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SGMS2 Antibody (C-term)

Affinity Purified Rabbit Polyclonal Antibody (Pab)
Catalog # AP9740b

Product Information

Application	WB, E
Primary Accession	Q8NHU3
Other Accession	Q4JM44, Q9D4B1, Q4R763
Reactivity	Human, Mouse
Predicted	Monkey, Rat, Bovine, Canine, Rabbit, Chicken
Host	Rabbit
Clonality	Polyclonal
Isotype	Rabbit IgG
Clone Names	RB24438
Calculated MW	42280
Antigen Region	338-365

Additional Information

Gene ID	166929
Other Names	Phosphatidylcholine:ceramide cholinephosphotransferase 2, Sphingomyelin synthase 2, SGMS2, SMS2
Target/Specificity	This SGMS2 antibody is generated from rabbits immunized with a KLH conjugated synthetic peptide between 338-365 amino acids from the C-terminal region of human SGMS2.
Dilution	WB~~1:1000 E~~Use at an assay dependent concentration.
Format	Purified polyclonal antibody supplied in PBS with 0.05% (V/V) Proclin 300. 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	SGMS2 Antibody (C-term) is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	SGMS2 {ECO:0000303|PubMed:30779713, ECO:0000312|HGNC:HGNC:28395}
Function	Sphingomyelin synthase that primarily contributes to sphingomyelin

	synthesis and homeostasis at the plasma membrane. Catalyzes the reversible transfer of phosphocholine moiety in sphingomyelin biosynthesis: in the forward reaction transfers phosphocholine head group of phosphatidylcholine (PC) on to ceramide (CER) to form ceramide phosphocholine (sphingomyelin, SM) and diacylglycerol (DAG) as by-product, and in the reverse reaction transfers phosphocholine from SM to DAG to form PC and CER (PubMed:14685263, PubMed:17449912, PubMed:17982138, PubMed:18370930, PubMed:38388831). The direction of the reaction appears to depend on the levels of CER and DAG in the plasma membrane (PubMed:14685263, PubMed:17449912, PubMed:17982138, PubMed:18370930). Does not use free phosphorylcholine or CDP-choline as donors (PubMed:14685263). Can also transfer phosphoethanolamine head group of phosphatidylethanolamine (PE) on to ceramide (CER) to form ceramide phosphoethanolamine (CPE) (PubMed:19454763). Regulates receptor-mediated signal transduction via mitogenic DAG and proapoptotic CER, as well as via SM, a structural component of membrane rafts that serve as platforms for signal transduction and protein sorting (PubMed:17449912, PubMed:17982138). To a lesser extent, plays a role in secretory transport via regulation of DAG pool at the Golgi apparatus and its downstream effects on PRKD1 (PubMed:18370930, PubMed:21980337). Required for normal bone matrix mineralization (PubMed:30779713).
Cellular Location	Cell membrane; Multi-pass membrane protein. Golgi apparatus membrane; Multi-pass membrane protein. Note=Primarily localized at the plasma membrane with a small fraction at the Golgi apparatus.
Tissue Location	Brain, heart, kidney, liver, muscle and stomach. Also expressed in a number of cell lines such as carcinoma HeLa cells, hepatoma Hep-G2 cells, and colon carcinoma Caco-2 cells

Background

Sphingomyelin, a major component of cell and Golgi membranes, is made by the transfer of phosphocholine from phosphatidylcholine onto ceramide, with diacylglycerol as a side product. SGMS2 is an enzyme that catalyzes this reaction primarily at the cell membrane. The synthesis is reversible, and this enzyme can catalyze the reaction in either direction. This protein is required for cell growth.

References

Ternes, P., et al. J. Lipid Res. 50(11):2270-2277(2009)
Liu, J., et al. Arterioscler. Thromb. Vasc. Biol. 29(6):850-856(2009)
Tani, M., et al. Biochem. Biophys. Res. Commun. 381(3):328-332(2009)

Citations

- Sphingomyelin Synthase 2 Participate in the Regulation of Sperm Motility and Apoptosis
- Sphingomyelin synthase 2 promotes H2O2-induced endothelial dysfunction by activating the Wnt/β-catenin signaling pathway.

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