abcam

ab183979

Anti-S100 alpha antibody [EPR19013]

Recombinant | RabMAb

Key facts

Isotype	IgG
Host species	Rabbit
Storage buffer	pH: 7.2 Preservative: 0.01% Sodium azide Constituents: PBS, 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	EPR19013
Purification technique	Affinity purification Protein A
Concentration	0.694 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

IP

Tested

Species	Mouse
Dilution info	1/40
Notes	-

Expected

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

WB

Tested

Species	Mouse
Dilution info	1/1000
Notes	-

Species	Human
Dilution info	1/1000
Notes	-

IHC-Fr

Tested

Species	Mouse
Dilution info	1/500
Notes	Antigen retrieval: Heated citrate solution (10mM citrate pH 6.0 + 0.05% Tween-20). Weak positive staining was observed in mouse with minimal background.

Expected

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

Flow Cyt (Intra)

Tested

Species	Mouse

Dilution info	1/60
Notes	ab172730 - Rabbit monoclonal IgG, is suitable for use as an isotype control with this antibody.

Expected

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

IHC-P

Tested

Species	Human
Dilution info	1/1000
Notes	-

Expected

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

Target data

See full target information S100A1

Function	Small calcium binding protein that plays important roles in several biological processes such as Ca(2+) homeostasis, chondrocyte biology and cardiomyocyte regulation (PubMed:12804600). In response to an increase in intracellular Ca(2+) levels, binds calcium which triggers conformational changes (PubMed:23351007). These changes allow interactions with specific target proteins and modulate their activity (PubMed:22399290). Regulates a network in cardiomyocytes controlling sarcoplasmic reticulum Ca(2+) cycling and mitochondrial function through interaction with the ryanodine receptors RYR1 and RYR2, sarcoplasmic reticulum Ca(2+)-ATPase/ATP2A2 and mitochondrial F1-ATPase (PubMed:12804600). Facilitates diastolic Ca(2+) dissociation and myofilament mechanics in order to improve relaxation during diastole (PubMed:11717446).

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

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.

Supplementary info

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

Activity summary	S100 alpha also known as S100A1 among other S100 family proteins plays a role in calcium ion binding which influences various cellular processes. It is a small protein with a molecular mass around 10-12 kDa. S100 alpha expresses abundantly in the brain heart and skeletal muscle indicating its functional importance in these tissues.
Biological function summary	The S100 calcium-binding proteins like S100 alpha modulate the function of target proteins through interactions dependent on the calcium bound state. S100 alpha does not commonly form larger complexes but instead interacts directly with other proteins to exert its effects. Importantly it regulates activities such as phosphorylation enzyme activity and cellular proliferation and differentiation.

Pathways	S100 alpha integrates into the intracellular pathways that mediate calcium signaling and respond to oxidative stress. Notably it is involved in the regulation of the RAGE (Receptor for Advanced Glycation End-products) pathway and related NF-kB pathway both of which lead to inflammatory responses. Through these pathways S100 alpha is related to several proteins like p53 and those involved in cytoskeletal dynamics.
Associated diseases and disorders	S100 alpha demonstrates relevance in conditions linked to aberrant calcium signaling and inflammation such as cardiomyopathy and certain neurodegenerative disorders. In cardiomyopathy alterations of S100 alpha affect cardiac contractility and contribute to heart failure. In neurodegenerative disorders the protein's interaction with RAGE and subsequent pathways possibly accelerates neuronal damage. The protein links with other S100 family members such as S100B further influencing disease progression.

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

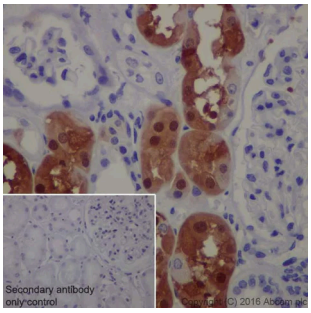
We do not recommend this combination. It is not covered by our product promise.

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.

11 product images

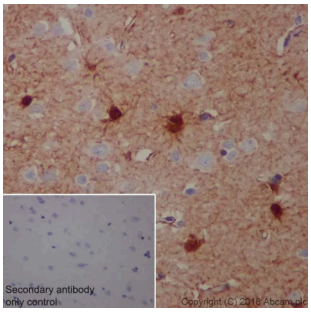


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-S100 alpha antibody [EPR19013] (ab183979)

S100 alpha Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-S100 alpha antibody

Immunohistochemical analysis of paraffin-embedded Human kidney tissue labeling S100 with ab183979 at 1/1000 dilution, followed by Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/500 dilution. Part of kidney tubules were strongly staining. Counter stained with Hematoxylin.
Secondary antibody only control: Used PBS instead of primary antibody, secondary antibody is ab97051 at 1/500 dilution.

Perform heat mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.

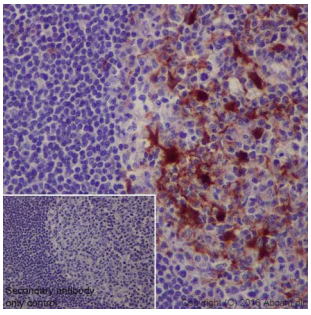


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-S100 alpha antibody [EPR19013] (ab183979)

S100 alpha Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-S100 alpha antibody

Immunohistochemical analysis of paraffin-embedded Human cerebrum tissue labeling S100 with ab183979 at 1/1000 dilution, followed by Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/500 dilution. Positive staining on glial cells and negative on neuron cells of Human cerebrum was observed. Counter stained with Hematoxylin.
Secondary antibody only control: Used PBS instead of primary antibody, secondary antibody is ab97051 at 1/500 dilution.

Perform heat mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.

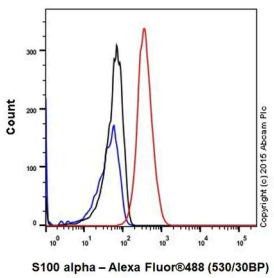


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-S100 alpha antibody [EPR19013] (ab183979)

S100 alpha Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-S100 alpha antibody

Immunohistochemical analysis of paraffin-embedded Human tonsil tissue labeling S100 with ab183979 at 1/1000 dilution, followed by Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/500 dilution. Positive on germinal center of Human tonsil. Counter stained with Hematoxylin.
Secondary antibody only control: Used PBS instead of primary antibody, secondary antibody is ab97051 at 1/500 dilution.

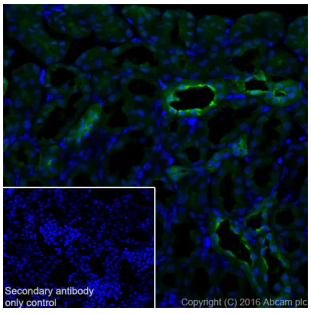
Perform heat mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.



Flow Cytometry (Intracellular) - Anti-S100 alpha antibody [EPR19013] (ab183979)

S100 alpha Flow Cytometry (Intracellular) staining using rabbit Anti-S100 alpha antibody

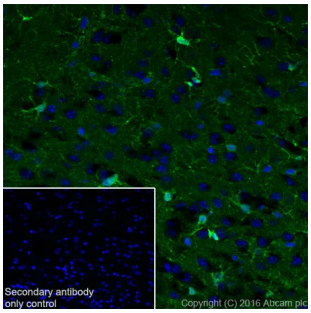
C2C12 (mouse muscle) cells were fixed with 4% paraformaldehyde and incubated with the primary antibody (ab183979; red line) diluted 1/60 (1µg). The secondary antibody used was Goat anti-rabbit IgG (Alexa Fluor® 488) at 1/500 dilution. The isotype control (black line) antibody wasRabbit monoclonal IgG (ab172730). An unlabelled control without incubation with primary antibody and secondary antibody was also perfomed (blue line).



Immunohistochemistry (Frozen sections) - Anti-S100 alpha antibody [EPR19013] (ab183979)

S100 alpha Immunohistochemistry (Frozen sections) staining using rabbit Anti-S100 alpha antibody

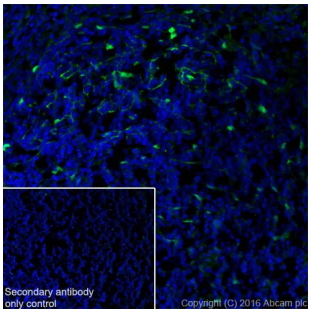
Immunohistochemical analysis of 4% paraformaldehyde-fixed, 0.2% Triton X-100 permeabilized frozen Mouse kidney tissue labeling S100 with ab183979 at 1/500 dilution, followed by Goat Anti-Rabbit IgG (Alexa Fluor® 488) (ab150077) secondary antibody at 1/1000 dilution (green). The result showed positive staining on mouse kidney. The nuclear counterstain is DAPI (blue).
Secondary antibody only control: Used PBS instead of primary antibody, secondary antibody is ab150077 secondary antibody at 1/1000 dilution.



Immunohistochemistry (Frozen sections) - Anti-S100 alpha antibody [EPR19013] (ab183979)

S100 alpha Immunohistochemistry (Frozen sections) staining using rabbit Anti-S100 alpha antibody

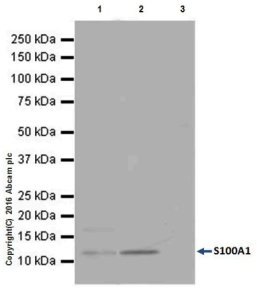
Immunohistochemical analysis of 4% paraformaldehyde-fixed, 0.2% Triton X-100 permeabilized frozen Mouse brain tissue labeling S100 with ab183979 at 1/500 dilution, followed by Goat Anti-Rabbit IgG (Alexa Fluor® 488) (ab150077) secondary antibody at 1/1000 dilution (green). The result showed positive staining on glial cells of mouse cortex. The nuclear counterstain is DAPI (blue). Secondary antibody only control: Used PBS instead of primary antibody, secondary antibody is ab150077 secondary antibody at 1/1000 dilution.



Immunohistochemistry (Frozen sections) - Anti-S100 alpha antibody [EPR19013] (ab183979)

S100 alpha Immunohistochemistry (Frozen sections) staining using rabbit Anti-S100 alpha antibody

Immunohistochemical analysis of 4% paraformaldehyde-fixed, 0.2% Triton X-100 permeabilized frozen Mouse spleen tissue labeling S100 with ab183979 at 1/500 dilution, followed by Goat Anti-Rabbit IgG (Alexa Fluor® 488) (ab150077) secondary antibody at 1/1000 dilution (green). The result showed positive staining on mouse spleen. The nuclear counterstain is DAPI (blue).
Secondary antibody only control: Used PBS instead of primary antibody, secondary antibody is ab150077 secondary antibody at 1/1000 dilution.



Immunoprecipitation - Anti-S100 alpha antibody [EPR19013] (ab183979)

S100 was immunoprecipitated from RAW 264.7 (Mouse macrophage cell line transformed with Abelson murine leukemia virus) whole cell lysate with ab183979 at 1/40 dilution. Western blot was performed from the immunoprecipitate using ab183979 at 1/1000 dilution. VeriBlot for IP Detection Reagent (HRP) (ab131366), was used for detection at 1/10000 dilution.
Lane 1: RAW 264.7 whole cell lysate, 10µg (Input).

Lane 2: ab183979 IP in RAW 264.7 whole cell lysate.

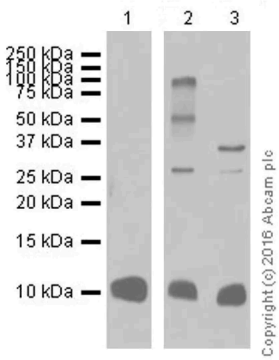
Lane 3: Rabbit IgG, monoclonal [EPR25A] - Isotype Control (ab172730) instead of ab183979 in RAW 264.7 whole cell lysate.

Blocking and dilution buffer and concentration: 5% NFDM/TBST.

Exposure time: 30 seconds.

All lanes:
Immunoprecipitation - Anti-S100 alpha antibody [EPR19013] (ab183979)

Predicted band size: 11 kDa



Western blot - Anti-S100 alpha antibody [EPR19013] (ab183979)

Blocking/Dilution buffer: 5% NFDM/TBST.
Note that high molecular weight bands were detected in mouse tissue lysates.

All lanes:
Western blot - Anti-S100 alpha antibody [EPR19013] (ab183979) at 1/2000 dilution

Lane 1:
Human skeletal muscle lysate at 20 µg

Lane 2:
Mouse cerebral cortex lysate at 20 µg

Lane 3:
Mouse liver lysate at 20 µg

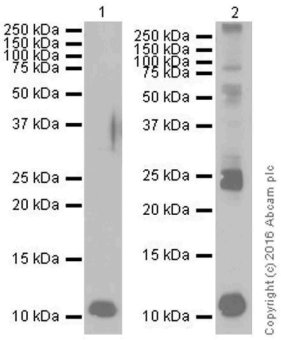
Secondary

All lanes:
Goat Anti-Rabbit IgG Peroxidase Conjugate, specific to the non-reduced form of IgG at 1/10000 dilution

Predicted band size: 11 kDa

Observed band size: 11 kDa

Exposure time: 3min



Western blot - Anti-S100 alpha antibody [EPR19013] (ab183979)

Blocking/Dilution buffer: 5% NFDM/TBST.
Note that high molecular weight bands were detected in mouse tissue lysates.

All lanes:
Western blot - Anti-S100 alpha antibody [EPR19013] (ab183979) at 1/1000 dilution

Lane 1:
Mouse muscle lysate at 10 µg

Lane 2:
Mouse heart lysate at 10 µg

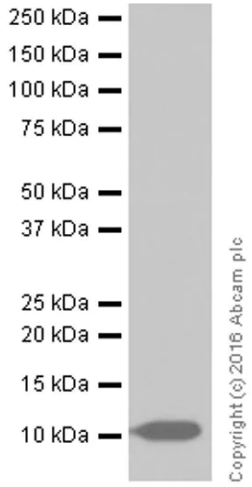
Secondary

All lanes:
Western blot - Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/100000 dilution

Predicted band size: 11 kDa

Observed band size: 11 kDa

Exposure time: 3min



Western blot - Anti-S100 alpha antibody [EPR19013] (ab183979)

S100 alpha Western blot staining of RAW 264.7 (Mouse macrophage cell line transformed with Abelson murine leukemia virus) whole cell lysate using rabbit Anti-S100 alpha antibody

Blocking/Dilution buffer: 5% NFDM/TBST.
All lanes:
Western blot - Anti-S100 alpha antibody [EPR19013] (ab183979) at 1/2000 dilution

All lanes:
RAW 264.7 (Mouse macrophage cell line transformed with Abelson murine leukemia virus) whole cell lysate at 10 µg

Secondary

All lanes:
Western blot - Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/100000 dilution

Predicted band size: 11 kDa

Observed band size: 11 kDa

Exposure time: 3min

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