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Product Data Sheet

Recombinant Human CXCL12 (SDF-1α) (carrier-free)

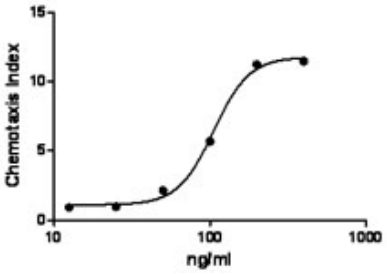
Catalog # / Size: 581202 / 10 µg
581204 / 25 µg
581206 / 100 µg
581208 / 500 µg

Source: Human SDF, amino acids Lys22-Lys89 (Accession # NM_199168) was expressed in *E. coli.*

Molecular Mass: The 68 amino acid recombinant protein has a predicted molecular mass of approximately 7963.4 Da. The DTT-reduced protein migrates at approximately 7kDa and the non-reduced protein migrates at approximately 9kDa by SDS-PAGE. The N-terminal amino acid is Lysine.

Purity: Purity is >98%, as determined by Coomassie stained SDS-PAGE.

Endotoxin Level: Endotoxin level is <0.1 EU/µg (<0.01ng/µg) protein as determined by the LAL method.



Bioassay for human SDF-1

Activity: Bioactivity was measured by its property to chemoattract resting human T cells in a dose dependent manner. The ED_{50} is 80 - 120 ng/ml, corresponding to a specific activity of 1.25-0.83 x 10^4 units/mg.

Preparation: 10-100µg sizes are bottled at 200µg/mL. 500µg sizes and larger are bottled at the concentration indicated on the vial.

Formulation: 0.22µm filtered protein solution is in 20mM Tris pH 8.0, 0.5M NaCl.

Storage: Unopened vial can be stored at 4°C for three months, at -20°C for six months, or at -70°C for one year. For maximum results, quick spin vial prior to opening. Stock solutions should be prepared at no less than 10µg/mL in buffer containing carrier protein such as 1% BSA or HSA or 10% FBS. For long term-storage, aliquot into polypropylene vials and store in a manual defrost freezer. **Avoid repeated freeze/thaw cycles.**

Applications:

Applications: Bioassay

Description: Human SDF-1 belongs to the CXCL chemokine family. The mouse cDNA SDF was initially cloned from a bone marrow stromal cell library, and the human was cloned from a pro-B-cell cDNA library. SDF is expressed by many organs, and it is most abundantly expressed in pancreas, spleen, ovary and small intestine. SDF-1 (CXCL12) and its receptor CXCR4 are involved in regulation of migration, survival, and development of multiple cell types, including human hematopoietic CD34+/CD38-/low and stromal STRO-1+ stem cells. Stress-induced modulations in SDF-1 and CXCR4 levels participate in recruitment of immature and maturing leukocytes from the BM reservoir to damaged organs as part of host defense and repair mechanism. SDF-1 (CXCL12)/CXCR4 system is involved in the establishment of organ metastasis in different cancers, for example in lymph node metastasis in breast cancer and oral squamous cell carcinoma (SCC), and peritonel metastasis in ovarian cancer. Recently, several studies have demonstrated the existence of a small subset of cancer cells which share many characteristics with stem cells and named cancer stem cells (CSC). They constitute a reservoir of self-sustaining cells with the ability to maintain the tumor growth. Most of them express CXCR4 receptor and respond to a chemotactic gradient of its specific ligand SDF-1, suggesting that CSC probably represent a subpopulation capable of initiating metastasis.

Antigen References:
1. Shirozu M, *et al.* 1995 *Genomics* 28:495-500.
2. Dar A, *et al.* 2006 *Exp Hemathol* 34:967-975.
3. Muller A, *et al.* 2001 *Nature* 410(6824):50-56.
4. Gelmini S, *et al.* 2008 *J Endocrinol Invest* 31:809-819.
5. Zlotnik A, *et al.* 2008 *J Pathol* 215:211-213.

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