Recombinant Mouse CXCL12/SDF-1α

Catalog Number: 460-SD

DESCRIPTION

Source	*E. coli*-derived Lys22-Lys89 Accession # P40224
N-terminal Sequence Analysis	Lys22
Predicted Molecular Mass	8 kDa

SPECIFICATIONS

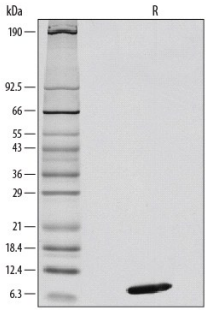
Activity	Measured by its ability to chemoattract BaF3 mouse pro-B cells transfected with human CXCR4. The ED_{50} for this effect is typically 0.15-0.6 ng/mL. Measured by its ability to chemoattract 5-10 day cultured human peripheral blood lymphocytes (PBL). The ED_{50} for this effect is typically 3-9 ng/mL.
Endotoxin Level	<0.01 EU per 1 µg of the protein by the LAL method.
Purity	>97%, by SDS-PAGE under reducing conditions and visualized by silver stain.
Formulation	Lyophilized from a 0.2 µm filtered solution in Acetonitrile and TFA with BSA as a carrier protein. See Certificate of Analysis for details.

PREPARATION AND STORAGE

Reconstitution	Reconstitute at 100 µg/mL in sterile PBS containing at least 0.1% human or bovine serum albumin.
Shipping	The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below.
Stability & Storage	**Use a manual defrost freezer and avoid repeated freeze-thaw cycles.** • 12 months from date of receipt, -20 to -70 °C as supplied. • 1 month, 2 to 8 °C under sterile conditions after reconstitution. • 3 months, -20 to -70 °C under sterile conditions after reconstitution.

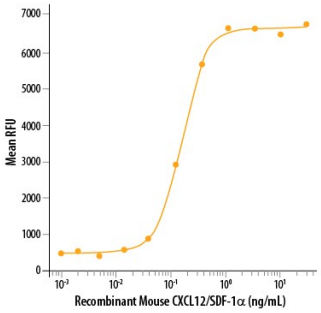
DATA

SDS-PAGE



1 µg/lane of Recombinant Mouse CXCL12/SDF-1α was resolved with SDS-PAGE under reducing (R) conditions and visualized by silver staining, showing a single band at 7 kDa.

Bioactivity



Recombinant Mouse CXCL12/SDF-1α (Catalog # 460-SD) chemoattracts the BaF3 mouse pro-B cells transfected with human CXCR4. The ED_{50} for this effect is typically 0.15-0.6 ng/mL.

BACKGROUND

SDF-1α and SDF-1β, members of the chemokine α 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, and were named Pre-B-Cell Growth Stimulating Factor (PBSF). SDF-1α and SDF-1β cDNAs encode precursor proteins of 89 and 93 amino acid residues, respectively. Both SDF-1α and SDF-1β 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-1β and absent from SDF-1α. 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.

References:

1. Ma, Q. *et al.* (1998) Proc. Natl. Acad. Sci. USA **95**:9448.
2. Zou, Y.R. *et al.* (1998) Nature **393**:595.
3. Tachibana, K. *et al.* (1998) Nature **393**:591.

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