abcam

ab57834

Anti-Stromal interaction molecule 1 antibody [5A2]

Key facts

Isotype	IgG2a
Host species	Mouse
Storage buffer	pH: 7.4
Form	Liquid
Clonality	Monoclonal
Immunogen	Recombinant Full Length Protein corresponding to Human STIM1. Database link Q13586
Clone number	5A2
Purity	Tissue culture supernatant
Light chain type	kappa

Reactivity data

ICC

Expected

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

IP

Expected

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

Flow Cyt

Tested

Species	Human
Dilution info	-
Notes	ab170191 - Mouse monoclonal IgG2a, is suitable for use as an isotype control with this antibody.

WB

Tested

Species	Human
Dilution info	-
Notes	-

IHC-P

Tested

Species	Human
Dilution info	-
Notes	-

ICC/IF

Tested

Species	Human
Dilution info	-
Notes	-

Target data

See full target information STIM1

Function	Acts as a Ca(2+) sensor that gates two major inward rectifying Ca(2+) channels at the plasma membrane: Ca(2+) release-activated Ca(2+) (CRAC) channels and arachidonate-regulated Ca(2+)-selective (ARC) channels (PubMed:15866891, PubMed:16005298, PubMed:16208375, PubMed:16537481, PubMed:16733527, PubMed:16766533, PubMed:16807233, PubMed:18854159, PubMed:19182790, PubMed:19249086, PubMed:19622606, PubMed:19706554, PubMed:22464749, PubMed:24069340, PubMed:24351972, PubMed:24591628, PubMed:25326555, PubMed:26322679, PubMed:28219928, PubMed:32415068). Plays a role in mediating store-operated Ca(2+) entry (SOCE), a Ca(2+) influx following depletion of intracellular Ca(2+) stores. Upon Ca(2+) depletion, translocates from the endoplasmic reticulum to the plasma membrane where it activates CRAC channel pore-forming subunits ORA1, ORA2 and ORAI3 to generate sustained and oscillatory Ca(2+) entry (PubMed:16208375, PubMed:16537481, PubMed:32415068). Involved in enamel formation (PubMed:24621671).

Storage

Shipped at conditions	Blue Ice
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

This product was changed from ascites to tissue culture supernatant on 12/3/19. Please note that the dilutions may need to be adjusted accordingly. If you have any questions, please do not hesitate to contact our scientific support team.

Supplementary info

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

Activity summary	Stromal interaction molecule 1 also known as STIM1 is a single-pass transmembrane protein primarily involved in the regulation of calcium ion entry into cells. It acts as a sensor of calcium levels inside the endoplasmic reticulum. STIM1 is about 90 kDa in mass and expresses in various tissues including the immune system skeletal muscle and vascular smooth muscle. The protein anchors

	in the membrane of the endoplasmic reticulum where it responds to the depletion of calcium by communicating with plasma membrane channels to activate calcium influx.
Biological function summary	STIM1 plays a critical role in the store-operated calcium entry (SOCE) mechanism a significant process in cellular calcium signaling. STIM1 senses calcium concentration within the endoplasmic reticulum and upon depletion aggregates and migrates to the plasma membrane to interact with Orai1 part of the calcium release-activated calcium (CRAC) channel complex. This interaction opens the channel allowing calcium ions to flow into the cytosol which is necessary for various cellular functions such as gene expression and cell proliferation.
Pathways	STIM1 functions integrally in the calcium signaling pathway a system central to numerous physiological processes. Here STIM1 ensures appropriate calcium ion concentrations facilitate activation of various transcription factors and enzymes. It closely associates with Orai1 triggering the CRAC channel activation in response to the endoplasmic reticulum calcium levels. Additionally STIM1 interacts with other signaling molecules like protein kinase C coordinating between different pathways to maintain cellular homeostasis.
Associated diseases and disorders	STIM1 dysfunction links to conditions such as immunodeficiency and muscle disorders. Mutations in STIM1 can lead to combined immunodeficiency characterized by impaired immune responses due to faulty calcium influx in lymphocytes. Additionally aberrations in STIM1 activity associate with tubular aggregate myopathy a muscle disorder where abnormal calcium handling in muscle cells leads to muscle weakness and pain. In these diseases the interaction between STIM1 and Orai1 is often disrupted highlighting their roles in maintaining physiological processes.

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

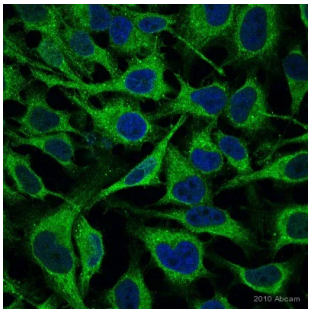
We do not recommend this combination. It is not covered by our product promise.

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.

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Terms & Conditions.

6 product images



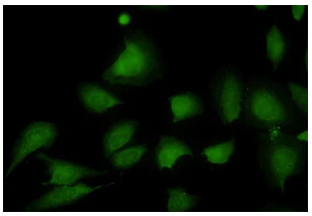
This image is courtesy of an anonymous customer review

Immunocytochemistry/ Immunofluorescence - Anti-Stromal interaction molecule 1 antibody [5A2] (ab57834)

Stromal interaction molecule 1 Immunocytochemistry/ Immunofluorescence staining using mouse Anti-Stromal interaction molecule 1 antibody

ab57834 staining the stromal interaction molecule in HeLa cells by immunocytochemistry/immunofluorescence (ICC/IF). Cells were fixed with paraformaldehyde and permeabilized with 0.5% TritonX. Samples were incubated with primary antibody (1/200) for 1 hour at 24°C. An Alexa Fluor ® 488-conjugated chicken anti-mouse polyclonal (1/1000) was used as the secondary.

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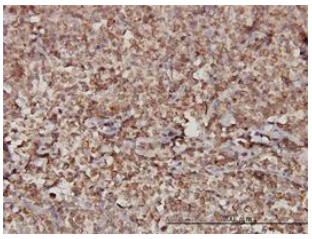


Immunocytochemistry/ Immunofluorescence - Anti-Stromal interaction molecule 1 antibody [5A2] (ab57834)

Stromal interaction molecule 1 Immunocytochemistry/ Immunofluorescence staining using mouse Anti-Stromal interaction molecule 1 antibody

ab57834 at 10 ug/ml staining Stromal interaction molecule 1 in human Hella cells by Immunocytochemistry/ Immunofluorescence.

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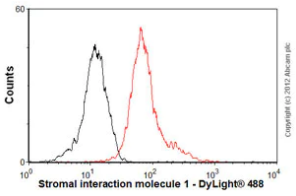


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Stromal interaction molecule 1 antibody [5A2] (ab57834)

Stromal interaction molecule 1 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using mouse Anti-Stromal interaction molecule 1 antibody

Stromal interaction molecule 1 antibody (ab57834) used in immunohistochemistry at 3ug/ml on formalin fixed and paraffin embedded human malignant lymphoma, diffuse large B.

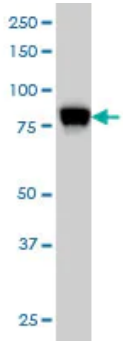
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Flow Cytometry - Anti-Stromal interaction molecule 1 antibody [5A2] (ab57834)

Stromal interaction molecule 1 Flow Cytometry staining using mouse Anti-Stromal interaction molecule 1 antibody

Overlay histogram showing HeLa cells stained with ab57834 (red line). The cells were fixed with 80% methanol (5 min) and then permeabilized with 0.1% PBS-Tween for 20 min. The cells were then incubated in 1x PBS / 10% normal goat serum / 0.3M glycine to block non-specific protein-protein interactions followed by the antibody (ab57834, 0.5µg/1x10^6 cells) for 30 min at 22°C. The secondary antibody used was DyLight® 488 goat anti-mouse IgG (H+L) (ab96879) at 1/500 dilution for 30 min at 22°C. Isotype control antibody (black line) was mouse IgG2a [ICIGG2A] (ab91361, 1µg/1x10^6 cells) used under the same conditions. Acquisition of >5,000 events was performed.
This image was generated using the ascites version of the product.



Western blot - Anti-Stromal interaction molecule 1 antibody [5A2] (ab57834)

Stromal interaction molecule 1 Western blot staining using mouse Anti-Stromal interaction molecule 1 antibody

Stromal interaction molecule 1 antibody (ab57834) at 1ug/lane + HeLa cell lysate at 25ug/lane.
This image was generated using the ascites version of the product.

All lanes:
Western blot - Anti-Stromal interaction molecule 1 antibody [5A2] (ab57834)

Predicted band size: 77 kDa

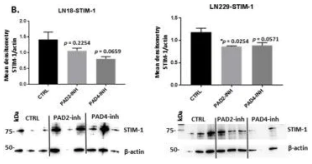


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Western blot - Anti-Stromal interaction molecule 1 antibody [5A2] (ab57834)

Stromal interaction molecule 1 Western blot staining using mouse Anti-Stromal interaction molecule 1 antibody

Stromal interaction molecule 1 western blot using anti-Stromal interaction molecule 1 antibody [5A2] ab57834. Publication image and figure legend from Uysal-Onganer, P., MacLatchy, A., et al., 2020, Int J Mol Sci, PubMed 32098295.

ab57834 was used in this publication in western blot. This may not be the same as the application(s) guaranteed by Abcam. For a full list of applications guaranteed by Abcam for ab57834 please see the product overview.

PAD2 and PAD4 isozyme-specific inhibitor 1 h treatment affects prohibitin (PHB), stromal interaction molecule 1 (STIM-1) and moesin protein levels in LN18 and LN229 GBM cell lines. (A) PHB protein levels in LN18 and LN229 cells, respectively, following 1 h treatment with the PAD2 and PAD4 inhibitors, compared to control-treated cells. (B) STIM-1 protein levels in LN18 and LN229 cells respectively, following 1 h treatment with the PAD2 and PAD4 inhibitors, compared to control-treated cells. (C) Moesin protein levels in LN18 and LN229 cells, respectively, following 1 h treatment with the PAD2 and PAD4 inhibitors, compared to control-treated cells. Representative blots are shown; the density ratios of the various proteins analysed and actin are presented as normalised quantified data (mean ±S.D.) for treatment with the PAD2 and PAD4 specific inhibitors, compared to DMSO treated controls. The corresponding molecular weight size standard

is indicated in kilodaltons (kDa) on each blot. Exact p-values are indicated, error bars show SD (* indicates significant differences with $p < 0.05$; $n = 3$ biological replicates for all).

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