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Acid Sphingomyelinase. Rabbit Polyclonal Antibody

Acid Sphingomyelinase, aSMase, SMPD1, ASM, Sphingomyelin phosphodiesterase, ASM-1

Background

Human acid sphingomyelinase (sphingomyelin phosphodiesterase, ASM) is the lysosomal enzyme responsible for the hydrolysis of sphingomyelin to ceramide and phosphocholine. Converts sphingomyelin to ceramide. aSM also has phospholipase C activities toward 1,2-diacylglycerol-phosphocholine and 1,2-diacylglycerol-phosphoglycerol. The enzyme is a membrane-associated glycoprotein with a pH optimum of about 4.5 and a subunit molecular mass of about 72 kDa. In addition AtoS M, two other sphingomyelinases have been identified in man, a Mg2+- dependent neutral sphingomyelinase found primarily in brain and a Zn2+-dependent acid sphingomyelinase found primarily in serum. Although it is likely that the acid and neutral sphingomyelinases are coded by different genes, the molecular genetic relationship of these three biochemically distinct sphingomyelinases has not been determined. Understanding the role of these sphingomyelinases in the hydrolysis of sphingomyelin to ceramide will be an important step in the understanding of ceramide as it is further hydrolyzed to sphingosine, a neutral phospholipid which has been implicated in the regulation of protein kinase C-mediated signal transduction. Inherited deficiencies of ASM have been reported in man, deficient ASM activity results in the two major subtypes of Niemann-Pick disease (NPD).

Ordering Information

Catalog Number
X1695P

Size
100 µg

Form
Unconjugated

Host/Clone
Rabbit

Formulation
Provided as solution in phosphate buffered saline with 0.08% sodium azide

Concentration
See vial for concentration

Isotype
N/A

Applications
Western Blot, ELISA

Species Reactivity
Human

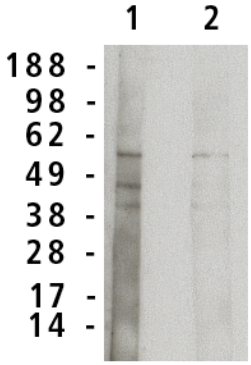
Accession Number

Human	P17405

Immunogen

Synthetic peptide derived from human acid sphingomyelinase protein.

Western blot analysis using acid sphingomyelinase antibody on normal human brain lysate (7 µg/lane). Antibody used at 1 µg/ml (1) and 0.5 µg/ml (2) and detected using mouse anti-rabbit antibody (Cat. No. X1207M) at 1:75k dilution and visualized using Pierce West Femto substrate.



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Positive Control/Tissue Expression

Comments

Antibody can be used for Western blots (5-10 μg/ml) and ELISA. Optimal concentration should be evaluated by serial dilutions.

Purification

Ammonium Sulfate Precipitation

Ship Conditions

Ship at ambient temperature, freeze upon arrival

Storage Customer

Product should be stored at -20ºC. Aliquot to avoid freeze/thaw cycles

Stability

Products are stable for one year from purchase when stored properly

References

1. Human acid sphingomyelinase. Isolation, nucleotide sequence and expression of the full-length and alternatively spliced cDNAs.;
Schuchman E.H., Suchi M., Takahashi T., Sandhoff K., Desnick R.J.; J. Biol. Chem. 266:8531-8539(1991).

2. Molecular cloning of the acid sphingomyelinase of the mouse and the organization and complete nucleotide sequence of the gene.; Newrzella D., Stoffel W.; Biol. Chem. Hoppe-Seyler 373:1233-1238(1992).

3. Cloning of a human acid sphingomyelinase cDNA with a new mutation that renders the enzyme inactive.; Ida H., Rennert O.M., Eto Y., Chan W.Y.; J. Biochem. 114:15-20(1993).

4. Isolation of cDNA clones encoding human acid sphingomyelinase: occurrence of alternatively processed transcripts.; Quintern L.E., Schuchman E.H., Levran O., Suchi M., Ferlinz K., Reinke H., Sandhoff K., Desnick R.J.; EMBO J. 8:2469-2473(1989).

5. Functional characterization of the N-glycosylation sites of human acid sphingomyelinase by site-directed mutagenesis.; Ferlinz K., Hurwitz R., Moczall H., Lansmann S., Schuchman E.H., Sandhoff K.; Eur. J. Biochem. 243:511-517(1997).

6. Human acid sphingomyelinase.; Lansmann S., Schuette C.G., Bartelsen O., Hoernschemeyer J., Linke T., Weisgerber J., Sandhoff K.;Eur. J. Biochem. 270:1076-1088(2003).

Product Specific References

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