Recombinant Human/Feline/Rhesus Macaque CXCL12/SDF-1α

Catalog Number: 350-NS/CF

DESCRIPTION

Source	*E. coli*-derived Lys22-Lys89 Accession # P48061
N-terminal Sequence Analysis	Lys22
Predicted Molecular Mass	8.0 kDa

SPECIFICATIONS

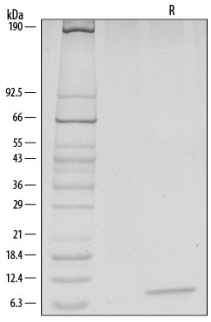
SDS-PAGE	7 kDa, reducing confitions
Activity	Measured by its ability to chemoattract 5-10 day cultured human peripheral blood lymphocytes (PBL). The ED_{50} for this effect is typically 3-9 ng/mL. Measured by its ability to chemoattract BaF3 mouse pro-B cells transfected with human CXCR4. The ED_{50} for this effect is typically 0.15-0.6 ng/mL.
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. See Certificate of Analysis for details.

PREPARATION AND STORAGE

Reconstitution	Reconstitute at 100 µg/mL in sterile PBS.
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.

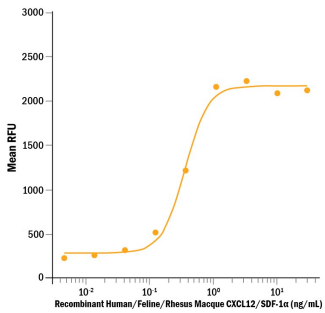
DATA

SDS-PAGE



1 µg/lane of Recombinant Human/Rhesus Macaque/Feline 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 Human/Rhesus Macaque/Feline CXCL12/SDF-1α (Catalog # 350-NS/CF) 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 are the first cytokines 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-1α and SDF-1β cDNAs encode precursor proteins of 89 and 93 amino acid residues, respectively. 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. The amino acid sequence of SDF-1/PBSF identified the protein to be a member of the chemokine α subfamily that lacks the ELR domain. Unlike other known chemokine α and β subfamily members that cluster on chromosomes 4 and 17, respectively, SDF-1/PBSF was mapped to chromosome 10q11.1. SDF-1/PBSF is highly conserved between species, with only one amino acid substitution between the mature human and mouse proteins. SDF-1/PBSF has been found to be a chemoattractant for T-lymphocytes and monocytes, but not neutrophils. SDF-1/PBSF was shown to be a ligand for CXCR4 (fusin/LESTR) receptor that functions as a co-receptor for lymphocyte-tropic HIV-1 strains. SDF-1/PBSF has been found to be a powerful inhibitor of infection by lymphocyte-tropic HIV-1 strains.

References:

1. Tashiro, K. *et al.* (1993) Science **261**:600.
2. Bleul, C. *et al.* (1996) Nature **382**:829.
3. Oberlin, E. *et al.* (1996) Nature **382**:833.

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