10320 Camino Santa Fe, Suite G
San Diego, CA 92121
Tel: 858.875.1900 Fax: 858.875.1999

# SMPD1 Antibody (C-term)

**Affinity Purified Rabbit Polyclonal Antibody (Pab)**
**Catalog # AP12227b**

## Specification

### SMPD1 Antibody (C-term) - Product Information

| | |
|---|---|
| Application | **IHC-P-Leica, WB, FC,E** |
| Primary Accession | P17405 |
| Other Accession | Q0VD19, NP_000534.3 |
| Reactivity | **Human** |
| Predicted | **Bovine** |
| Host | **Rabbit** |
| Clonality | **Polyclonal** |
| Isotype | **Rabbit IgG** |
| Antigen Region | **391-419** |

### SMPD1 Antibody (C-term) - 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~~1:4000
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.

### SMPD1 Antibody (C-term) - 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).

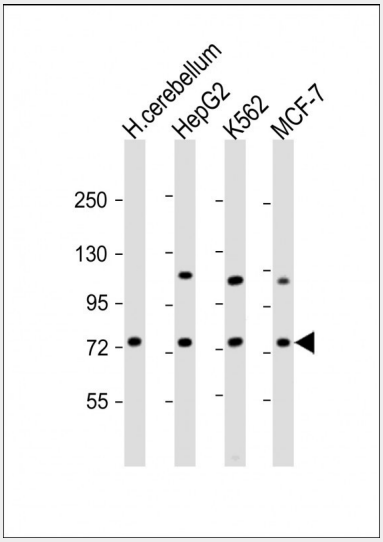
**Cellular Location**
Lysosome. Lipid droplet. Secreted. Note=The secreted form is induced in a time- and dose-dependent by IL1B and TNF as well as stress and viral infection. This increase of the secreted form seems to be due to exocytosis of the lysosomal form and is Ca(2+)-dependent (PubMed:20530211, 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)

## SMPD1 Antibody (C-term) - Protocols

Provided below are standard protocols that you may find useful for product applications.

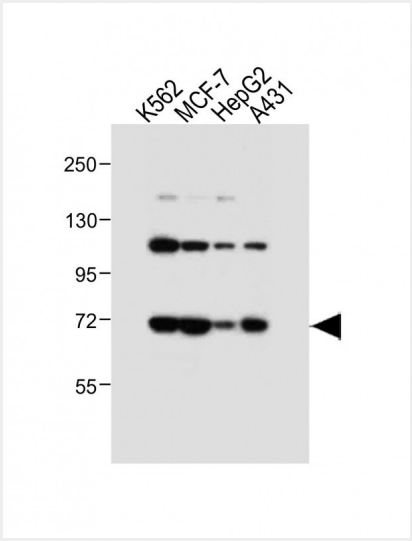
- Western Blot
- Blocking Peptides
- Dot Blot
- Immunohistochemistry
- Immunofluorescence
- Immunoprecipitation
- Flow Cytomety
- Cell Culture

## SMPD1 Antibody (C-term) - Images

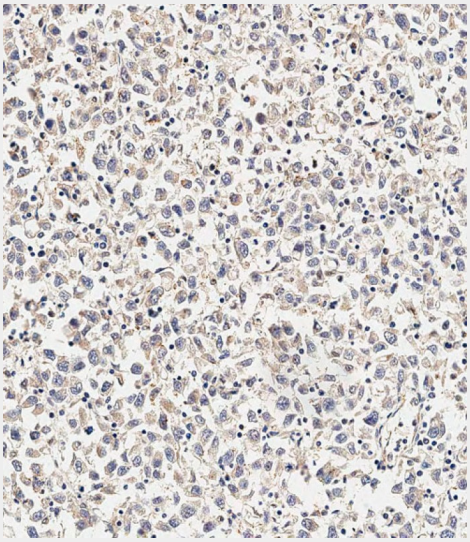



All lanes : Anti-SMPD1 Antibody (S376) at 1:2000 dilution Lane 1: human cerebellum lysate Lane 2: HepG2 whole cell lysate Lane 3: K562 whole cell lysate Lane 4: MCF-7 whole cell lysate Lysates/proteins at 20 µg per lane. Secondary Goat Anti-Rabbit IgG, (H+L), Peroxidase conjugated at 1/10000 dilution. Predicted band size : 70 kDa Blocking/Dilution buffer: 5% NFDM/TBST.

10320 Camino Santa Fe, Suite G
San Diego, CA 92121
Tel: 858.875.1900 Fax: 858.875.1999

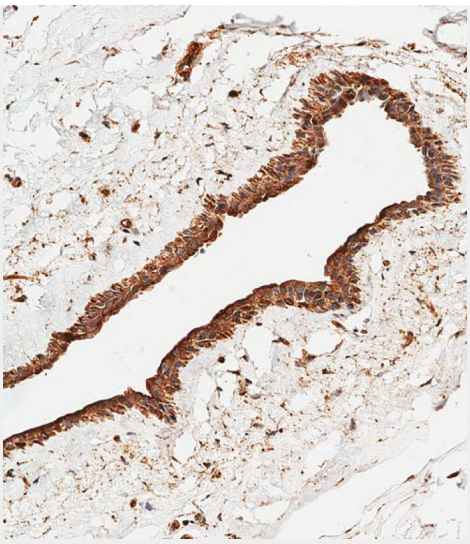



All lanes : Anti-SMPD1 Antibody (C-term) at 1:4000 dilution Lane 1: K562 whole cell lysate Lane 2: MCF-7 whole cell lysate Lane 3: HepG2 whole cell lysate Lane 4: A431 whole cell lysate Lysates/proteins at 20 µg per lane. Secondary Goat Anti-Rabbit IgG, (H+L), Peroxidase conjugated at 1/10000 dilution.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

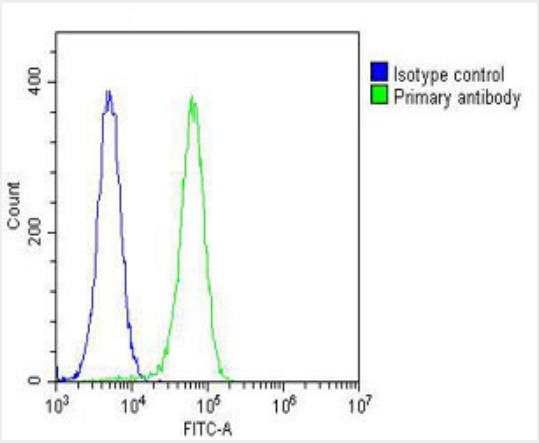


Immunohistochemical analysis of paraffin-embedded Human testis carcinoma tissue using AP12227B performed on the Leica® BOND RXm. Tissue was fixed with formaldehyde at room temperature, antigen retrieval was by heat mediation with a EDTA buffer (pH9. 0). Samples were incubated with primary antibody(1:500)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

10320 Camino Santa Fe, Suite G
San Diego, CA 92121
Tel: 858.875.1900 Fax: 858.875.1999



Immunohistochemical analysis of paraffin-embedded Human breast 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.




Overlay histogram showing K562 cells stained with AP12227b (green line). The cells were fixed with 2% paraformaldehyde (10 min) and then permeabilized with 90% methanol for 10 min. The cells were then icubated in 2% bovine serum albumin to block non-specific protein-protein interactions followed by the antibody (AP12227b, 1:25 dilution) for 60 min at 37ºC. The secondary antibody used was Goat-Anti--Rabbit IgG, DyLight® 488 Conjugated Highly Cross-Adsorbed(OH191631) at 1/200 dilution for 40 min at 37ºC. Isotype control antibody (blue line) was rabbit IgG (1µg/1x10^6 cells) used under the same conditions. Acquisition of >10, 000 events was performed.

**SMPD1 Antibody (C-term) - 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].

**SMPD1 Antibody (C-term) - 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)

**SMPD1 Antibody (C-term) - Citations**

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