

# Cytokines

## Mouse Recombinant SDF-1 beta (CXCL12)

Stromal cell-derived factor 1 beta

Catalog # 78101  
78101.1

10 µg  
50 µg



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## Product Description

Stromal cell-derived factor 1 beta (SDF-1 beta) is a splicing variant of CXCL12 and a member of the CXC family of chemokines. SDF-1 beta is constitutively and ubiquitously expressed in most tissues as SDF-1 $\alpha$  (89 amino acids) and SDF-1 $\beta$  (93 amino acids) resulting from alternative gene splicing (Janowski). These variants regulate hematopoiesis, lymphocyte homing, B-lineage cell growth, and angiogenesis (De La Luz Sierra et al.). SDF-1 beta binds primarily to CXC receptor 4 (CXCR4, CD184); this receptor has also been shown to serve as a co-receptor for T cell-tropic HIV-1. The SDF-1 beta/CXCR4 axis is involved in tumor progression, angiogenesis, metastasis, and survival (Teicher & Fricker). SDF-1 beta is highly expressed in lymph nodes, lung, liver, and bone marrow under homeostatic conditions, and it modulates immune surveillance and development (Sánchez-Martín et al.).

## Product Information

**Alternative Names:** PBSF, Pre-B-cell growth-stimulating factor, SDF-1 $\beta$ , Stromal cell-derived factor-1  
**Accession Number:** P40224  
**Amino Acid Sequence:** KPVLSYRCP CRFFESHIAR ANVKHLKILN TPNCALQIVA RLKNNNRQVC IDPKLKWIQE YLEKALNKRL KM  
**Predicted Molecular Mass:** 8.5 kDa  
**Species:** Mouse  
**Cross Reactivity:** Human  
**Formulation:** Lyophilized after dialysis against phosphate-buffered saline.  
**Source:** CHO

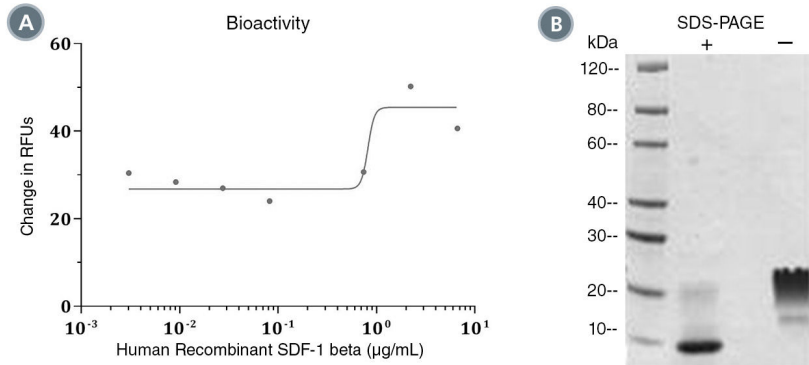
## Specifications

**Activity:** The specific activity is  $\geq 400$  units/mg ( $EC_{50} \leq 2.5$  µg/mL) as determined by Ca<sup>2+</sup> mobilization assay in CHO-K1/G $\alpha$ 15/mCXCR4 cells (human G $\alpha$ 15 and mouse CXCR4 stably expressed in CHO-K1 cells).  
**Purity:**  $\geq 95\%$   
**Endotoxin Level:** Measured by kinetic Limulus amoebocyte lysate (LAL) analysis and is  $\leq 0.2$  EU/µg protein.

## Preparation and Storage

**Storage:** Store at -80°C.  
**Stability:** Stable as supplied for 12 months from date of receipt.  
**Preparation:** Centrifuge vial before opening. Reconstitute the product in sterile water to at least 0.1 mg/mL by pipetting the solution down the sides of the vial. Do not vortex. As a general guide, do not store at 2 - 8°C for more than 1 week or at -20°C for more than 3 months. Avoid repeated freeze-thaw cycles.

## Data



(A) The biological activity of Human Recombinant SDF-1 beta (CXCL12) was tested by its ability to mobilize  $\text{Ca}^{2+}$  in CHO-K1/ $\text{G}\alpha 15/\text{mCXCR4}$  cells (human  $\text{G}\alpha 15$  and mouse CXCR4 stably expressed in CHO-K1 cells).  $\text{Ca}^{2+}$  mobilization was measured using a fluorometric assay method. The  $\text{EC}_{50}$  is defined as the effective concentration of the growth factor at which  $\text{Ca}^{2+}$  mobilization is at 50% of maximum. The  $\text{EC}_{50}$  in the above example is less than 2.5 µg/mL.

(B) 5 µg of Human Recombinant SDF-1 beta (CXCL12) was resolved with SDS-PAGE under reducing (+) and non-reducing (-) conditions and visualized by Coomassie Blue staining. Human Recombinant SDF-1 beta (CXCL12) has a predicted molecular mass of 8.5 kDa.

## Related Products

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## References

- De La Luz Sierra M et al. (2004) Differential processing of stromal-derived factor-1alpha and stromal-derived factor-1beta explains functional diversity. *Blood* 103(7): 2452–9.
- Janowski M. Functional diversity of SDF-1 splicing variants. *Cell Adh Migr* 3(3): 243–9.
- Sánchez-Martín L et al. (2013) CXCR7 impact on CXCL12 biology and disease. *Trends Mol Med* 19(1): 12–22.
- Teicher BA & Fricker SP. (2010) CXCL12 (SDF-1)/CXCR4 pathway in cancer. *Clin Cancer Res* 16(11): 2927–31.

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