating factor, PBSF, hIRH, TPAR1, SCYB12, TLSF-a.

Introduction: SDF-1 is produced in two forms, SDF-1 α /CXCL12a and SDF-1 β /CXCL12b, by alternate splicing of the same gene. The SDF-1 proteins belong to the group of CXC chemokines whose initial pair of cysteines are separated by one intervening amino acid. SDF-1 is strongly chemotactic for lymphocytes and has been implicated as an important cell co-ordinator during development. During embryogenesis it directs the migration of hematopoietic cells from foetal liver to bone marrow. Mice which were knocked-out for SDF-1 gene were lethal before the birth or within just 1 hour of life. As another role, SDF-1 alters also the electrophysiology of neurons. SDF-1 was shown to be expressed in many tissues in mice (including brain, thymus, heart, lung, liver, kidney, spleen and bone marrow). The receptor for this chemokine is CXCR4. This SDF-1-CXCR4 interaction used to be considered exclusive (unlike for other chemokines and their receptors), but recently it was suggested that SDF-1 is also bound by CXCR7 receptor. In human and mouse both SDF-1 and CXCR4 show high identity of sequence: 99% and 90%, respectively.

Description: Recombinant murine SDF-1alpha produced in *E.Coli* is a non-glycosylated, polypeptide chain containing 68 amino acids and having a molecular mass of 7.9 kDa. The rm SDF-1alpha is purified by proprietary chromatographic techniques.

Source: *Escherichia Coli*.

Physical Appearance: Sterile filtered white lyophilized (freeze-dried) powder.

Formulation: lyophilized from a 0.22 μ m filtered solution in 25 mM Sodiumphosphate, 100 mM NaCl pH 7.4
The aliquots of 1 μ g and 2 μ g contain Trehalose 5% (w/vol) for better recovery

Solubility: It is recommended to reconstitute the lyophilized rm SDF-1alpha in sterile H₂O not less than 100 μ g/ml, which can then be further diluted to other aqueous solutions.

Stability: Lyophilized rm SDF-1alpha although stable at room temperature for 3 weeks, should be stored desiccated below -18 $^{\circ}$ C. Upon reconstitution rm SDF-1alpha should be stored at 4 $^{\circ}$ C between 2-7 days and for future use below -18 $^{\circ}$ C. For long term storage it is recommended to add a carrier protein (0.1% HSA or BSA). Please prevent freeze-thaw cycles.

Purity: Greater than 95.0% as determined by SDS-PAGE

Amino acid Sequence: KPVLSYRCP CRFFESHIAR ANVKHLKILN TPNCALQIVA RLKNNNRQVC
IDPKLKWIQE YLEKALNK.

Endotoxicity: The endotoxin level is less than 1 EU / μ g determined by LAL method

Biological Activity: Determined by chemotaxis assay with human PBMCs the ED50 has been 80 – 100 ng/ml.

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<i>small</i>	2 μ g	Cat.N $^{\circ}$	12343362
<i>medium</i>	10 μ g	Cat.N $^{\circ}$	12343363
<i>large</i>	50 μ g	Cat.N $^{\circ}$	12343365
<i>x-large</i>	250 μ g	Cat.N $^{\circ}$	12343367
<i>x-large</i>	1000 μ g	Cat.N $^{\circ}$	12343368

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