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ASAH2 Antibody

Catalog # ASC10741

Product Information

Application	WB, E
Primary Accession	Q9NR71
Other Accession	NP_063946, 221218981
Reactivity	Human, Mouse, Rat
Host	Rabbit
Clonality	Polyclonal
Isotype	IgG
Calculated MW	85516
Concentration (mg/ml)	1 mg/mL
Conjugate	Unconjugated
Application Notes	ASAH2 antibody can be used for detection of ASAH2 by Western blot at 1 and 2 □g/mL.

Additional Information

Gene ID	56624
Other Names	Neutral ceramidase, N-CDase, NCDase, 3.5.1.23, Acylsphingosine deacylase 2, BCDase, LCDase, hCD, N-acylsphingosine amidohydrolase 2, Non-lysosomal ceramidase, Neutral ceramidase soluble form, ASAH2, HNAC1
Target/Specificity	ASAH2;
Reconstitution & Storage	ASAH2 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	ASAH2 Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	ASAH2
Synonyms	HNAC1
Function	Plasma membrane ceramidase that hydrolyzes sphingolipid ceramides into sphingosine and free fatty acids at neutral pH (PubMed:10781606, PubMed:16229686, PubMed:26190575). 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:15946935, PubMed:19345744, PubMed:24798654). Also catalyzes the reverse reaction

	allowing the synthesis of ceramides from fatty acids and sphingosine (PubMed:11278489, PubMed:17475390). Together with sphingomyelinase, participates in the production of sphingosine and sphingosine-1- phosphate from the degradation of sphingomyelin, a sphingolipid enriched in the plasma membrane of cells (PubMed:16061940). Also participates in the hydrolysis of ceramides from the extracellular milieu allowing the production of sphingosine-1-phosphate inside and outside cells (By similarity). This is the case for instance with the digestion of dietary sphingolipids in the intestinal tract (By similarity).
Cellular Location	[Neutral ceramidase]: Cell membrane; Single-pass type II membrane protein {ECO:0000250|UniProtKB:Q91XT9}. Membrane raft {ECO:0000250|UniProtKB:Q9JHE3}; Single-pass type II membrane protein {ECO:0000250|UniProtKB:Q91XT9}. Membrane, caveola {ECO:0000250|UniProtKB:Q9JHE3}; Single-pass type II membrane protein {ECO:0000250|UniProtKB:Q91XT9}. Golgi apparatus membrane; Single-pass type II membrane protein {ECO:0000250|UniProtKB:Q91XT9}. Mitochondrion. Secreted, extracellular exosome. Note=Enriched in exosomes upon stimulation by cytokine (PubMed:24798654). Enriched in caveolae and lipid rafts (By similarity). The localization to the mitochondrion could not be confirmed (PubMed:15845354) {ECO:0000250|UniProtKB:Q9JHE3, ECO:0000269|PubMed:15845354, ECO:0000269|PubMed:24798654}
Tissue Location	Primarily expressed in intestine (PubMed:17334805). Ubiquitously expressed with higher levels in kidney, skeletal muscle and heart (PubMed:10781606). The ubiquitous expression observed for ASAH2 might be an experimental artifact due to the paralog ASAH2B (PubMed:17334805).

Background

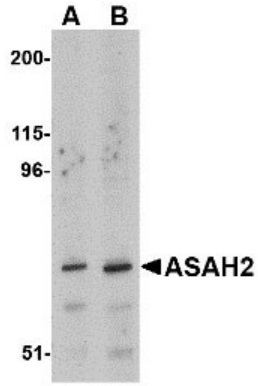
ASAH2 Antibody: Sphingolipids are hydrolyzed by ceramidases to yield sphingosine and fatty acids. These ceramidases are classified according to the pH range that supports their optimal activity. ASAH2 is a neutral ceramidase and key regulator of sphingolipid signaling metabolites at the cell surface, catalyzing the hydrolysis of the N-acyl linkage of ceramide at an optimal pH of 6.5-8.5. ASAH2 is a type II integral membrane protein that can be cleaved to yield a soluble secreted protein and acts as a repressor of apoptosis both by reducing C16-ceramide, thereby preventing ceramide-induced apoptosis, and generating sphingosine. Sphingosine exerts both mitogenic and apoptosis-inducing activities, and its phosphorylated form functions as an intra- and intercellular second messenger. ASAH2 is ubiquitously expressed primarily expressed with higher levels in the intestine, kidney, skeletal muscle and heart. Recent studies indicate that ASAH2 encoded neutral ceramidase is a key enzyme for the catabolism of dietary sphingolipids and regulates the levels of bioactive sphingolipid metabolites in the intestinal tract.

References

Nilsson A and Duan RD. Alkaline sphingomyelinases and ceramidases of the gastrointestinal tract. Chem. Phys. Lipids1999; 102:97-105.
Tani M, Okino N, Mitsutake S, et al. Molecular Cloning of the Full-length cDNA Encoding Mouse Neutral Ceramidase. J. Biol. Chem.2000; 275:11229-34.
Tani M, Iida H, and Ito M. O-Glycosylation of Mucin-like Domain Retains the Neutral Ceramidase on the Plasma Membranes as a Type II Integral Membrane Protein. J. Biol. Chem.2003; 278:10523-30.
Osawa Y, Uchinami H, Bielawski J, et al. Roles for C16-ceramide and sphingosine 1-phosphate in regulating hepatocyte apoptosis in response to tumor necrosis factor-alpha. J. Biol. Chem.2005; 280:27879-87.

Images

Western blot analysis of ASAH2 in 293 cell lysate with



ASAH2 antibody at (A) 1 and (B) 2 µg/mL.

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