

Cytokines

Mouse Recombinant SDF-1 beta (CXCL12)

Stromal cell-derived factor 1 beta



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Catalog # 78101
78101.1

10 µg
50 µg

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 α (89 amino acids) and SDF-1 β (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 β , Stromal cell-derived factor-1
Accession Number: P40224
Amino Acid Sequence: KPVSLSYRCP 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

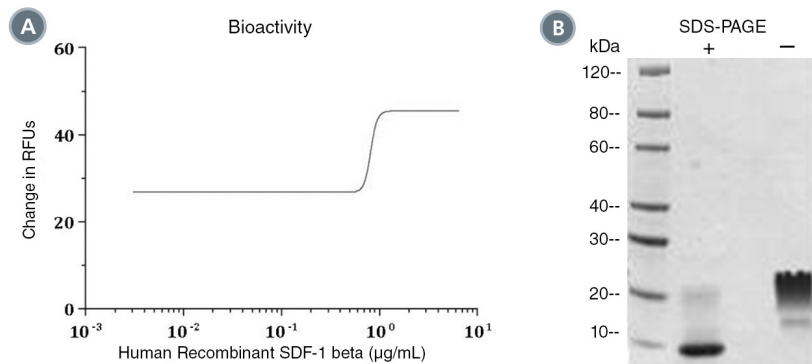
Specifications

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

Preparation and Storage

Storage: Store at $-80^{\circ}C$.
Stability: Stable as supplied for 12 months from date of receipt.
Preparation: Centrifuge vial before opening. Resuspend the product in sterile water or phosphate-buffered saline to at least 0.1 mg/mL by pipetting the solution down the sides of the vial. Do not vortex. Store at $2 - 8^{\circ}C$ for up to 1 week or at $-20^{\circ}C$ to $-80^{\circ}C$ for up to 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 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). Ca^{2+} mobilization was measured using a fluorometric assay method. The EC_{50} is defined as the effective concentration of the growth factor at which Ca^{2+} mobilization is at 50% of maximum. The EC_{50} in the example above is less than 2.5 $\mu\text{g/mL}$.

(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

For a complete list of cytokines, as well as related products available from STEMCELL Technologies, please visit our website at www.stemcell.com/cytokines or contact us at techsupport@stemcell.com.

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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