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SGMS2 Antibody (C-term)

Affinity Purified Rabbit Polyclonal Antibody (Pab)
Catalog # AP9801b

Product Information

Application	WB, IHC-P, FC, E
Primary Accession	Q8NHU3
Other Accession	Q4JM44, Q9D4B1, Q4R763
Reactivity	Human
Predicted	Monkey, Mouse, Rat
Host	Rabbit
Clonality	Polyclonal
Isotype	Rabbit IgG
Clone Names	RB25446
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 IHC-P~~1:100~500 FC~~1:10~50 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	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

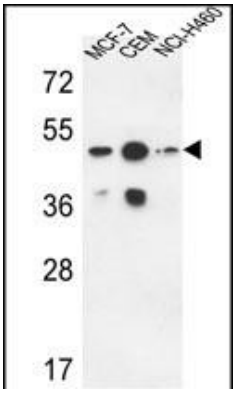
Sphingomyelin, a major component of cell and Golgi membranes, is made by the transfer of phosphocholine from phosphatidylcholine onto ceramide, with diacylglycerol as a side product. The protein encoded by this gene is an enzyme that catalyzes this reaction primarily at the cell membrane. The synthesis is reversible, and this enzyme can catalyze the reaction in either direction. The encoded protein is required for cell growth. Three transcript variants encoding the same protein have been found for this gene.

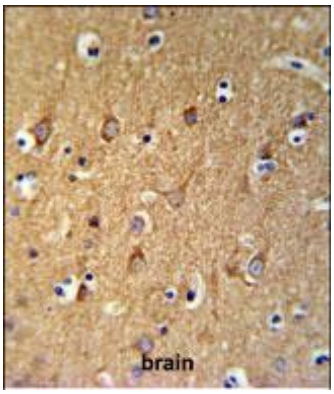
References

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) Wang, W., et al. Plant Cell 20(11):3163-3179(2008) Yeang, C., et al. Biochim. Biophys. Acta 1781(10):610-617(2008) Villani, M., et al. Biochem. J. 414(1):31-41(2008)

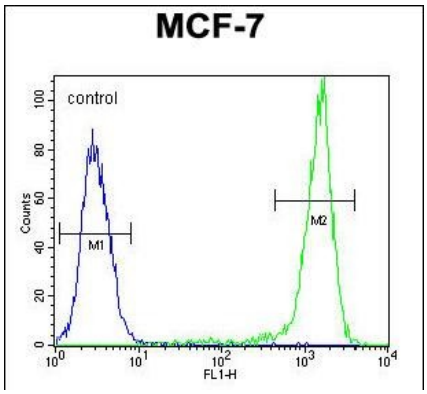
Images

SGMS2 Antibody (C-term) (Cat. #AP9801b) western blot analysis in MCF-7,CEM,NCI-H460 cell line lysates (35ug/lane).This demonstrates the SGMS2 antibody detected the SGMS2 protein (arrow).





SGMS2 Antibody (C-term) (Cat. #AP9801b) IHC analysis in formalin fixed and paraffin embedded brain tissue followed by peroxidase conjugation of the secondary antibody and DAB staining. This data demonstrates the use of the SGMS2 Antibody (C-term) for immunohistochemistry. Clinical relevance has not been evaluated.



SGMS2 Antibody (C-term) (Cat. #AP9801b) flow cytometric analysis of MCF-7 cells (right histogram) compared to a negative control cell (left histogram).FITC-conjugated goat-anti-rabbit secondary antibodies were used for the analysis.

Citations

- Effects of sepsis on the metabolism of sphingomyelin and cholesterol in mice with liver dysfunction.

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