abcam

Product datasheet

# Anti-Acid sphingomyelinase antibody [mAbcam74281] ab74281

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## Overview

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| **Product name** | Anti-Acid sphingomyelinase antibody [mAbcam74281] |
| **Description** | Mouse monoclonal [mAbcam74281] to Acid sphingomyelinase |
| **Host species** | Mouse |
| **Tested applications** | **Suitable for:** WB, Flow Cyt (Intra) |
| **Species reactivity** | **Reacts with:** Human |
| **Immunogen** | Synthetic peptide corresponding to Human Acid sphingomyelinase aa 1-100 conjugated to keyhole limpet haemocyanin. |
| **Positive control** | This antibody gave a positive signal in the following whole cell lysates: HepG2; A431; MCF7; HeLa; THP1. |
| **General notes** | We can conjugate this antibody to FITC for you (please see **ab150251** for details).<br><br>This antibody clone is manufactured by Abcam. If you require a custom buffer formulation or conjugation for your experiments, please contact **orders@abcam.com**.<br><br>The Life Science industry has been in the grips of a reproducibility crisis for a number of years. Abcam is leading the way in addressing this with our range of recombinant monoclonal antibodies and knockout edited cell lines for gold-standard validation. Please check that this product meets your needs before purchasing.<br><br>If you have any questions, special requirements or concerns, please send us an inquiry and/or contact our Support team ahead of purchase. Recommended alternatives for this product can be found below, along with publications, customer reviews and Q&As |

## Properties

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| **Form** | Liquid |
| **Storage instructions** | Shipped at 4°C. Store at +4°C short term (1-2 weeks). Upon delivery aliquot. Store at -20°C or -80°C. Avoid freeze / thaw cycle. |
| **Storage buffer** | pH: 7.40<br>Preservative: 0.02% Sodium azide<br>Constituent: PBS |
| **Purity** | Protein G purified |

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| **Clonality** | Monoclonal |
| **Clone number** | mAbcam74281 |
| **Myeloma** | Sp2/0-Ag14 |
| **Isotype** | IgG2a |
| **Light chain type** | kappa |

## Applications

**The Abpromise guarantee** Our **Abpromise guarantee** covers the use of ab74281 in the following tested applications.

The application notes include recommended starting dilutions; optimal dilutions/concentrations should be determined by the end user.

| Application | Abreviews | Notes |
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| **WB** | ★★★★★ (1) | Use a concentration of 5 µg/ml. Detects a band of approximately 65 kDa (predicted molecular weight: 70 kDa). |
| **Flow Cyt (Intra)** | | Use 1µg for $10^6$ cells.<br>**ab170191** - Mouse monoclonal IgG2a, is suitable for use as an isotype control with this antibody. |

## Target

**Function** Converts sphingomyelin to ceramide. Also has phospholipase C activities toward 1,2-diacylglycerolphosphocholine and 1,2-diacylglycerolphosphoglycerol. Isoform 2 and isoform 3 have lost catalytic activity.

**Involvement in disease** Defects in SMPD1 are the cause of Niemann-Pick disease type A (NPDA) [MIM:257200]; also known as Niemann-Pick disease classical infantile form. It is an early-onset lysosomal storage disorder caused by failure to hydrolyze sphingomyelin to ceramide. It results in the accumulation of sphingomyelin and other metabolically related lipids in reticuloendothelial and other cell types throughout the body, leading to cell death. Niemann-Pick disease type A is a primarily neurodegenerative disorder characterized by onset within the first year of life, mental retardation, digestive disorders, failure to thrive, major hepatosplenomegaly, and severe neurologic symptoms. The severe neurological disorders and pulmonary infections lead to an early death, often around the age of four. Clinical features are variable. A phenotypic continuum exists between type A (basic neurovisceral) and type B (purely visceral) forms of Niemann-Pick disease, and the intermediate types encompass a cluster of variants combining clinical features of both types A and B.
Defects in SMPD1 are the cause of Niemann-Pick disease type B (NPDB) [MIM:607616]; also known as Niemann-Pick disease visceral form. It is a late-onset lysosomal storage disorder caused by failure to hydrolyze sphingomyelin to ceramide. It results in the accumulation of sphingomyelin and other metabolically related lipids in reticuloendothelial and other cell types throughout the body, leading to cell death. Clinical signs involve only visceral organs. The most constant sign is hepatosplenomegaly which can be associated with pulmonary symptoms. Patients remain free of neurologic manifestations. However, a phenotypic continuum exists between type A (basic neurovisceral) and type B (purely visceral) forms of Niemann-Pick disease, and the intermediate types encompass a cluster of variants combining clinical features of both types A and B. In Niemann-Pick disease type B, onset of the first symptoms occurs in early childhood and patients can survive into adulthood.

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| **Sequence similarities** | Belongs to the acid sphingomyelinase family.<br>Contains 1 saposin B-type domain. |
| **Cellular localization** | Lysosome. |

## Images


Western blot - Anti-Acid sphingomyelinase antibody [mAbcam74281] (ab74281)

**All lanes :** Anti-Acid sphingomyelinase antibody [mAbcam74281] (ab74281) at 5 µg/ml

**Lane 1 :** HepG2 (Human hepatocellular liver carcinoma cell line) Whole Cell Lysate
**Lane 2 :** A431 (Human epithelial carcinoma cell line) Whole Cell Lysate
**Lane 3 :** MCF7 (Human breast adenocarcinoma cell line) Whole Cell Lysate

Lysates/proteins at 10 µg per lane.

**Secondary**
**All lanes :** Goat Anti-Mouse IgG H&L (HRP) preadsorbed (**ab97040**) at 1/5000 dilution

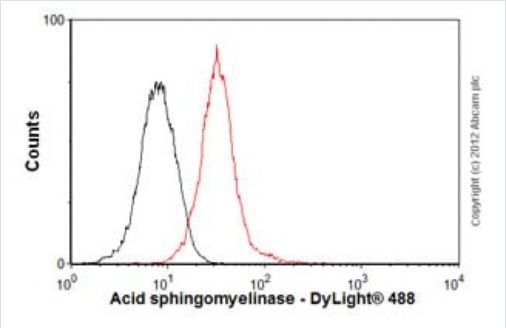
Developed using the ECL technique.

Performed under reducing conditions.

**Predicted band size:** 70 kDa
**Observed band size:** 65 kDa

**Exposure time:** 1 minute

The predicted molecular weight of Acid Sphingomyelinase protein is 70 kDa. However, the protein sequence contains a 46-residue signal sequence at the amino-terminal, which could explain the band observed.




Flow Cytometry (Intracellular) - Anti-Acid sphingomyelinase antibody [mAbcam74281] (ab74281)

Overlay histogram showing HeLa cells stained with ab74281 (red line). The cells were fixed with 80% methanol (5 min) and then permeabilized with 0.1% PBS-Tween for 20 min. The cells were then incubated in 1x PBS / 10% normal goat serum / 0.3M glycine to block non-specific protein-protein interactions followed by the antibody (ab74281, 1µg/1x$10^6$ cells) for 30 min at 22ºC. The secondary antibody used was DyLight® 488 goat anti-mouse IgG (H+L) (**ab96879**) at 1/500 dilution for 30 min at 22ºC. Isotype control antibody (black line) was mouse IgG2a [ICIGG2A] (**ab91361**, 1µg/1x$10^6$ cells) used under the same conditions. Acquisition of >5,000 events was performed.



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