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

SPHK2 Antibody (N-term) Blocking Peptide

Synthetic peptide
Catalog # BP7238a

Specification

SPHK2 Antibody (N-term) Blocking Peptide - Product Information

Primary Accession Q9NRA0

SPHK2 Antibody (N-term) Blocking Peptide - Additional Information

Gene ID 56848

Other Names
Sphingosine kinase 2, SK 2, SPK 2, SPHK2

Target/Specificity
The synthetic peptide sequence used to generate the antibody AP7238a was selected from the N-term region of human SPHK2 . 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.

SPHK2 Antibody (N-term) Blocking Peptide - Protein Information

Name SPHK2 (HGNC:18859)

Synonyms SK2

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-dihydrosphingosine, D- erythro-sphingosine and L-threo-dihydrosphingosine. Binds phosphoinositides (PubMed:19168031, PubMed:12954646). In contrast to prosurvival SPHK1, has a positive effect on intracellular ceramide levels, inhibits cells growth and enhances apoptosis (PubMed:16118219). In mitochondria, is important for cytochrome-c oxidase assembly and mitochondrial respiration. The SPP produced in mitochondria binds PHB2 and modulates the regulation via PHB2 of complex IV assembly and respiration (PubMed:<a

href="http://www.uniprot.org/citations/20959514" target="_blank">20959514). In nucleus, plays a role in epigenetic regulation of gene expression. Interacts with HDAC1 and HDAC2 and, through SPP production, inhibits their enzymatic activity, preventing the removal of acetyl groups from lysine residues with histones. Up- regulates acetylation of histone H3-K9, histone H4-K5 and histone H2B- K12 (PubMed:19729656). In nucleus, may have an inhibitory effect on DNA synthesis and cell cycle (PubMed:12954646, PubMed:16103110). In mast cells, is the main regulator of SPP production which mediates calcium influx, NF-kappa-B activation, cytokine production, such as TNF and IL6, and degranulation of mast cells (By similarity). In dopaminergic neurons, is involved in promoting mitochondrial functions regulating ATP and ROS levels (By similarity). Also involved in the regulation of glucose and lipid metabolism (By similarity).

Cellular Location
Cytoplasm. Nucleus. Endoplasmic reticulum {ECO:0000250|UniProtKB:Q9JIA7}. Mitochondrion inner membrane {ECO:0000250|UniProtKB:Q9JIA7}. Note=In nucleus, located in nucleosomes where it associates with core histone proteins such as histone 3 (PubMed:19729656). In brains of patients with Alzheimer's disease, may be preferentially localized in the nucleus. Cytosolic expression decrease correlates with the density of amyloid deposits (PubMed:29615132). In apoptotic cells, colocalizes with CASP1 in cell membrane where is cleaved and released from cells in an active form (PubMed:20197547).

Tissue Location
Mainly expressed in adult kidney, liver, and brain (PubMed:10751414). Expressed in cerebral cortex and hippocampus (at protein level) (PubMed:29615132). Isoform 1 is the predominant form expressed in most tissues (PubMed:16103110)

SPHK2 Antibody (N-term) Blocking Peptide - Protocols

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

- Blocking Peptides

SPHK2 Antibody (N-term) Blocking Peptide - Images

SPHK2 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.

SPHK2 Antibody (N-term) Blocking Peptide - References

Shu, X., et al., Mol. Cell. Biol. 22(22):7758-7768 (2002).Xia, P., et al., J. Biol. Chem. 277(10):7996-8003 (2002).Liu, H., et al., J. Biol. Chem. 275(26):19513-19520 (2000).Shutler, G., et al., Genomics 34(3):334-339 (1996).