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SMPD1 Antibody (C-term)

Affinity Purified Rabbit Polyclonal Antibody (Pab)
Catalog # AP12227b

Product Information

Application	IHC-P-Leica, WB, FC, E
Primary Accession	P17405
Other Accession	Q0VD19, NP_000534.3
Reactivity	Human, Mouse
Predicted	Bovine, Canine, Rabbit
Host	Rabbit
Clonality	Polyclonal
Isotype	Rabbit IgG
Clone Names	RB31029
Calculated MW	69936
Antigen Region	391-419

Additional Information

Gene ID	6609
Other Names	Sphingomyelin phosphodiesterase, Acid sphingomyelinase, aSMase, SMPD1, ASM
Target/Specificity	This SMPD1 antibody is generated from rabbits immunized with a KLH conjugated synthetic peptide between 391-419 amino acids from the C-terminal region of human SMPD1.
Dilution	IHC-P-Leica~~1:500 WB~~1:1000 FC~~1:25 E~~Use at an assay dependent concentration.
Format	Purified polyclonal antibody supplied in PBS with 0.09% (W/V) sodium azide. This antibody is purified through a protein A column, followed by peptide affinity purification.
Storage	Maintain refrigerated at 2-8°C for up to 2 weeks. For long term storage store at -20°C in small aliquots to prevent freeze-thaw cycles.
Precautions	SMPD1 Antibody (C-term) is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	SMPD1 (HGNC:11120)
Function	Converts sphingomyelin to ceramide (PubMed: 12563314, PubMed:1840600,

PubMed:18815062, PubMed:25339683, PubMed:25920558, PubMed:27659707, PubMed:33163980). Exists as two enzymatic forms that arise from alternative trafficking of a single protein precursor, one that is targeted to the endolysosomal compartment, whereas the other is released extracellularly (PubMed:20807762, PubMed:21098024, PubMed:9660788). However, in response to various forms of stress, lysosomal exocytosis may represent a major source of the secretory form (PubMed:12563314, PubMed:20530211, PubMed:20807762, PubMed:22573858, PubMed:9393854).

Cellular Location

Lysosome. Lipid droplet. Secreted. Note=The secreted form is induced in a time- and dose-dependent by IL1B and TNF as well as stress and viral infection. This increase of the secreted form seems to be due to exocytosis of the lysosomal form and is Ca(2+)-dependent (PubMed:20530211, PubMed:20807762, PubMed:22573858). Secretion is dependent of phosphorylation at Ser-510 (PubMed:17303575). Secretion is induced by inflammatory mediators such as IL1B, IFNG or TNF as well as infection with bacteria and viruses (PubMed:12563314, PubMed:20807762)

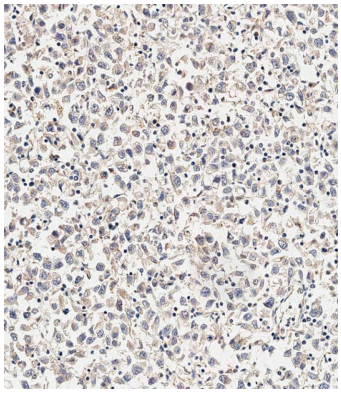
Background

The protein encoded by this gene is a lysosomal acid sphingomyelinase that converts sphingomyelin to ceramide. The encoded protein also has phospholipase C activity. Defects in this gene are a cause of Niemann-Pick disease type A (NPA) and Niemann-Pick disease type B (NPB). Multiple transcript variants encoding different isoforms have been identified. [provided by RefSeq].

References

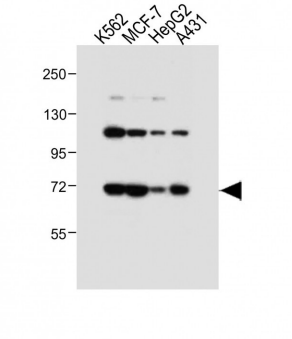
Bailey, S.D., et al. Diabetes Care 33(10):2250-2253(2010) Desnick, J.P., et al. Mol. Med. 16 (7-8), 316-321 (2010) : Talmud, P.J., et al. Am. J. Hum. Genet. 85(5):628-642(2009) Sugiyama, N., et al. Mol. Cell Proteomics 6(6):1103-1109(2007) Sleat, D.E., et al. Mol. Cell Proteomics 5(4):686-701(2006)

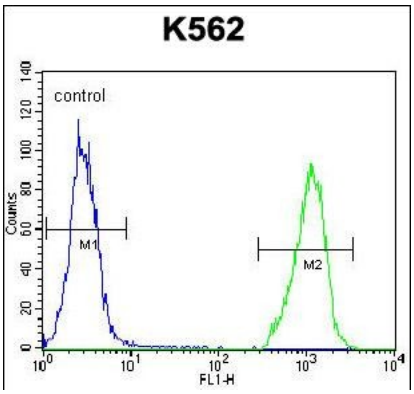
Images



Immunohistochemical analysis of paraffin-embedded Human testis carcinoma tissue using AP12227B performed on the Leica® BOND RXm. Tissue was fixed with formaldehyde at room temperature, antigen retrieval was by heat mediation with a EDTA buffer (pH9. 0). Samples were incubated with primary antibody(1:500) for 1 hours at room temperature. A undiluted biotinylated CRF Anti-Polyvalent HRP Polymer antibody was used as the secondary antibody.

All lanes : Anti-SMPD1 Antibody (C-term) at 1:4000 dilution Lane 1: K562 whole cell lysate Lane 2: MCF-7 whole cell lysate Lane 3: HepG2 whole cell lysate Lane 4: A431 whole cell lysate Lysates/proteins at 20 µg per lane. Secondary Goat Anti-Rabbit IgG, (H+L), Peroxidase conjugated at 1/10000 dilution. Predicted band size : 70 kDa Blocking/Dilution buffer: 5% NFDM/TBST.





SMPD1 Antibody (C-term) (Cat. #AP12227b) flow cytometric analysis of K562 cells (right histogram) compared to a negative control cell (left histogram).FITC-conjugated goat-anti-rabbit secondary antibodies were used for the analysis.

Citations

- Sphingosine mediates TNFα-induced lysosomal membrane permeabilization and ensuing programmed cell death in hepatoma cells.

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