abcam

Product datasheet

Recombinant rat SDF1 protein (Active) ab245803

Description

Product name	Recombinant rat SDF1 protein (Active)
Biological activity	Determined by its ability to chemoattract human monocytes using a concentration range of 100.0-200.0 ng/ml.
Purity	> 95 % SDS-PAGE. >95 % by HPLC.
Expression system	Escherichia coli
Accession	Q9QZD1
Protein length	Full length protein
Animal free	No
Nature	Recombinant
Species	Rat
Sequence	KPVSLSYRCPCRFFESHVARANVKHLKILNTPNCALQIVAR LKSNNRQVC IDPKLKWIQEYLDKALNKRLKM
Predicted molecular weight	9 kDa
Amino acids	22 to 89
Additional sequence information	Full length mature chain without signal peptide.

Specifications

Our **Abpromise guarantee** covers the use of **ab245803** in the following tested applications.

The application notes include recommended starting dilutions; optimal dilutions/concentrations should be determined by the end user.

Applications	Functional Studies SDS-PAGE HPLC
Form	Lyophilized

Preparation and Storage

Stability and Storage	Shipped at 4°C. Store at +4°C short term (1-2 weeks). Upon delivery aliquot. Store at -20°C or -80°C. Avoid freeze / thaw cycle. Lyophilized with no additives.

	This product is an active protein and may elicit a biological response in vivo, handle with caution.
Reconstitution	Reconstitute in water to 0.1-1.0 mg/ml.

General Info

Function	Chemoattractant active on T-lymphocytes, monocytes, but not neutrophils. Activates the C-X-C chemokine receptor CXCR4 to induce a rapid and transient rise in the level of intracellular calcium ions and chemotaxis. Also binds to atypical chemokine receptor ACKR3, which activates the beta-arrestin pathway and acts as a scavenger receptor for SDF-1. SDF-1-beta(3-72) and SDF-1-alpha(3-67) show a reduced chemotactic activity. Binding to cell surface proteoglycans seems to inhibit formation of SDF-1-alpha(3-67) and thus to preserve activity on local sites. Acts as a positive regulator of monocyte migration and a negative regulator of monocyte adhesion via the LYN kinase. Stimulates migration of monocytes and T-lymphocytes through its receptors, CXCR4 and ACKR3, and decreases monocyte adherence to surfaces coated with ICAM-1, a ligand for beta-2 integrins. SDF1A/CXCR4 signaling axis inhibits beta-2 integrin LFA-1 mediated adhesion of monocytes to ICAM-1 through LYN kinase. Inhibits CXCR4-mediated infection by T-cell line-adapted HIV-1. Plays a protective role after myocardial infarction. Induces down-regulation and internalization of ACKR3 expressed in various cells. Has several critical functions during embryonic development; required for B-cell lymphopoiesis, myelopoiesis in bone marrow and heart ventricular septum formation.
Tissue specificity	Isoform Alpha and isoform Beta are ubiquitously expressed, with highest levels detected in liver, pancreas and spleen. Isoform Gamma is mainly expressed in heart, with weak expression detected in several other tissues. Isoform Delta, isoform Epsilon and isoform Theta have highest expression levels in pancreas, with lower levels detected in heart, kidney, liver and spleen.
Sequence similarities	Belongs to the intercrine alpha (chemokine CxC) family.
Developmental stage	Isoform Alpha is ubiquitously expressed in fetal tissues. Isoform Beta and isoform Delta have more limited expression patterns, with highest levels detected in fetal spleen and fetal liver, respectively. Isoform Gamma and isoform Theta are weakly detected in fetal kidney.
Post-translational modifications	Processed forms SDF-1-beta(3-72) and SDF-1-alpha(3-67) are produced after secretion by proteolytic cleavage of isoforms Beta and Alpha, respectively. The N-terminal processing is probably achieved by DPP4. Isoform Alpha is first cleaved at the C-terminus to yield a SDF-1-alpha(1-67) intermediate before being processed at the N-terminus. The C-terminal processing of isoform Alpha is reduced by binding to heparin and, probably, cell surface proteoglycans.
Cellular localization	Secreted.

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