

**SPHK1 Antibody (N-term) Blocking Peptide**  
**Synthetic peptide**  
**Catalog # BP7237a****Specification**

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**SPHK1 Antibody (N-term) Blocking Peptide - Product Information**Primary Accession [Q9NYA1](#)**SPHK1 Antibody (N-term) Blocking Peptide - Additional Information****Gene ID** 8877**Other Names**

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

**Target/Specificity**

The synthetic peptide sequence used to generate the antibody [AP7237a](/product/products/AP7237a) was selected from the N-term region of human SPHK1. A 10 to 100 fold molar excess to antibody is recommended. Precise conditions should be optimized for a particular assay.

**Format**

Peptides are lyophilized in a solid powder format. Peptides can be reconstituted in solution using the appropriate buffer as needed.

**Storage**

Maintain refrigerated at 2-8°C for up to 6 months. For long term storage store at -20°C.

**Precautions**

This product is for research use only. Not for use in diagnostic or therapeutic procedures.

**SPHK1 Antibody (N-term) Blocking Peptide - 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](http://www.uniprot.org/citations/20577214), PubMed: [23602659](http://www.uniprot.org/citations/23602659), PubMed: [29662056](http://www.uniprot.org/citations/29662056), PubMed: [24929359](http://www.uniprot.org/citations/24929359), PubMed: [11923095](http://www.uniprot.org/citations/11923095)). In contrast to proapoptotic SPHK2, has a negative effect on intracellular ceramide levels, enhances cell growth and inhibits apoptosis (PubMed: [16118219](http://www.uniprot.org/citations/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:<a href="http://www.uniprot.org/citations/20577214" target="\_blank">20577214</a>). In response to TNF and in parallel to NF- $\kappa$ B activation, negatively regulates RANTES induction through p38 MAPK signaling pathway (PubMed:<a href="http://www.uniprot.org/citations/23935096" target="\_blank">23935096</a>). 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:<a href="http://www.uniprot.org/citations/28049734" target="\_blank">28049734</a>, PubMed:<a href="http://www.uniprot.org/citations/24929359" target="\_blank">24929359</a>). In Purkinje cells, seems to be also involved in the regulation of autophagosome-lysosome fusion upon VEGFA (PubMed:<a href="http://www.uniprot.org/citations/25417698" target="\_blank">25417698</a>).

#### **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) Blocking Peptide - Protocols**

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

- [Blocking Peptides](#)

### **SPHK1 Antibody (N-term) Blocking Peptide - Images**

### **SPHK1 Antibody (N-term) Blocking Peptide - 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) Blocking Peptide - 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).