

## Recombinant Human Stromal Cell-Derived Factor-1 beta (rh SDF-1 beta / rh CXCL12b)

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

**Introduction:** SDF-1 is produced in two forms, SDF-1 $\alpha$ /CXCL12a and SDF-1 $\beta$ /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, which was previously called fusin. 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. The gene for SDF-1 is located on human chromosome 10. In human and mouse both SDF-1 and CXCR4 show high identity of sequence: 99% and 90%, respectively.

**Description:** Recombinant human SDF-1 beta produced in E.Coli is a non-glycosylated, polypeptide chain containing 72 amino acids and having a molecular mass of 8.5 kDa. The SDF-1b is purified by proprietary chromatographic techniques.

**Source:** *Escherichia Coli*.

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

**Formulation:** Lyophilized from a concentrated solution in water containing no additives. The aliquots of 1 $\mu$ g and 2 $\mu$ g contain Trehalose 5% (w/vol) for better recovery

**Solubility:** It is recommended to reconstitute the lyophilized rh SDF-1beta in sterile H<sub>2</sub>O not less than 100  $\mu$ g/ml, which can then be further diluted to other aqueous solutions.

**Stability:** Lyophilized rh SDF-1 beta although stable at room temperature for 3 weeks, should be stored desiccated below -18°C. Upon reconstitution rh SDF-1 beta 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 prevent freeze-thaw cycles.

**Purity:** Greater than 98.0% as determined by RP-HPLC and by SDS-PAGE.

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

**Endotoxicity:** The endotoxin level is less than 1 EU /  $\mu$ g determined by LAL method.

**Biological Activity:** 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.

This material is offered for **research use only**. Not for use in human. For in vitro use only. ImmunoTools will not be held responsible for patent infringement or other violations that may occur with the use of our products.

<i>small</i>	2 $\mu$ g	Cat.N°	11343932
<i>medium</i>	10 $\mu$ g	Cat.N°	11343933
<i>large</i>	50 $\mu$ g	Cat.N°	11343935

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