

Product datasheet

Recombinant human SDF1 protein (Active) ab259416

[1 References](#) [4 Images](#)

Description

Product name	Recombinant human SDF1 protein (Active)	
Biological activity	Fully biologically active determined by the dose dependant migration of THP-1 cells. ED ₅₀ is ≤ 40 ng/mL, corresponding to a specific activity of 2.50 x 10 ⁴ units/mg.	
Purity	≥ 95 % SDS-PAGE. ≥ 95 % HPLC.	
Endotoxin level	≤ 0.005 Eu/μg	
Expression system	HEK 293 cells	
Accession	<u>P48061</u>	
Protein length	Protein fragment	
Animal free	Yes	
Carrier free	Yes	
Nature	Recombinant	
Species	Human	
Sequence	KPVLSYRCP CRFFESHVARANVKHLKILNTPNCALQIVAR LKNNNRQVC IDPKLKWIQEYLEKALNK	
Predicted molecular weight	8 kDa	
Molecular weight information	(M-Lys) +/- 0.1 Da (C-terminal Lys loss; calc. mass 7892 Da)	
Amino acids	22 to 89	
Additional sequence information	N-terminal glycine.	

Specifications

Our **Abpromise guarantee** covers the use of **ab259416** 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
	Cell Culture
	Mass Spectrometry
	HPLC
	SDS-PAGE

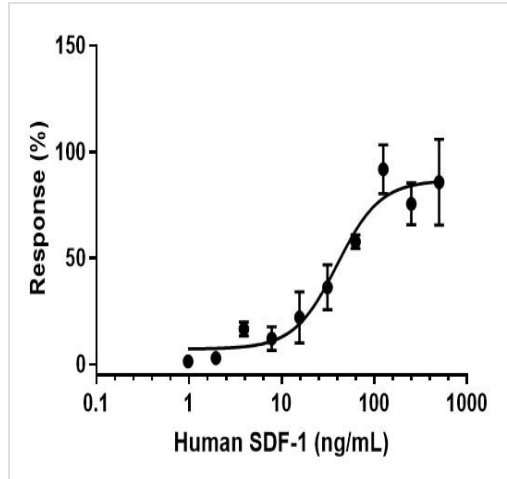
Form	Lyophilized
Additional notes	<p>This protein is filter sterilised prior to aliquoting and lyophilisation. All aliquoting and lyophilisation steps are performed in a sterile environment.</p> <p>This protein could lose the C-terminal Lys, but this does not affect performance.</p>
Preparation and Storage <hr/>	
Stability and Storage	<p>Shipped at Room Temperature. Store at Room Temperature.</p> <p>pH: 6.00</p> <p>Constituents: 0.727% Dibasic monohydrogen potassium phosphate, 0.248% Monobasic dihydrogen potassium phosphate, 10.26% Trehalose</p> <p>Buffer lyophilized from.</p> <p>This product is an active protein and may elicit a biological response in vivo, handle with caution.</p>
Reconstitution	<p>Reconstitute with phosphate buffered saline. Store lyophilized form at room temperature.</p> <p>Reconstitute, aliquot and store at -80°C for 12 months or +4°C for 1 week. Avoid repeated freeze-thaw. Lyophilized contents may appear as either a translucent film or a white powder. This variance does not affect the quality of the product.</p>
General Info <hr/>	
Function	<p>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.</p>
Tissue specificity	<p>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.</p>
Sequence similarities	<p>Belongs to the intercrine alpha (chemokine CxC) family.</p>
Developmental stage	<p>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.</p>
Post-translational modifications	<p>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-</p>

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.

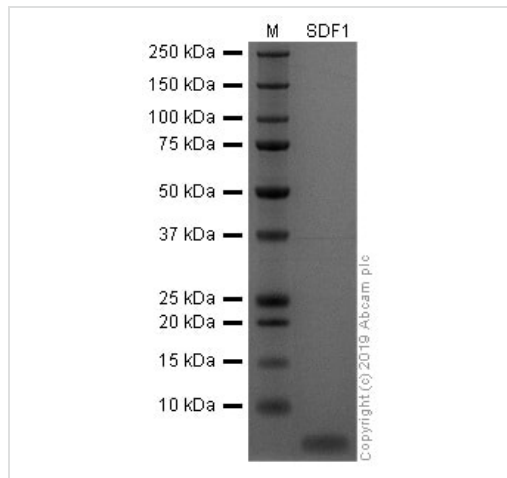
Images



Fully biologically active determined by the dose dependant migration of THP-1 cells.

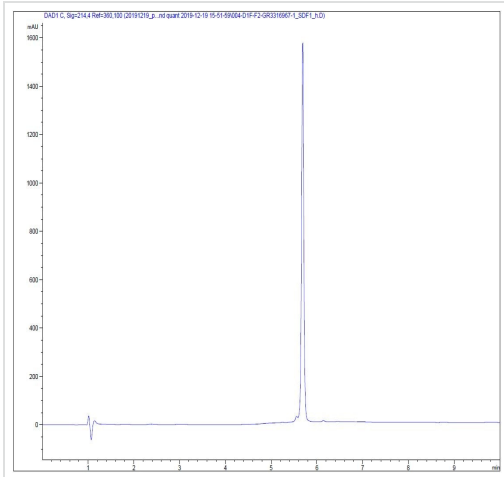
ED₅₀ is ≤ 40 ng/mL, corresponding to a specific activity of 2.50×10^4 units/mg.

Functional Studies - Recombinant human SDF1 protein (Active) (ab259416)



SDS-PAGE analysis of ab259416.

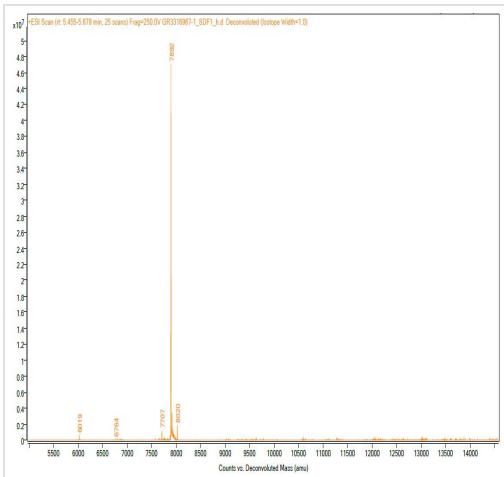
SDS-PAGE - Recombinant human SDF1 protein (Active) (ab259416)



HPLC - Recombinant human SDF1 protein (Active)
(ab259416)

Purity: 98.5%

The spectrum was recorded using a 1260 Infinity II HPLC system with DAD and a MabPac RP column (3.0x100 mm, 4 μ m). 5 μ L of purified protein was injected and the gradient run from 80 % water:TFA (99.9:0.1 v/v) and 20 % acetonitrile:water:TFA (90:9.9:0.1 v/v/v) to 20 % water:TFA (99.9:0.1 v/v) and 80 % acetonitrile:water:TFA (90:9.9:0.1 v/v/v) within 3 minutes followed by an isocratic step for another 3 min. Flow rate was 0.5 mL/min and the column compartment temperature was 50 $^{\circ}$ C.



Mass Spectrometry - Recombinant human SDF1
protein (Active) (ab259416)

(M-Lys) +/- 0.1 Da (C-terminal Lys loss; calc. mass 7892 Da)

The spectrum was recorded with a 6545XT AdvanceBio LC/Q-TOF (Agilent Technologies) and a MabPac RP column (42.1x50 mm, 4 μ m, Thermo Scientific). 5 μ L of purified protein was injected and the gradient run from 85 % water:FA (99.9:0.1 v/v) and 15 % acetonitrile:FA (90:9.9:0.1 v/v/v) to 55 % water:FA (99.9:0.1 v/v) and 45 % acetonitrile:FA (90:9.9:0.1 v/v/v) within 3 minutes followed by an isocratic step for another 2.5 min. Flow rate was 0.4 mL/min and the column compartment temperature was 60 $^{\circ}$ C. Data was analysed and deconvoluted using the Bioconfirm software (Agilent Technologies).

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