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

SPHK1 Antibody (C-term R414)

Purified Rabbit Polyclonal Antibody (Pab)
Catalog # AP7237B

Product Information

Application	WB, IHC-P, FC, E
Primary Accession	Q9NYA1
Other Accession	Q8N632
Reactivity	Human
Host	Rabbit
Clonality	Polyclonal
Isotype	Rabbit IgG
Clone Names	RB15395
Calculated MW	42518
Antigen Region	313-343

Additional Information

Gene ID	8877
Other Names	Sphingosine kinase 1, SK 1, SPK 1, SPHK1, SPHK, SPK
Target/Specificity	This SPHK1 antibody is generated from rabbits immunized with a KLH conjugated synthetic peptide between 313-343 amino acids from the C-terminal region of human SPHK1.
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 prepared by Saturated Ammonium Sulfate (SAS) precipitation followed by dialysis against PBS.
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	SPHK1 Antibody (C-term R414) is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	SPHK1 (HGNC:11240)
Function	Catalyzes the phosphorylation of sphingosine to form sphingosine 1-phosphate (SPP), a lipid mediator with both intra- and extracellular functions. Also acts on D-erythro-sphingosine and to a lesser extent

sphinganine, but not other lipids, such as D,L-threo- dihydrosphingosine, N,N-dimethylsphingosine, diacylglycerol, ceramide, or phosphatidylinositol (PubMed:11923095, PubMed:20577214, PubMed:23602659, PubMed:24929359, PubMed:29662056). In contrast to proapoptotic SPHK2, has a negative effect on intracellular ceramide levels, enhances cell growth and inhibits apoptosis (PubMed:16118219). Involved in the regulation of inflammatory response and neuroinflammation. Via the product sphingosine 1-phosphate, stimulates TRAF2 E3 ubiquitin ligase activity, and promotes activation of NF- kappa-B in response to TNF signaling leading to IL17 secretion (PubMed:20577214). In response to TNF and in parallel to NF-kappa-B activation, negatively regulates RANTES induction through p38 MAPK signaling pathway (PubMed:23935096). Involved in endocytic membrane trafficking induced by sphingosine, recruited to dilate endosomes, also plays a role on later stages of endosomal maturation and membrane fusion independently of its kinase activity (PubMed:24929359, PubMed:28049734). In Purkinje cells, seems to be also involved in the regulation of autophagosome-lysosome fusion upon VEGFA (PubMed:25417698).

Cellular Location

Cytoplasm. Nucleus. Cell membrane. Endosome membrane; Peripheral membrane protein. Membrane, clathrin-coated pit. Synapse {ECO:0000250|UniProtKB:Q8CI15} Note=Translocated from the cytoplasm to the plasma membrane in a CIB1- dependent manner (PubMed:19854831). Binds to membranes containing negatively charged lipids but not neutral lipids (PubMed:24929359) Recruited to endocytic membranes by sphingosine where promotes membrane fusion (By similarity). {ECO:0000250|UniProtKB:Q8CI15, ECO:0000269|PubMed:19854831, ECO:0000269|PubMed:24929359}

Tissue Location

Widely expressed with highest levels in adult liver, kidney, heart and skeletal muscle. Expressed in brain cortex (at protein level) (PubMed:29662056).

Background

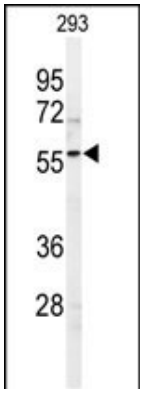
SPHK1 is a novel lipid messenger with both intracellular and extracellular functions. Intracellularly, it regulates proliferation and survival, and extracellularly, it is a ligand for EDG1 (MIM 601974). Various stimuli increase cellular levels of SPP by activation of sphingosine kinase (SPHK), the enzyme that catalyzes the phosphorylation of sphingosine. Competitive inhibitors of SPHK block formation of SPP and selectively inhibit cellular proliferation induced by a variety of factors, including platelet-derived growth factor (e.g., MIM 173430) and serum.

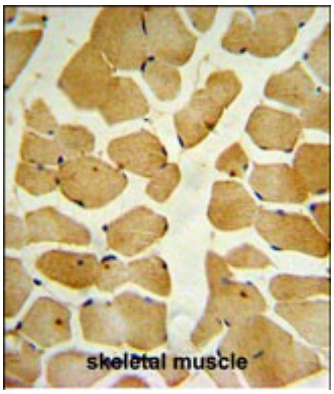
References

Hengst, J.A., et al. Arch. Biochem. Biophys. 494(1):23-31(2010)
Jarman, K.E., et al. J. Biol. Chem. 285(1):483-492(2010)
Gamble, J.R., et al. Am. J. Pathol. 175(5):2217-2225(2009)

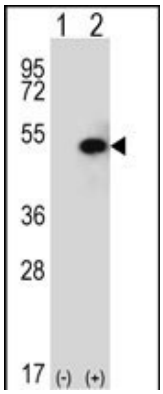
Images

Western blot analysis of SPHK1 Antibody (C-term R414) (Cat. #AP7237b) in 293 cell line lysates (35ug/lane).SPHK1 (arrow) was detected using the purified Pab.

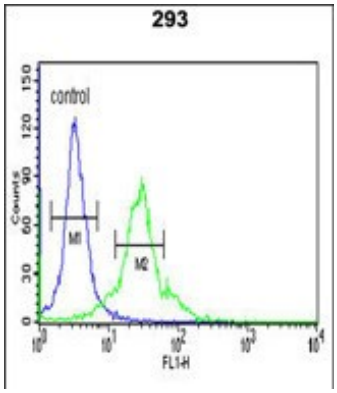




SPHK1 Antibody (C-term R414)(Cat. #AP7237b) IHC analysis in formalin fixed and paraffin embedded skeletal muscle followed by peroxidase conjugation of the secondary antibody and DAB staining. This data demonstrates the use of the SPHK1 Antibody (C-term R414) for immunohistochemistry. Clinical relevance has not been evaluated.



Western blot analysis of SPHK1 (arrow) using rabbit polyclonal SPHK1 Antibody (C-term R414) (Cat. #AP7237b). 293 cell lysates (2 ug/lane) either nontransfected (Lane 1) or transiently transfected (Lane 2) with the SPHK1 gene.



SPHK1 Antibody (C-term R414) (Cat. #AP7237b) flow cytometric analysis of 293 cells (right histogram) compared to a negative control cell (left histogram).FITC-conjugated goat-anti-rabbit secondary antibodies were used for the analysis.

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