abcam

ab322109

Anti-ASAH1 antibody [MJF-D29767-517]

Recombinant | RabMAb

Key facts

Isotype	IgG
Host species	Rabbit
Storage buffer	pH: 7.2 - 7.4 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	MJF-D29767-517
Purification technique	Affinity purification Protein A
Concentration	0.492 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	1/500
Notes	-

Not recommended

Species	Mouse, Rat
Dilution info	-
Notes	-

ICC/IF

Tested

Species	Human
Dilution info	1/50
Notes	-

Not recommended

Species	Mouse, Rat
Dilution info	-
Notes	-

IHC-P

Not recommended

Species	Human, Mouse, Rat
Dilution info	-
Notes	-

IP

Tested

Species	Human
Dilution info	1/30
Notes	-

Not recommended

Species	Mouse, Rat
Dilution info	-
Notes	-

WB

Not recommended

Species	Human, Mouse, Rat
Dilution info	-
Notes	-

IHC-Fr

Not recommended

Species	Mouse, Rat, Human
Dilution info	-
Notes	-

Target data

See full target information ASAH1

Function

Lysosomal ceramidase that hydrolyzes sphingolipid ceramides into sphingosine and free fatty acids at acidic pH (PubMed:10610716, PubMed:11451951, PubMed:15655246, PubMed:26898341, PubMed:36752535, PubMed:7744740, PubMed:7852294). Ceramides, sphingosine, and its phosphorylated form sphingosine-1-phosphate are bioactive lipids that mediate cellular signaling pathways regulating several biological processes including cell proliferation, apoptosis and differentiation (PubMed:10610716). Has a higher catalytic efficiency towards C12-ceramides versus other ceramides (PubMed:15655246, PubMed:7744740). Also catalyzes the reverse reaction allowing the synthesis of ceramides from fatty acids and sphingosine (PubMed:12764132, PubMed:12815059). For the reverse synthetic reaction, the natural sphingosine D-erythro isomer is more efficiently utilized as a substrate compared to D-erythro-dihydrosphingosine and D-erythro-phytosphingosine, while the fatty acids with chain lengths of 12 or 14 carbons are the most efficiently used (PubMed:12764132). Also has an N-acylethanolamine hydrolase activity (PubMed:15655246). By regulating the levels of ceramides, sphingosine and sphingosine-1-phosphate in the epidermis, mediates the calcium-induced differentiation of epidermal keratinocytes (PubMed:17713573). Also indirectly regulates tumor necrosis factor/TNF-induced apoptosis (By similarity). By

regulating the intracellular balance between ceramides and sphingosine, in adrenocortical cells, probably also acts as a regulator of steroidogenesis (PubMed:22261821). Isoform 2. May directly regulate steroidogenesis by binding the nuclear receptor NR5A1 and negatively regulating its transcriptional activity.

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.

Collaborations
This antibody was developed with support from The Michael J. Fox Foundation.

THE MICHAEL J. FOX FOUNDATION
FOR PARKINSON'S RESEARCH

Supplementary info

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

Activity summary	ASAH1 also known as acid ceramidase or alkaline ceramidase is an enzyme that plays a role in the hydrolysis of ceramides into sphingosine and free fatty acids. It has a mass of approximately 55 kDa. This enzyme is primarily found in lysosomes cellular organelles that manage waste. ASAH1 is expressed in various tissues including liver heart brain and skin illustrating its widespread distribution in the body.
Biological function summary	ASAH1 influences several important cellular processes by controlling the levels of ceramide and sphingosine. These lipids are not just structural components of membranes; they participate actively in cell signaling. ASAH1 exists as part of a larger complex that includes other enzymes involved in sphingolipid metabolism. Changes in ceramide levels influence apoptosis and cell proliferation indicating ASAH1's role as a regulator in these processes.
Pathways	ASAH1 is central to the sphingolipid metabolism pathway. This pathway is interconnected with the apoptosis signaling pathway. By converting ceramide to sphingosine ASAH1 links the complex ceramide/sphingosine balance affecting cell survival and death decisions. It interacts with other enzymes such as sphingosine kinase 1 and ceramide synthases which further maintain the dynamic regulation between sphingosine and ceramide levels.
Associated diseases and disorders	ASAH1 is linked to conditions such as Farber disease and spinal muscular atrophy. These disorders result from dysfunctional ceramide metabolism causing cellular and systemic impacts due to excessive ceramide accumulation. Proteins like acid sphingomyelinase are related to ASAH1's role in these diseases as both contribute to sphingolipid balance in cells. Understanding ASAH1 and its pathways provides insights into potential therapeutic targets for these sphingolipid-related disorders.

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

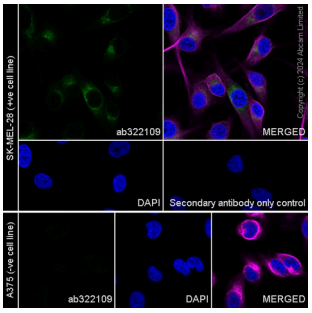
We do not recommend this combination. It is not covered by our product promise.

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.

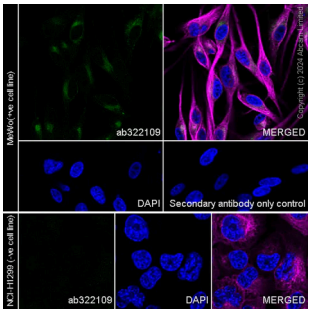
4 product images



Immunocytochemistry/ Immunofluorescence - Anti-ASAH1 antibody [MJF-D29767-517] (ab322109)

ASAH1 Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-ASAH1 antibody

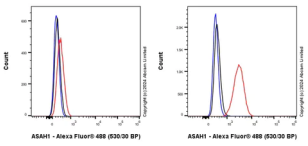
Immunofluorescent analysis of 4% Paraformaldehyde-fixed, 0.1% TritonX-100 permeabilized SK-MEL-28 (human malignant melanoma cell) cells labelling ASAH1 with ab322109 at 1/50 dilution, followed by ab150081 Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) preadsorbed antibody at 1/1000 dilution (Green). Confocal image showing cytoplasmic staining in SK-MEL-28 cell line (shown in green). The counterstain was observed in magenta. Nuclear DNA was labelled with DAPI (shown in blue). Negative control: A375 (PMID:26553872). Image was taken with a confocal microscope (Leica-Microsystems, TCS SP8). ab195889 Anti-alpha Tubulin mouse monoclonal antibody - Microtubule Marker (Alexa Fluor® 594) was used to counterstain tubulin at 1/200 dilution (Magenta). The Nuclear counterstain was DAPI (Blue). Secondary antibody only control: Secondary antibody is ab150081 Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) preadsorbed at 1/1000 dilution.



Immunocytochemistry/ Immunofluorescence - Anti-ASAH1 antibody [MJF-D29767-517] (ab322109)

ASAH1 Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-ASAH1 antibody

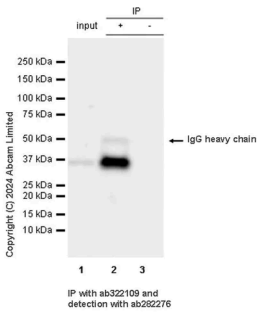
Immunofluorescent analysis of 4% Paraformaldehyde-fixed, 0.1% TritonX-100 permeabilized MeWo(human malignant melanoma fibroblast) cells labelling ASAH1 with ab322109 at 1/50 dilution, followed by ab150081 Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) preadsorbed antibody at 1/1000 dilution (Green). Confocal image showing cytoplasmic staining in MeWo cell line (shown in green). The counterstain was observed in magenta. Nuclear DNA was labelled with DAPI (shown in blue). Negative control: NCI-H1299 (PMID:26553872). Image was taken with a confocal microscope (Leica-Microsystems, TCS SP8). ab195889 Anti-alpha Tubulin mouse monoclonal antibody - Microtubule Marker (Alexa Fluor® 594) was used to counterstain tubulin at 1/200 dilution (Magenta). The Nuclear counterstain was DAPI (Blue). Secondary antibody only control: Secondary antibody is ab150081 Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) preadsorbed at 1/1000 dilution.



Flow Cytometry (Intracellular) - Anti-ASAH1 antibody [MJF-D29767-517] (ab322109)

ASAH1 Flow Cytometry (Intracellular) staining using rabbit Anti-ASAH1 antibody

Flow cytometric analysis of 4% paraformaldehyde fixed 90% methanol permeabilized A375 (human malignant melanoma epithelial cell, Left) / SK-MEL-28 (human malignant melanoma cell, Right) cells labelling ASAH1 with ab322109 at 1/500 dilution (0.1ug) (Red) compared with a Rabbit monoclonal IgG (ab172730) (Black) isotype control and an unlabelled control (cells without incubation with primary antibody and secondary antibody). Goat Anti-Rabbit IgG (Alexa Fluor® 488, ab150081) at 1/5000 dilution was used as the secondary antibody. Negative control: A375 (PMID:26553872).



Immunoprecipitation - Anti-ASAH1 antibody [MJF-D29767-517] (ab322109)

ASAH1 was immunoprecipitated from 0.35 mg SK-MEL-28 (human malignant melanoma cell) whole cell lysate with ab322109 at 1/30 dilution (2ug in 0.35mg lysates). Western blot was performed on the immunoprecipitate using ab322109 at 1/1000 dilution. VeriBlot for IP secondary antibody(HRP)(ab131366) was used at 1/5000 dilution.

Lane 1: SK-MEL-28 (human malignant melanoma cell) whole cell lysate
Lane 2: ab322109 IP in SK-MEL-28 (human malignant melanoma cell) whole cell lysate
Lane 3: Rabbit monoclonal IgG (ab172730) instead of ab322109 in SK-MEL-28 whole cell lysate

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

The IP experiment was performed by ab322109 using SK-MEL-28 lysate. The blot was probed by another anti-ASAH1 antibody (ab282276)(1:1000 dilution).

All lanes:
Immunoprecipitation - Anti-ASAH1 antibody [MJF-D29767-517] (ab322109) at 1/30 dilution

All lanes:
SK-MEL-28 (human malignant melanoma cell) whole cell lysate

Secondary

All lanes:
Immunoprecipitation - VeriBlot for IP Detection Reagent (HRP) (ab131366) at 1/5000 dilution

Exposure time: 180s

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