abcam

ab218511

Anti-S100A4 antibody [S100A4/1481]

KO Validated

Key facts

Isotype	IgG1
Host species	Mouse
Storage buffer	pH: 7.2 - 7.4 Preservative: 0.05% Sodium azide Constituents: PBS, 0.05% BSA
Form	Liquid
Clonality	Monoclonal
Immunogen	Recombinant Full Length Protein corresponding to Human S100A4. Database link P26447
Clone number	S100A4/1481
Purification technique	Affinity purification Protein G
Light chain type	kappa
Concentration	0.2 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

IHC-P

Tested

Species	Human
Dilution info	1-2 µg/mL
Notes	

Perform heat-mediated antigen retrieval with citrate buffer pH 6 before commencing with IHC staining protocol.

Predicted

Species	Mouse
Dilution info	-
Notes	-

Not recommended

Species	Recombinant full length protein - Human
Dilution info	-
Notes	-

Flow Cyt

Tested

Species	Human
Dilution info	1-2 µg/mL
Notes	-

Predicted

Species	Mouse
Dilution info	-
Notes	-

Not recommended

Species	Recombinant full length protein - Human
Dilution info	-
Notes	-

WB

Tested

Species	Human
Dilution info	1-2 µg/mL
Notes	-

Predicted

Species	Mouse
Dilution info	-
Notes	-

Not recommended

Species	Recombinant full length protein - Human
Dilution info	-
Notes	-

Protein Array

Tested

Species	Recombinant full length protein - Human
Dilution info	-
Notes	-

Expected

Species	Human
Dilution info	Use at an assay dependent concentration.
Notes	-

Predicted

Species	Mouse
Dilution info	-

Notes	-

Target data

See full target information S100A4

Function	Calcium-binding protein that plays a role in various cellular processes including motility, angiogenesis, cell differentiation, apoptosis, and autophagy (PubMed:16707441, PubMed:23752197, PubMed:30713770). Increases cell motility and invasiveness by interacting with non-muscle myosin heavy chain (NMMHC) IIA/MYH9 (PubMed:16707441). Mechanistically, promotes filament depolymerization and increases the amount of soluble myosin-IIA, resulting in the formation of stable protrusions facilitating chemotaxis (By similarity). Also modulates the pro-apoptotic function of TP53 by binding to its C-terminal transactivation domain within the nucleus and reducing its protein levels (PubMed:23752197). Within the extracellular space, stimulates cytokine production including granulocyte colony-stimulating factor and CCL24 from T-lymphocytes (By similarity). In addition, stimulates T-lymphocyte chemotaxis by acting as a chemoattractant complex with PGLYRP1 that promotes lymphocyte migration via CCR5 and CXCR3 receptors (PubMed:26654597, PubMed:30713770).

Storage

Shipped at conditions	Blue Ice
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

Supplementary info

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

Activity summary	S100A4 also known as metastasin or MTS1 is a protein with a molecular weight of approximately 12 kDa. It functions by binding calcium which induces conformational changes aiding in its interaction with target proteins. S100A4 is part of the S100 family of proteins characterized by two EF-hand calcium-binding motifs. Expression of S100A4 is observed in various cell types including fibroblasts

	endothelial cells and several tumor cells where it contributes to processes like cell motility invasion and angiogenesis.
Biological function summary	The role of S100A4 extends beyond mere calcium binding; it associates with the cytoskeleton promoting cell structures related to movement and metastasis. It does not act alone but often partners with proteins like myosin IIA to regulate cytoskeletal dynamics. Additionally S100A4 modulates extracellular matrix components and interacts with signaling pathways that control cancer progression making it significant in both normal physiological contexts and pathological states.
Pathways	Functional activities of S100A4 integrate into important pathways involved in cellular movement and metastasis. S100A4 plays roles in the regulation of the Wnt/β-catenin pathway which is pivotal for cell-cell interaction and fate determination. It also interacts with matrix metalloproteinases like MMPs thereby managing processes of tissue invasion and remodeling essential in cancer metastasis. Other pathways influencing cell adhesion and signal transduction may indirectly involve S100A4 through related proteins.
Associated diseases and disorders	Elevated S100A4 levels have implications in cancer particularly in enhancing metastasis in breast and colorectal cancers. The protein promotes tumor developments by inducing changes in the tumor microenvironment making it a target of interest in oncology. S100A4 also interacts with proteins like p53 and β-catenin which are critical in the pathology of tumors. Moreover S100A4 contributes to fibrotic diseases accentuating tissue remodeling activities by modulating fibroblast behavior and extracellular matrix deposition.

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

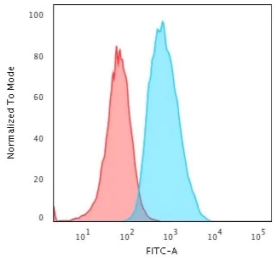
We do not recommend this combination. It is not covered by our product promise.

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.

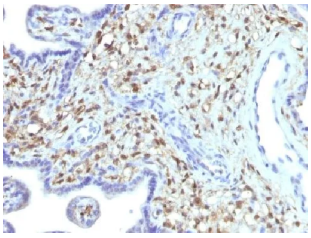
7 product images



Flow Cytometry - Anti-S100A4 antibody [S100A4/1481] (ab218511)

S100A4 Flow Cytometry staining using mouse Anti-S100A4 antibody

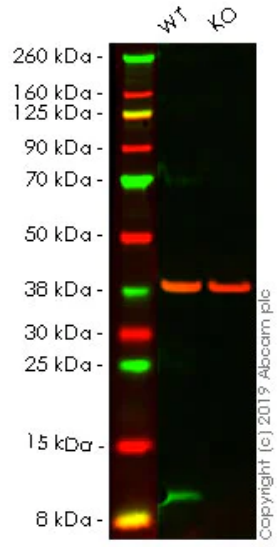
Flow Cytometric Analysis of human T98G cells using ab218511 at 1 ug/ml, followed by goat anti-Mouse IgG-CF488 (Blue); Isotype Control (Red).



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-S100A4 antibody [S100A4/1481] (ab218511)

S100A4 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using mouse Anti-S100A4 antibody

Immunohistochemical analysis of formalin-fixed paraffin-embedded human placenta tissue, labeling S100A4 using ab218511 at 1 µg/mL.



Western blot - Anti-S100A4 antibody [S100A4/1481] (ab218511)

Lanes 1 - 4: Merged signal (red and green). Green - ab218511 observed at 12 kDa. Red - loading control ab181602 observed at 37 kDa.
ab218511 Anti-S100A4 antibody [S100A4/1481] was shown to specifically react with S100A4 in wild-type HeLa cells. Loss of signal was observed when knockout cell line ab261758 (knockout cell lysate ab257045) was used. Wild-type and S100A4 knockout samples were subjected to SDS-PAGE. ab218511 and Anti-GAPDH antibody [EPR16891] - Loading Control (ab181602) were incubated overnight at 4°C at 1 in 1000 dilution and 1 in 20000 dilution respectively. Blots were developed with Goat anti-Mouse IgG H&L (IRDye® 800CW) preadsorbed (ab216772) and Goat Anti-Rabbit IgG H&L (IRDye® 680RD) preadsorbed (ab216777) secondary antibodies at 1 in 20000 dilution for 1 hour at room temperature before imaging.

All lanes:
Western blot - Anti-S100A4 antibody [S100A4/1481] (ab218511) at 1/1000 dilution

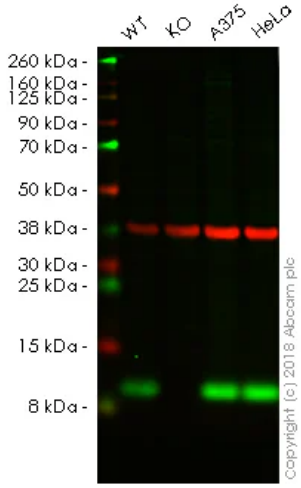
Lane 1:
Wild-type HeLa cell lysate at 20 µg

Lane 2:
S100A4 knockout HeLa cell lysate at 20 µg

Performed under reducing conditions.

Predicted band size: 12 kDa

Observed band size: 12 kDa



Western blot - Anti-S100A4 antibody [S100A4/1481] (ab218511)

S100A4 Western blot staining using mouse Anti-S100A4 antibody

Lanes 1 - 4: Merged signal (red and green). Green - ab218511 observed at 12 kDa. Red - loading control, ab181602, observed at 37 kDa.
ab218511 was shown to specifically react with S100A4 in wild-type A549 cells as signal was lost in S100A4 knockout cells. Wild-type and S100A4 knockout samples were subjected to SDS-PAGE. ab218511 and ab181602 (Rabbit anti GAPDH loading control) were incubated overnight at 4°C at 1 ug/ml and 1/20000 dilution respectively. Blots were developed with Goat anti-Mouse IgG H&L (IRDye® 800CW) preabsorbed ab216772 and Goat anti-Rabbit IgG H&L (IRDye® 680RD) preabsorbed ab216777 secondary antibodies at 1/20000 dilution for 1 hour at room temperature before imaging.

All lanes:
Western blot - Anti-S100A4 antibody [S100A4/1481] (ab218511) at 1 µg/mL

Lane 1:
Wild-type A549 (Human lung carcinoma cell line) whole cell lysate at 20 µg

Lane 2:
Western blot - Human S100A4 knockout A549 cell lysate (ab261674) at 20 µg

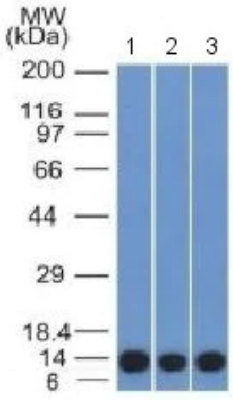
Lane 3:
A-375 (Human malignant melanoma cell line) whole cell lysate at 20 µg

Lane 4:
HeLa (Human epithelial cell line from cervix adenocarcinoma) whole cell lysate at 20 µg

Performed under reducing conditions.

Predicted band size: 12 kDa

Observed band size: 12 kDa



Western blot - Anti-S100A4 antibody [S100A4/1481] (ab218511)

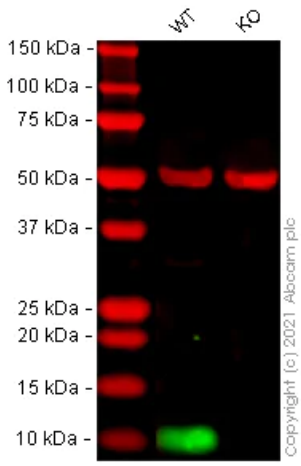
All lanes:
Western blot - Anti-S100A4 antibody [S100A4/1481] (ab218511) at 1 µg/mL

Lane 1:
HeLa cell lysate

Lane 2:
A549 cell lysate

Lane 3:
A375 cell lysate

Predicted band size: 12 kDa



Western blot - Anti-S100A4 antibody [S100A4/1481] (ab218511)

S100A4 Western blot staining using mouse Anti-S100A4 antibody

Lanes 1 - 2: Merged signal (red and green). Green - ab218511 observed at 11 kDa. Red - loading control ab52866 (Rabbit anti-alpha Tubulin antibody [EP1332Y]) observed at 55 kDa.
ab218511 was shown to react with S100A4 in wild-type HeLa cells in Western blot with loss of signal observed in S100A4 knockout cell line ab265709 (S100A4 knockout cell lysate ab257046).
Wild-type HeLa and S100A4 knockout cell lysates were subjected to SDS-PAGE. Membranes were blocked in 3 % milk in TBS-T (0.1 % Tween®) before incubation with ab218511 and ab52866 (Rabbit anti-alpha Tubulin antibody [EP1332Y]) overnight at 4 °C at 0.5 µg/ml and a 1 in 20000 dilution respectively. Blots were incubated with Goat anti-Mouse IgG H&L (IRDye® 800CW) preabsorbed (ab216772) and Goat anti-Rabbit IgG H&L (IRDye® 680RD) preabsorbed (ab216777) secondary antibodies at 1 in 20000 dilution for 1 h at room temperature before imaging.

All lanes:
Western blot - Anti-S100A4 antibody [S100A4/1481] (ab218511) at 0.5 µg/mL

Lane 1:
Wild-type HeLa cell lysate at 20 µg

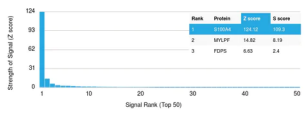
Lane 2:
S100A4 knockout HeLa cell lysate at 20 µg

Lane 2:
Western blot - Human S100A4 knockout HeLa cell line (ab265709)

Performed under reducing conditions.

Predicted band size: 12 kDa

Observed band size: 11 kDa



Protein Array - Anti-S100A4 antibody [S100A4/1481] (ab218511)

ab218511 was tested in protein array against over 19000 different full-length human proteins.
Z- and S- Score: The Z-score represents the strength of a signal that a monoclonal antibody (MAb) (in combination with a fluorescently-tagged anti-IgG secondary antibody) produces when binding to a particular protein on the HuProtTM array. Z-scores are described in units of standard deviations (SD's) above the mean value of all signals generated on that array. If targets on HuProtTM are arranged in descending order of the Z-score, the S-score is the difference (also in units of SD's) between the Z-score. S-score therefore represents the relative target specificity of a MAb to its intended target.
A MAb is specific to its intended target if the MAb has an S-score of at least 2.5. For example, if a MAb binds to protein X with a Z-score of 43 and to protein Y with a Z-score of 14, then the S-score for the binding of that MAb to protein X is equal to 29.

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