

# SDF-1 (F-4): sc-518066

## BACKGROUND

The C-X-C or  $\alpha$  chemokine family is characterized by a pair of cysteine residues separated by a single amino acid and primarily functions as chemoattractants for neutrophils. The C-X-C family includes IL-8, NAP-2, MSGA and stromal cell-derived factor-1, or SDF-1. SDF-1 was originally described as a pre-B cell stimulatory factor, but has now been shown to function as a potent chemoattractant for T cells and monocytes, but not neutrophils. Receptors for the C-X-C family are G protein-coupled, seven-pass, transmembrane domain proteins which include IL-8RA, IL-8RB and fusin (also designated LESTR or CXCR-4). Fusin is highly homologous to the IL-8 receptors, sharing 37% sequence identity at the amino acid level. The IL-8 receptors bind to IL-8, NAP-2 and MSGA, while fusin binds to its cognate ligand, SDF-1. Fusin has been identified as the major co-receptor for T-tropic HIV-1, and SDF-1 has been shown to inhibit HIV-1 infection. Six human SDF-1 isoforms exist due to alternative splicing of CXCL12, the gene encoding SDF-1. Three isoforms are known for mouse and rat.

## REFERENCES

1. Laterveer, L., et al. 1996. Rapid mobilization of hematopoietic progenitor cells in rhesus monkeys by a single intravenous injection of Interleukin-8. *Blood* 87: 781-788.
2. Deng, H., et al. 1996. Identification of a major co-receptor for primary isolates of HIV-1. *Nature* 381: 661-666.
3. Nagasawa, T., et al. 1996. Defects of B cell lymphopoiesis and bone-marrow myelopoiesis in mice lacking the C-X-C chemokine PBSF/SDF-1. *Nature* 382: 635-638.
4. Bleul, C.C., et al. 1996. The lymphocyte chemoattractant SDF-1 is a ligand for LESTR/fusin and blocks HIV-1 entry. *Nature* 382: 829-833.

## CHROMOSOMAL LOCATION

Genetic locus: CXCL12 (human) mapping to 10q11.21.

## SOURCE

SDF-1 (F-4) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 66-92 at the C-terminus of SDF-1 of human origin.

## PRODUCT

Each vial contains 200  $\mu$ g IgG<sub>2b</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

SDF-1 (F-4) is available conjugated to agarose (sc-518066 AC), 500  $\mu$ g/0.25 ml agarose in 1 ml, for IP; to HRP (sc-518066 HRP), 200  $\mu$ g/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-518066 PE), fluorescein (sc-518066 FITC), Alexa Fluor® 488 (sc-518066 AF488), Alexa Fluor® 546 (sc-518066 AF546), Alexa Fluor® 594 (sc-518066 AF594) or Alexa Fluor® 647 (sc-518066 AF647), 200  $\mu$ g/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-518066 AF680) or Alexa Fluor® 790 (sc-518066 AF790), 200  $\mu$ g/ml, for Near-Infrared (NIR) WB, IF and FCM.

## RESEARCH USE

For research use only, not for use in diagnostic procedures.

## APPLICATIONS

SDF-1 (F-4) is recommended for detection of all known isoforms of SDF-1 of human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2  $\mu$ g per 100-500  $\mu$ g of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

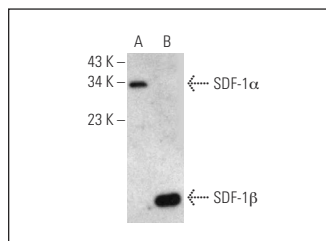
Suitable for use as control antibody for SDF-1 siRNA (h): sc-39367, SDF-1 shRNA Plasmid (h): sc-39367-SH and SDF-1 shRNA (h) Lentiviral Particles: sc-39367-V.

Molecular Weight of SDF-1: 10 kDa.

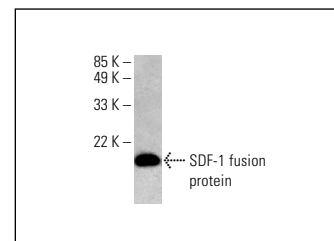
## RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG $\kappa$  BP-HRP: sc-516102 or m-IgG $\kappa$  BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgG $\kappa$  BP-FITC: sc-516140 or m-IgG $\kappa$  BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

## DATA



SDF-1 (F-4): sc-518066. Western blot analysis of SDF-1 expression in human SDF-1 $\alpha$  sc-4654 (A) and human SDF-1 $\beta$  sc-4655 (B) fusion proteins. Detection reagent used: m-IgG $\kappa$  BP-HRP (Cruz Marker): sc-516102-CM.



SDF-1 (F-4): sc-518066. Western blot analysis of human recombinant SDF-1 fusion protein.

## SELECT PRODUCT CITATIONS

1. Zhou, W., et al. 2020. Discovery of exosomes from tick saliva and salivary glands reveals therapeutic roles for CXCL12 and IL-8 in wound healing at the tick-human skin interface. *Front. Cell Dev. Biol.* 8: 554.
2. Lu, G., et al. 2023. Neuroprotective effects of human-induced pluripotent stem cell-derived mesenchymal stem cell extracellular vesicles in ischemic stroke models. *Biomedicines* 11: 2550.

## STORAGE

Store at 4° C, \*\*DO NOT FREEZE\*\*. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

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