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SPHK1 Antibody (N-term)

Purified Rabbit Polyclonal Antibody (Pab)

Catalog # AP7237a

Specification

SPHK1 Antibody (N-term) - Product Information

Application	**WB,E**
Primary Accession	O9NYA1
Reactivity	**Human**
Host	**Rabbit**
Clonality	**Polyclonal**
Isotype	**Rabbit Ig**
Antigen Region	**1-30**

SPHK1 Antibody (N-term) - Additional Information

Gene ID 8877

Other Names
Sphingosine kinase 1, SK 1, SPK 1, SPHK1, SPHK, SPK

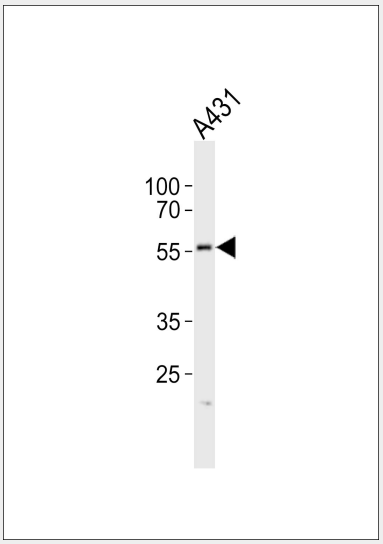
Target/Specificity
This SPHK1 antibody is generated from rabbits immunized with a KLH conjugated synthetic peptide between 1-30 amino acids from the N-terminal region of human SPHK1.

Dilution
WB~~1:500

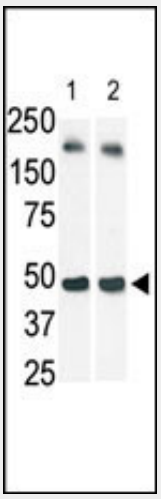
Format
Purified polyclonal antibody supplied in PBS with 0.09% (W/V) sodium azide. This antibody is prepared by Saturated Ammonium Sulfate (SAS) precipitation followed by dialysis against PBS.

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 (N-term) is for research use only and not for use in diagnostic or therapeutic procedures.



Western blot analysis of lysate from A431 cell line, using SPHK1 Antibody (M1)(Cat. #AP7237a). AP7237a was diluted at 1:1000. A goat anti-rabbit IgG H&L(HRP) at 1:10000 dilution was used as the secondary antibody. Lysate at 20ug.



The anti-SphK1 Pab (Cat. #AP7237a) is used in Western blot (Lane 2) to detect c-myc-tagged SphK1 in transfected 293 cell lysate (a c-myc antibody is used as control in Lane 1). Data is kindly provided by Dr. J. Van Brocklyn from the Ohio State University (Columbus, OH).

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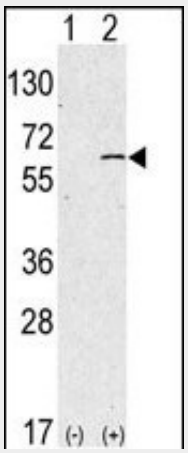
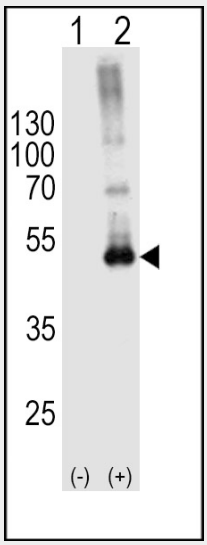
SPHK1 Antibody (N-term) - Protein Information

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:20577214, PubMed:23602659, PubMed:29662056, PubMed:24929359, PubMed:11923095). 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



Western blot analysis of anti-hSPHK1-M1 Pab (Cat. #AP7237a) in 293 cell line lysates transiently transfected with the SPHK1 gene (2ug/lane). hSPHK1-M1(arrow) was detected using the purified Pab.



Western blot analysis of SPHK1-M1 Antibody (arrow) using rabbit polyclonal SPHK1-M1 Antibody (Cat. #AP7237a). 293T cell lysates either nontransfected (Lane 1) or transiently transfected (Lane 2) with the SPHK1-M1 gene. A goat anti-rabbit IgG H&L(HRP) at 1:5000 dilution was used as the secondary antibody

SPHK1 Antibody (N-term) - Background

Sphingosine Kinase (SphK) catalyzes the phosphorylation of the lipid sphingosine, creating the bioactive lipid sphingosine-1-phosphate (S1P). S1P subsequently signals through cell surface G protein-coupled receptors, as well as

kinase activity (PubMed:28049734, PubMed:24929359). 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. Cell junction, 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).

intracellularly, to modulate cell proliferation, survival, motility and differentiation. SphK is an important signaling enzyme which is activated by diverse agents, including growth factors that signal through receptor tyrosine kinases, agents activating G protein-coupled receptors, and immunoglobulin receptors. Two SphK isotypes, SphK-1 and SphK-2, have been cloned, and both isotypes are ubiquitously expressed. SphK-1 has been shown to mediate cell growth, prevention of apoptosis, and cellular transformation, and is upregulated in a variety of human tumors. In contrast, SphK-2 increases apoptosis, and may be responsible for phosphorylating and activating the immunosuppressive drug FTY720.

SPHK1 Antibody (N-term) - References

Ota, T., et al., Nat. Genet. 36(1):40-45 (2004).
Nava, V.E., et al., FEBS Lett. 473(1):81-84 (2000).
Melendez, A.J., et al., Gene 251(1):19-26 (2000).
Pitson, S.M., et al., Biochem. J. 350 Pt 2, 429-441 (2000).

SPHK1 Antibody (N-term) - Protocols

Provided below are standard protocols that you may find useful for product applications.

- Western Blot
- Blocking Peptides
- Dot Blot
- Immunohistochemistry
- Immunofluorescence
- Immunoprecipitation
- Flow Cytomety
- Cell Culture

SPHK1 Antibody (N-term) - Citations

- FHL-2 suppresses VEGF-induced phosphatidylinositol 3-kinase/Akt activation via interaction with sphingosine kinase-1.
- Sphingosine-1-phosphate and sphingosine kinase are critical for transforming growth factor-beta-stimulated collagen production by cardiac fibroblasts.

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