Human SMPD1 Antibody

Monoclonal Mouse IgG_{2A} Clone # 563418

Catalog Number: MAB5348

DESCRIPTION

Species Reactivity	Human
Specificity	Detects human SMPD1 in direct ELISAs. In direct ELISAs, no cross-reactivity with recombinant human SMPD3 and recombinant mouse SMPD1 is observed.
Source	Monoclonal Mouse IgG_{2A} Clone # 563418
Purification	Protein A or G purified from hybridoma culture supernatant
Immunogen	Chinese hamster ovary cell line CHO-derived recombinant human SMPD1 isoform 1 His62-Pro628 Accession # NP_000534
Formulation	Lyophilized from a 0.2 μm filtered solution in PBS with Trehalose. See Certificate of Analysis for details. *Small pack size (-SP) is supplied either lyophilized or as a 0.2 μm filtered solution in PBS.

APPLICATIONS

Please Note: *Optimal dilutions should be determined by each laboratory for each application. General Protocols are available in the Technical Information section on our website.*

	Recommended Concentration	Sample
Immunoprecipitation	25 µg/mL	Conditioned cell culture medium spiked with Recombinant Human SMPD1 (Catalog # 5348-PD), see our available Western blot detection antibodies.
Neutralization	Measured by its ability to neutralize Recombinant Human SMPD1 (0.5 µg/mL, Catalog # 5348-PD) cleavage of the substrate 2-N-Hexadecanoylamino- 4-nitrophenylphosphorylcholine (HNPPC, 250 µM). The Neutralization Dose (ND_{50}) is typically 3.0 µg/mL	

PREPARATION AND STORAGE

Reconstitution	Sterile PBS to a final concentration of 0.5 mg/mL.
Shipping	The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below. *Small pack size (-SP) is shipped with polar packs. Upon receipt, store it immediately at -20 to -70 °C
Stability & Storage	**Use a manual defrost freezer and avoid repeated freeze-thaw cycles.** ● 12 months from date of receipt, -20 to -70 °C as supplied. ● 1 month, 2 to 8 °C under sterile conditions after reconstitution. ● 6 months, -20 to -70 °C under sterile conditions after reconstitution.

BACKGROUND

Sphingomyelin phosphodiesterase, also known as acid sphingomyelinase and encoded by the SMPD1 gene, is a lysosomal phosphodiesterase which belongs to the acid sphingomyelinase family (1). SMPD1 catalyzes the hydrolysis of sphingomyelin to ceramide and phosphorylcholine. Ceramide, a bioactive lipid, has emerged as an important signaling molecule involved in a variety of cellular processes such as cell differentiation, apoptosis, and proliferation (2). Activation of SMPD1 occurs by the removal, chemical modification or dimerization of its C-terminal cysteine residue (3). Deficiencies of SMPD1 result in a lysosomal storage disorder referred to as Niemann-Pick disease (4). rhSMPD1 was expressed without the last three C-terminal residues, and is therefore constitutively active.

References:

1. Schuchman, E.H. *et al.* (1991) J. Biol. Chem. **266**:8531.
2. Melendez, A.J. *et al.* (2008) Biochim. Biophys. Acta **1784**:66.
3. Qiu, H. *et al.* (2003) J. Biol. Chem. **278**:32744.
4. Smith, E.L. and Schuchman, E.H. (2008) FASEB J. **22**:3419.

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