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AP05201PU-N Polyclonal Antibody to Acid Sphingomyelinase - Purified

Alternate names: ASM, ASM-1, Acid Sphingomyelinase, SMPD1, Sphingomyelin Phosphodiesterase, aSMase

Quantity: 0.1 mg

Concentration: Lot specific

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).

Host: Rabbit

Immunogen: Synthetic peptide derived from human acid sphingomyelinase protein.

Format: **State:** Liquid purified IgG fraction.
Buffer System: PBS, pH 7.4 containing 0.08% Sodium Azide as preservative.

Applications: Western blot (5-10 µg/ml).
ELISA.
Other applications not tested. Optimal dilutions are dependent on conditions and should be determined by the user.

Specificity: The antibody recognizes human acid sphingomyelinase.

Storage: Ship at ambient temperature, freeze upon arrival.
Product should be stored (in aliquots) at -20°C.
Avoid repeated freezing and thawing.
Shelf life: one year from despatch.

General Readings:
1. Schuchman EH, Suchi M, Takahashi T, Sandhoff K, Desnick RJ. Human acid sphingomyelinase. Isolation, nucleotide sequence and expression of the full-length and alternatively spliced cDNAs. J Biol Chem. 1991 May 5;266(13):8531-9. PubMed PMID: 1840600.
2. Newrzella D, Stoffel W. Molecular cloning of the acid sphingomyelinase of the mouse and the organization and complete nucleotide sequence of the gene. Biol

Chem Hoppe Seyler. 1992 Dec;373(12):1233-8. PubMed PMID: 1292508.
3. Ida H, Rennert OM, Eto Y, Chan WY. Cloning of a human acid sphingomyelinase cDNA with a new mutation that renders the enzyme inactive. J Biochem. 1993 Jul;114(1):15-20. PubMed PMID: 8407868.
4. Quintern LE, Schuchman EH, Levran O, Suchi M, Ferlinz K, Reinke H, et al. Isolation of cDNA clones encoding human acid sphingomyelinase: occurrence of alternatively processed transcripts. EMBO J. 1989 Sep;8(9):2469-73. PubMed PMID: 2555181.
5. Ferlinz K, Hurwitz R, Moczall H, Lansmann S, Schuchman EH, Sandhoff K. Functional characterization of the N-glycosylation sites of human acid sphingomyelinase by site-directed mutagenesis. Eur J Biochem. 1997 Jan 15;243(1-2):511-7. PubMed PMID: 9030779.
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).