

**DATASHEET**  
Version 20181206**SDF-1 $\alpha$ /CXCL12, Rat****Cat. No.:** Z02859-10**Size:** 10.0 ug**Synonyms:** SDF-1 alpha/CXCL12, Rat;**Description:**

SDF-1 $\alpha$  and SDF-1 $\beta$ , members of the chemokine <sup>a</sup> subfamily that lack the ELR domain, were initially identified using the signal sequence trap cloning strategy from a mouse bone-marrow stromal cell line. These proteins were subsequently also cloned from a human stromal cell line as cytokines that supported the proliferation of a stromal cell-dependent pre-B-cell line. SDF-1 $\alpha$  and SDF-1 $\beta$  cDNAs encode precursor proteins of 89 and 93 amino acid residues, respectively. Both SDF-1 $\alpha$  and SDF-1 $\beta$  are encoded by a single gene and arise by alternative splicing. The two proteins are identical except for the four amino acid residues that are present in the carboxy-terminus of SDF-1 $\beta$  and absent from SDF-1 $\alpha$ . SDF-1/PBSF is highly conserved between species, with only one amino acid substitution between the mature human and mouse proteins. SDF-1/PBSF acts via the chemokine receptor CXCR4 and has been shown to be a chemoattractant for T-lymphocytes, monocytes, pro- and pre- B cells, but not neutrophils.

**Amino Acid Sequence:**

00001 KPVSLSYRCP CRFFESHVAR ANVKHLKILN TPNCALQIVA  
00041 RLKSNRRQVC IDPKLKWIQE YLDKALNK

**Source:** *E. coli***Species:** Rat

**Biological Activity:** Fully biologically active when compared to standard. The biological activity determined by a chemotaxis bioassay using human peripheral blood monocytes is in a concentration range of 50-100 ng/ml.

**Molecular Weight:** Approximately 7.9 kDa, a single non-glycosylated polypeptide chain containing 68 amino acids.

**Formulation:** Lyophilized from a 0.2  $\mu$ m filtered concentrated solution in 20 mM PB, pH 7.4, 150 mM NaCl.

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

**Reconstitution:** We recommend that this vial be briefly centrifuged prior to opening to bring the contents to the bottom. Reconstitute in sterile distilled water or aqueous buffer containing 0.1 % BSA to a concentration of 0.1-1.0 mg/mL. Stock solutions should be apportioned into working aliquots and stored at  $\leq -20$  °C. Further dilutions should be made in appropriate buffered solutions.

**Purity:** > 97 % by SDS-PAGE and HPLC analyses.

**Endotoxin Level:** Less than 1 EU/ $\mu$ g of rRtSDF-1 $\alpha$ /CXCL12 $\alpha$  as determined by LAL method.

**Storage:** This lyophilized preparation is stable at 2-8 °C, but should be kept at -20 °C for long term storage, preferably desiccated. Upon reconstitution, the preparation is stable for up to one week at 2-8 °C. For maximal stability, apportion the reconstituted preparation into working aliquots and store at -20 °C to -70 °C. Avoid repeated freeze/thaw cycles.