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ASAH1 Antibody
Catalog # ASC10740

Specification

ASAH1 Antibody - Product Information

Application	**WB, IHC, IF**
Primary Accession	Q13510
Other Accession	EAW63795, 427
Reactivity	**Human, Mouse, Rat**
Host	**Rabbit**
Clonality	**Polyclonal**
Isotype	**IgG**
Application Notes	**ASAH1 antibody can be used for detection of ASAH1 by Western blot at 1 and 2 µg/mL. Antibody can also be used for immunohistochemistry starting at 2.5 µg/mL. For immunofluorescence start at 20 µg/mL.**

ASAH1 Antibody - Additional Information

Gene ID **427**

Target/Specificity
ASAH1 antibody was raised against a 16 amino acid synthetic peptide near the carboxy terminus of the human ASAH1.

The immunogen is located within amino acids 240 - 290 of ASAH1.

Reconstitution & Storage
ASAH1 antibody can be stored at 4℃ for three months and -20℃, stable for up to one year. As with all antibodies care should be taken to avoid repeated freeze thaw cycles. Antibodies should not be exposed to prolonged high temperatures.

Precautions
ASAH1 Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

ASAH1 Antibody - Protein Information

Name ASAH1 (HGNC:735)

Synonyms ASAH

Function
Lysosomal ceramidase that hydrolyzes sphingolipid ceramides into sphingosine and free fatty acids at acidic pH (PubMed:10610716, PubMed:7744740, PubMed:15655246, PubMed:11451951). 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:7744740, PubMed:15655246). 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). Has also 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).

Cellular Location
Lysosome. Secreted. Note=Secretion is extremely low and localization to lysosomes is mannose-6-phosphate receptor-dependent

Tissue Location
Broadly expressed with higher expression in heart.

ASAH1 Antibody - Protocols

Provided below are standard protocols that you may find useful for product applications.

- Western Blot
- Blocking Peptides
- Dot Blot
- Immunohistochemistry
- Immunofluorescence
- Immunoprecipitation
- Flow Cytomety
- Cell Culture

ASAH1 Antibody - Images

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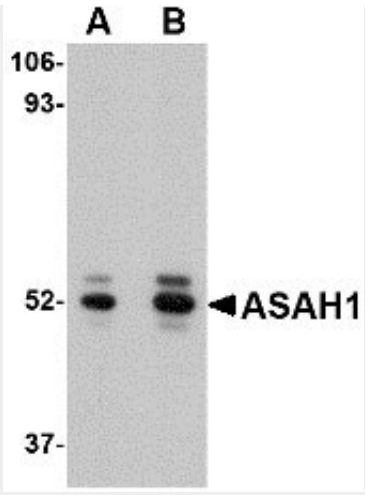
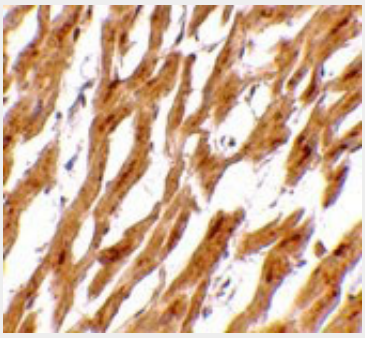
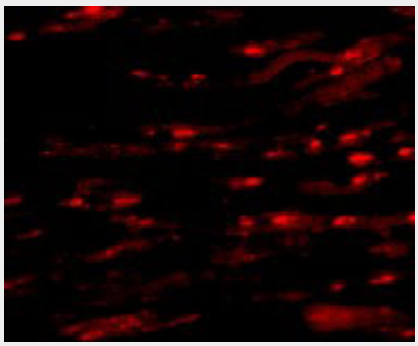


Western blot analysis of ASAH1 in mouse heart tissue lysate with ASAH1 antibody at (A) 1 and (B) 2 µg/mL.



Immunohistochemistry of ASAH1 in human heart tissue with ASAH1 antibody at 2.5 µg/mL.



Immunofluorescence of ASAH1 in Human Heart cells with ASAH1 antibody at 20 µg/mL.

ASAH1 Antibody - Background

ASAH1 Antibody: Sphingolipids are hydrolyzed by ceramidases to yield sphingosine and fatty acids. These ceramidases are classified according to the pH range that supports their optimal activity. ASAH1 is an acid ceramidase and key regulator of ceramide metabolism. Mutations in this gene results in Farber Lipogranulomatosis, a fatal human genetic disorder that results in the painful swelling of the joints and tendons and pulminary insufficiency, while a complete knockout of its expression is lethal in mice. Recent studies have shown elevated levels of ASAH1 in Alzheimer's disease (AD) patients correlating with a reduction in sphingomyelin and elevation of ceramide. Pretreatment of cultured neurons with recombinant AHAH1 prevented the cells from undergoing A-beta (Ab)-induced apoptosis.

ASAH1 Antibody - References

Nilsson A and Duan RD. Alkaline sphingomyelinases and ceramidases of the gastrointestinal tract. Chem. Phys. Lipids 1999; 102:97-105.
Koch J, Gartner S, Li CM, et al. Molecular cloning and characterization of a full-length complementary DNA encoding human acid ceramidase. Identification of the first molecular lesion causing Farber's disease. J. Biol. Chem. 1996; 271:33110-5.
Li CM, Park JH, Simonaro CM, et al. Insertional mutagenesis of the mouse acid ceramidase gene leads to early embryonic lethality in homozygotes and progressive lipid storage disease in heterozygotes. Genomics 2002; 79:218-24.
He X, Huang Y, Li B, et al. Deregulation of sphingolipid metabolism in Alzheimer's disease. Neurobiol. Aging 2010; 31:398-408.