

Acid Ceramidase (23): sc-136275

BACKGROUND

Acid Ceramidase catalyzes the degradation of ceramide in normal tissues, and deficiency leads to accumulation of ceramide in tissues, a hallmark of Farber disease. Affected individuals experience early onset joint problems and neurological problems, owing to mutations in the Acid Ceramidase gene. Bioinformatic analysis of gene expression also reveals Acid Ceramidase to be among the five most important genes associated with melanoma. In addition to ceramide hydrolysis, purified Acid Ceramidase also exhibits the ability to catalyze ceramide synthesis, utilizing [14C] lauric acid and sphingosine as substrates. Interestingly, pH regulates which reaction is favored; for hydrolysis the optimum pH is 4.5, whereas the reverse reaction favors a pH of 5.5, further supporting a complex and central role for Acid Ceramidase in sphingolipid metabolism.

REFERENCES

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- StreLOW, A., et al. 2000. Overexpression of Acid Ceramidase protects from tumor necrosis factor-induced cell death. *J. Exp. Med.* 192: 601-612.
- Linke, T., et al. 2001. Interfacial regulation of Acid Ceramidase activity. Stimulation of ceramide degradation by lysosomal lipids and sphingolipid activator proteins. *J. Biol. Chem.* 276: 5760-5768.
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- He, X., et al. 2003. Purification and characterization of recombinant, human Acid Ceramidase. Catalytic reactions and interactions with acid sphingomyelinase. *J. Biol. Chem.* 278: 32978-32986.

CHROMOSOMAL LOCATION

Genetic locus: ASAH1 (human) mapping to 8p22.

SOURCE

Acid Ceramidase (23) is a mouse monoclonal antibody raised against amino acids 88-182 of Acid Ceramidase α of human origin.

PRODUCT

Each vial contains 200 μ g IgG₁ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

STORAGE

Store at 4° C, ****DO NOT FREEZE****. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

APPLICATIONS

Acid Ceramidase (23) is recommended for detection of Acid Ceramidase α of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) and immunoprecipitation [1-2 μ g per 100-500 μ g of total protein (1 ml of cell lysate)].

Acid Ceramidase (23) is also recommended for detection of Acid Ceramidase α in additional species, including canine.

Suitable for use as control antibody for Acid Ceramidase siRNA (h): sc-105032, Acid Ceramidase shRNA Plasmid (h): sc-105032-SH and Acid Ceramidase shRNA (h) Lentiviral Particles: sc-105032-V.

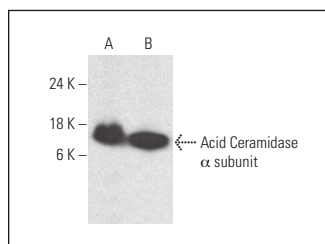
Molecular Weight of Acid Ceramidase precursor: 53 kDa.

Molecular Weight of Acid Ceramidase α subunit: 13 kDa.

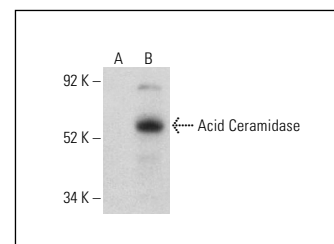
Molecular Weight of Acid Ceramidase β subunit: 40 kDa.

Positive Controls: human heart extract: sc-363763, Acid Ceramidase (h2): 293T Lysate: sc-159684 or SK-MEL-28 cell lysate: sc-2236.

DATA



Acid Ceramidase (23): sc-136275. Western blot analysis of Acid Ceramidase expression in human heart tissue extract (A) and SK-MEL-28 whole cell lysate (B).



Acid Ceramidase (23): sc-136275. Western blot analysis of Acid Ceramidase expression in non-transfected: sc-117752 (A) and human Acid Ceramidase transfected: sc-159684 (B) 293T whole cell lysates. Detection reagent used: m-IgG κ BP-HRP: sc-516102.

SELECT PRODUCT CITATIONS

- Bai, A., et al. 2018. Dose dependent actions of LCL521 on Acid Ceramidase and key sphingolipid metabolites. *Bioorg. Med. Chem.* 26: 6067-6075.
- Ahonen, M.A., et al. 2021. Human adipocyte differentiation and composition of disease-relevant lipids are regulated by miR-221-3p. *Biochim. Biophys. Acta Mol. Cell Biol. Lipids* 1866: 158841.
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- Tani, T., et al. 2021. Inhibition of acid ceramidase elicits mitochondrial dysfunction and oxidative stress in pancreatic cancer cells. *Cancer Sci.* 112: 4570-4579.

RESEARCH USE

For research use only, not for use in diagnostic procedures. Not for resale.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.