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SPHK1 Antibody (N-term P74)

Purified Rabbit Polyclonal Antibody (Pab)
Catalog # AP7237d

Specification

SPHK1 Antibody (N-term P74) - Product Information

Application	**WB, IHC-P,E**
Primary Accession	Q9NYA1
Reactivity	**Human**
Host	**Rabbit**
Clonality	**Polyclonal**
Isotype	**Rabbit IgG**
Antigen Region	**59-89**

SPHK1 Antibody (N-term P74) - 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 59-89 amino acids from the N-terminal region of human SPHK1.

Dilution
WB~~1:1000
IHC-P~~1:100

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 P74) is for research use only and not for use in diagnostic or therapeutic procedures.

SPHK1 Antibody (N-term P74) - 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 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. 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).

SPHK1 Antibody (N-term P74) - 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 P74) - Images

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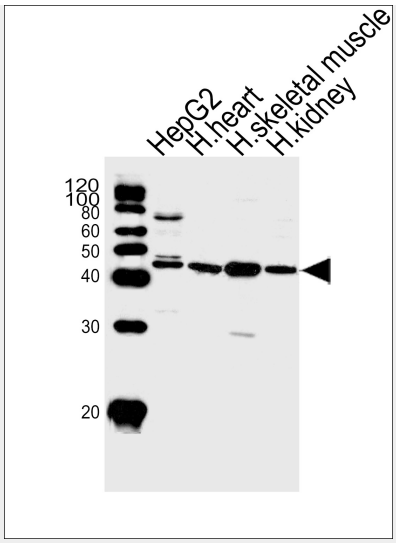
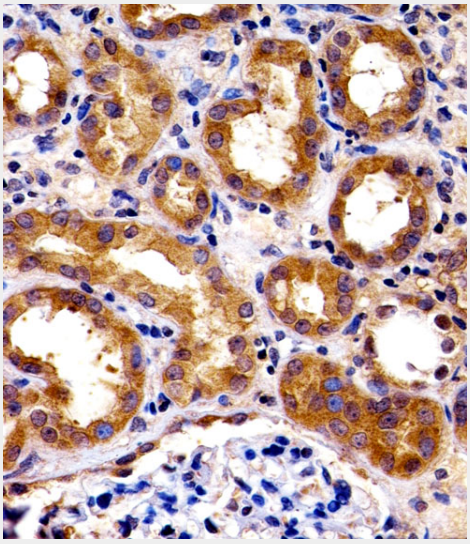


Western blot analysis of lysates from HepG2 cell line and human heart, skeletal muscle, kidney tissue lysate(from left to right), using SPHK1 Antibody (N-term P74)(Cat. #AP7237d). AP7237d was diluted at 1:1000 at each lane. A goat anti-rabbit IgG H&L(HRP) at 1:5000 dilution was used as the secondary antibody. Lysates at 35ug per lane.



Immunohistochemical analysis of paraffin-embedded H. kidney section using SPHK1 Antibody(N-term P74) (Cat#AP7237d). AP7237d was diluted at 1:100 dilution. A peroxidase-conjugated goat anti-rabbit IgG at 1:400 dilution was used as the secondary antibody, followed by DAB staining.

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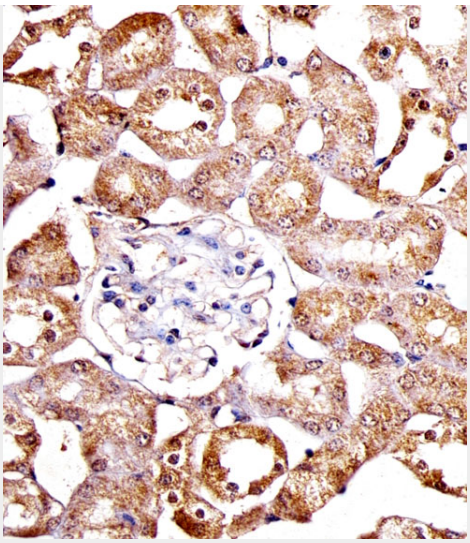

Immunohistochemical analysis of paraffin-embedded M. kidney section using SPHK1 Antibody(N-term P74) (Cat#AP7237d). AP7237d was diluted at 1:100 dilution. A peroxidase-conjugated goat anti-rabbit IgG at 1:400 dilution was used as the secondary antibody, followed by DAB staining.

SPHK1 Antibody (N-term P74) - 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 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 P74) - 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 P74) - Citations

- Isoflurane activates intestinal sphingosine kinase to protect against renal ischemia-reperfusion-induced liver and intestine injury.
- A novel function of sphingosine kinase 1 suppression of JNK activity in preventing inflammation and injury.