



## User Manual

**SDF-1 beta (SDF-1 $\beta$ /CXCL12) (Murine)**

**Cat. No. MECXP-12023**

**Description:**

SDF-1 $\alpha$  and SDF-1 $\beta$ , members of the chemokine  $\alpha$  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. Mice lacking SDF-1 or CXCR4 have been found to have impaired B-lymphopoiesis, myelopoiesis, vascular development, cardiogenesis and abnormal neuronal cell migration and patterning in the central nervous system .

**Source:**

*Escherichia coli*

**Unit:**

1 mg

**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 < -20°C. Further dilutions should be made in appropriate buffered solutions.

**Formulation:**

Lyophilized from a 0.2  $\mu\text{m}$  filtered concentrated solution in 20 mM PB, pH 7.4, 150 mM NaCl.

**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.

**Molecular Weight:**

Approximately 8.5 kDa, a single non-glycosylated polypeptide chain containing 72 amino acids.

**Endotoxin:**

Less than 1 EU/ $\mu\text{g}$  of SDF-1 $\beta$ /CXCL12 as determined by LAL method.

**Usage:**

This material is offered by Cyagen Biosciences for research, laboratory or further evaluation purposes. FOR RESEARCH USE ONLY. NOT INTENDED FOR ANY ANIMAL OR HUMAN THERAP EUTIC OR DIAGNOSTIC USE.

**Biological Activity:**

The biologically active determined by a chemotaxis bioassay using human peripheral blood monocytes is in a concentration range of 50-100 ng/mL.

**Physical Appearance:**

Sterile filtered white lyophilized (freeze-dried) powder.

**AA Sequence:**

KPVLSYRCP CRFFESHIAR ANVKHLKILN TPNCALQIVA RLKNNNRQVC  
IDPKLKWIQE YLEKALNKRL KM

**Purity:**

> 97% by SDS-PAGE and HPLC analyses.

Material Safety Data Sheets (MSDSs) are available upon request.

The Certificate of Analysis (COA), which provides detailed quality control information for each product, is also available at the Cyagen website.

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