abcam

## ab155090

# Anti-SDF1 antibody [EPR1216]

Anti-SDF1 antibody [EPR1216] (ab155090) is a rabbit monoclonal antibody detecting SDF1 in **Western Blot, Flow Cytometry (Intra), ICC/IF**. Suitable for **Human**.

- KO validated for confirmed specificity
- Biophysical QC for unrivalled batch-batch consistency
- Over 20 publications

Recombinant | RabMAb | KO Validated | 20ul selling size

## Key facts

| | |
|---|---|
| **Isotype** | IgG |
| **Host species** | Rabbit |
| **Storage buffer** | pH: 7.2 - 7.4 Preservative: 0.01% Sodium azide Constituents: PBS, 50% Tissue culture supernatant, 40% Glycerol (glycerin, glycerine), 0.05% BSA |
| **Form** | Liquid |
| **Clonality** | Monoclonal |
| **Immunogen** | The exact immunogen used to generate this antibody is proprietary information. |
| **Clone number** | EPR1216 |
| **Purification technique** | Affinity purification Protein A |
| **Specificity** | Mouse cross reactivity based on sequence analysis only. 100% sequence homology for isforms 1-6 (P48061; isoforms 1-6).<br>This antibody is not suitable for endogenous detection in Western blot application. |
| **Concentration** | 0.181 mg/mL The concentration of this product may be batch-dependent<br>Batch concentration finder → |

## Reactivity data

## IP

### Not recommended

| | |
|---|---|
| **Species** | Human, Mouse, Recombinant full length protein - Human, Rat |
| **Dilution info** | - |
| **Notes** | - |

## WB

### Tested

| | |
|---|---|
| **Species** | Recombinant full length protein - Human |
| **Dilution info** | 1/10000 - 1/50000 |
| **Notes** | - |

| | |
|---|---|
| **Species** | Human |
| **Dilution info** | 1/500 - 1/50000 |
| **Notes** | - |

### Not recommended

| | |
|---|---|
| **Species** | Mouse, Rat |
| **Dilution info** | - |
| **Notes** | - |

## ICC/IF

### Tested

| | |
|---|---|
| **Species** | Human |
| **Dilution info** | 1/100 - 1/250 |
| **Notes** | - |

### Predicted

| | |
|---|---|
| **Species** | Mouse |
| **Dilution info** | - |

| | |
|---|---|
| **Notes** | - |

### Not recommended

| | |
|---|---|
| **Species** | Recombinant full length protein - Human, Rat |
| **Dilution info** | - |
| **Notes** | - |

## Flow Cyt (Intra)

### Tested

| | |
|---|---|
| **Species** | Human |
| **Dilution info** | 1/20 |
| **Notes** | ab172730 - Rabbit monoclonal IgG, is suitable for use as an isotype control with this antibody. |

### Predicted

| | |
|---|---|
| **Species** | Mouse |
| **Dilution info** | - |
| **Notes** | - |

### Not recommended

| | |
|---|---|
| **Species** | Recombinant full length protein - Human, Rat |
| **Dilution info** | - |
| **Notes** | - |

## Target data

See full target information CXCL12

| | |
|---|---|
| **Function** | Chemoattractant active on T-lymphocytes and monocytes but not neutrophils (PubMed:18802065, PubMed:39093700). Activates the C-X-C chemokine receptor CXCR4 to induce a rapid and transient rise in the level of intracellular calcium ions and chemotaxis (PubMed:8752281, PubMed:18802065, PubMed:39093700). Also binds to atypical chemokine receptor ACKR3, which activates the beta-arrestin pathway and acts as a scavenger receptor for CXCL12/SDF-1 (PubMed:16107333, |

PubMed:19255243). Binds to the allosteric site (site 2) of integrins and activates integrins ITGAV:ITGB3, ITGA4:ITGB1 and ITGA5:ITGB1 in a CXCR4-independent manner (PubMed:29301984). Acts as a positive regulator of monocyte migration and a negative regulator of monocyte adhesion via the LYN kinase (PubMed:18802065). 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 (PubMed:16107333, PubMed:18802065, PubMed:19255243, PubMed:39093700). CXCR4 signaling axis inhibits beta-2 integrin LFA-1 mediated adhesion of monocytes to ICAM-1 through LYN kinase (PubMed:18802065). Inhibits CXCR4-mediated infection by T-cell line-adapted HIV-1 (PubMed:8752281). 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 (By similarity). Stimulates the proliferation of bone marrow-derived B-cell progenitors in the presence of IL7 as well as growth of stromal cell-dependent pre-B-cells (By similarity). SDF-1-beta(3-72). Shows a reduced chemotactic activity. SDF-1-alpha(3-67). Shows a reduced chemotactic activity (PubMed:14525775). Binding to cell surface proteoglycans seems to inhibit formation of SDF-1-alpha(3-67) and thus to preserve activity on local sites (PubMed:14525775).

## Storage

| | |
|---|---|
| **Shipped at conditions** | Conditional Ambient |
| **Appropriate short-term storage duration** | 1-2 weeks |
| **Appropriate short-term storage conditions** | +4°C |
| **Appropriate long-term storage conditions** | -20°C |
| **Aliquoting information** | Upon delivery aliquot |
| **Storage information** | Avoid freeze / thaw cycle |

## Notes

**What is this antibody validated in?**
Anti-SDF1 antibody [EPR1216] (ab155090) is a rabbit recombinant monoclonal antibody and is validated for use in Western Blot (WB), Flow Cytometry (Intra), Immunocytochemistry/immunofluorescence (ICC/IF) in Human samples.

**What is the molecular weight of SDF1?**
Anti-SDF1 [EPR1216] (ab155090) specifically detects a band for SDF1 (UniProt: P48061) at a molecular weight of 11kDa.

**Trusted by the scientific community**
Anti-SDF1 [EPR1216] (ab155090) was first used in a scientific publication in 2013 and has been cited over 20 times in peer-reviewed journals.

**Other related products**
We have a range of other formats of antibody clone [EPR1216] also available for your convenience: ab155090, Carrier free - ab157772, Alexa Fluor® 488 - ab217985, Alexa Fluor® 594 - ab218284, Alexa Fluor® 555 - ab218285, Carrier free - ab271917

**Patented technology**
Our RabMAb® technology is a patented hybridoma-based technology for making rabbit monoclonal antibodies. For details on our patents, please refer to RabMAb® patents.

**What are the advantages of a recombinant monoclonal antibody?**
This product is a recombinant monoclonal antibody, which offers several advantages including:

- High batch-to-batch consistency and reproducibility
- Improved sensitivity and specificity
- Long-term security of supply
- Animal-free batch production

For more information, read more on recombinant antibodies.

**Species reactivity**
Rat: We have preliminary internal testing data to indicate this antibody may not react with this species.
Please contact us for more information.

**Trial sizes available!**
Test your antibody or perform pre-screening before committing to a larger quantity. Sold in 20µl. Discover our selection of trial-size antibodies.

## Supplementary info

This supplementary information is collated from multiple sources and compiled automatically.

| | |
|---|---|
| **Activity summary** | The stromal cell-derived factor 1 (SDF1) also known as C-X-C motif chemokine 12 (CXCL12) is a chemokine protein that is important in immunological responses and cellular signaling. This protein weighs approximately 8 kDa. SDF1 is largely expressed in bone marrow stroma liver and endothelium of various tissues positioning it as an integral player in cell migration and homing processes. The protein functions as a chemoattractant for lymphocytes promoting cellular trafficking and organ development. |
| **Biological function summary** | SDF1 influences the migration and survival of hematopoietic progenitor cells. It plays a pivotal role in heart development angiogenesis and neuronal protein regulation. SDF1 binds with high affinity to its receptor CXCR4 forming a critical signal transduction complex that modulates cellular movement and growth responses. This interaction is important in the regulation of cell positioning and potential pathways of pathological changes. |
| **Pathways** | SDF1 has an important role in the chemokine signaling pathway and is involved in the pathways controlling hematopoietic stem cell migration and homing. The |

| | |
|---|---|
| | interaction between SDF1 and CXCR4 triggers downstream signaling events engaging proteins like PI3K and MAPK which promote cell survival and proliferation. Furthermore the SDF1/CXCR4 axis is central to the vascular endothelial growth factor (VEGF) pathway facilitating angiogenesis and tissue repair mechanisms. |
| **Associated diseases and disorders** | SDF1 relates closely to cancer metastasis and HIV infection. The SDF1/CXCR4 interaction acts as a co-receptor for HIV entry into host cells implicating it in viral pathogenesis. Overexpression of SDF1 and its binding partner CXCR4 contributes to tumor growth invasion and metastasis in various cancers by promoting angiogenesis and tumor cell migration. The targeting of the SDF1/CXCR4 axis holds therapeutic potential in cancer treatment and infectious disease management. |

## Product promise

**Tested**

We have tested this species and application combination and it works. It is covered by our product promise.

**Expected**

We have not tested this specific species and application combination in-house, but expect it will work. It is covered by our product promise.

**Predicted**

This species and application combination has not been tested, but we predict it will work based on strong homology. However, this combination is not covered by our product promise.

**Not recommended**

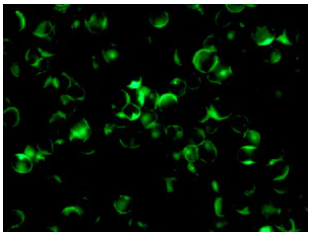
We do not recommend this combination. It is not covered by our product promise.

We are dedicated to supporting your work with high quality reagents and we are here for you every step of the way should you need us.

In the unlikely event of one of our products not working as expected, you are covered by our product promise.

Full details and terms and conditions can be found here:
Terms & Conditions.

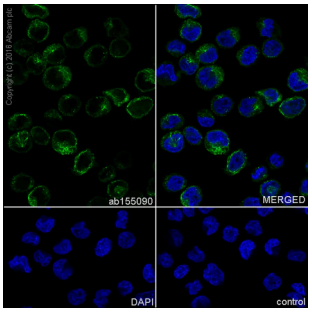
## 6 product images



## Immunocytochemistry/ Immunofluorescence - Anti-SDF1 antibody [EPR1216] (ab155090)

SDF1 Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-SDF1 antibody

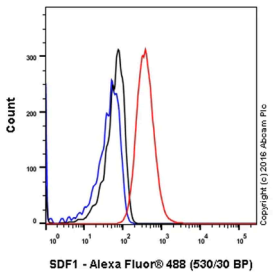
Immunofluorescent analysis of Jurkat cells labeling SDF1 with ab155090 at 1/100 dilution.




## Immunocytochemistry/ Immunofluorescence - Anti-SDF1 antibody [EPR1216] (ab155090)

SDF1 Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-SDF1 antibody

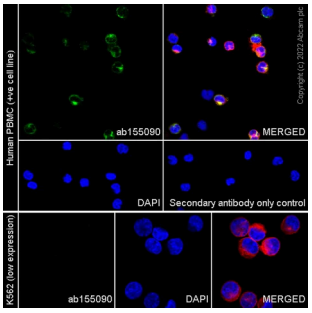
Immunocytochemistry/Immunofluorescence analysis of THP-1 (Human monocytic leukemia cell line) labeling SDF1 with Purified ab155090 at 1/500 dilution (5 µg/ml). Cells were fixed with 4% PFA and permeabilized with 0.1% tritonX-100. ab150077 Goat anti rabbit IgG(Alexa Fluor® 488) at 1/1000 dilution was used as the secondary antibody. Nuclei were counterstained with DAPI. PBS was used instead of the primary antibody as the negative control.




## Flow Cytometry (Intracellular) - Anti-SDF1 antibody [EPR1216] (ab155090)

SDF1 Flow Cytometry (Intracellular) staining using rabbit Anti-SDF1 antibody

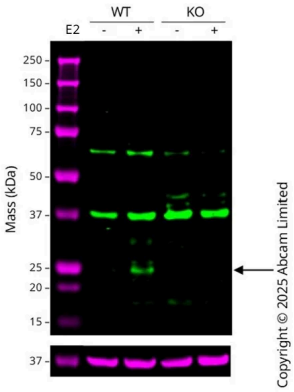
Intracellular Flow Cytometry analysis of Jurkat (human acute T cell leukemia) cells labeling SDF1 with purified ab155090 at 1/20 dilution (10ug/ml) (red). Cells were fixed with 4% paraformaldehyde and permeabilised with 90% methanol. A Goat anti rabbit IgG (Alexa Fluor® 488) (1/2000 dilution) was used as the secondary antibody. Rabbit monoclonal IgG (Black) was used as the isotype control, cells without incubation with primary antibody and secondary antibody (Blue) was used as the unlabeled control.




## Immunocytochemistry/ Immunofluorescence - Anti-SDF1 antibody [EPR1216] (ab155090)

SDF1 Immunocytochemistry/ Immunofluorescence staining of Human PBMC (Human primary peripheral blood mononuclear cell) cells using rabbit Anti-SDF1 antibody

Immunofluorescent analysis of 4% paraformaldehyde-fixed, 0.1% Triton X-100 permeabilized Human PBMC (Human primary peripheral blood mononuclear cell) cells labelling SDF1 with primary antibody anti-SDF1 (ab155090) at 1/100 dilution, followed by Alexa Fluor® 488 Goat anti-Rabbit secondary (ab150077) secondary antibody at 1/1000 dilution. Anti-alpha Tubulin antibody (DM1A) - Microtubule Marker (Alexa Fluor® 594) (ab195889) was used to counterstain tubulin at 1/200 dilution. The nuclear counter stain is DAPI (blue). Confocal image showing cytoplasmic staining in Human PBMC. Image was taken with a confocal microscope (Leica-Microsystems, TCS SP8).
**Low expression control:** K562 (PMID: 23473997)




# Western blot - Anti-SDF1 antibody [EPR1216] (ab155090)

SDF1 Western blot staining using rabbit Anti-SDF1 antibody

Western blot: Rabbit monoclonal [EPR1216] to SDF1 ab155090 staining at 1/500 dilution, shown in green; Mouse anti GAPDH (ab8245) loading control staining at 1/20,000 dilution, shown in magenta.
A band was observed at 25 kDa in E2 treated wild-type cell lysates with no signal observed at this size in E2 treated CXCL12 knockout MCF7.

To generate this image, samples were run on an SDS-PAGE gel then transferred onto a nitrocellulose membrane. Membranes were blocked in 3 % Milk in TBS-0.1 % Tween® 20 (TBS-T) before incubation with primary antibodies overnight at 4 °C. Blots were washed four times in TBS-T, incubated with secondary antibodies for 1 h at room temperature, washed again four times then imaged.

Secondary antibodies used were Goat anti-Rabbit 800CW & Goat anti-Mouse 680RD at 1/20,000 dilution.

All lanes:
Western blot - Anti-SDF1 antibody [EPR1216] (ab155090) at 1/500 dilution

Lane 1:
Untreated Wild-type MCF7 cell lysates at 20 µg

Lane 2:
E2 treated wild-type MCF7 cell lysates at 20 µg

Lane 3:
Untreated CXCL12 knockout MCF7 cell lysate at 20 µg

Lanes 3 - 4:
Western blot - Human CXCL12 knockout MCF7 cell line (ab281609)

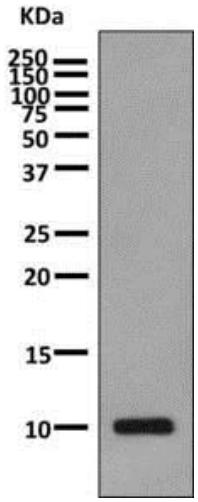
Lane 4:
E2 treated CXCL12 knockout MCF7 cell lysate at 20 µg

Secondary

All lanes:
Goat anti-Rabbit 800CW & Goat anti-Mouse 680RD at 1/20000 dilution

Predicted band size: 25 kDa

Observed band size: 25 kDa, 36 kDa




## Western blot - Anti-SDF1 antibody [EPR1216] (ab155090)

All lanes:
Western blot - Anti-SDF1 antibody [EPR1216] (ab155090) at 1/10000 dilution

All lanes:
Human CXCL12 recombinant protein at 0.01 µg

Secondary

All lanes:
Goat anti-rabbit HRP at 1/2000 dilution

Predicted band size: 10 kDa

Please note: All products are 'FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC OR THERAPEUTIC PROCEDURES'.