SANTA CRUZ BIOTECHNOLOGY, INC.

SphK2 (P-19): sc-22704

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Sphingosine kinase (SphK or SphK1) is a key enzyme catalyzing the phosphorylation of sphingosine to form sphingosine 1-phosphate (SPP or S1P). SPP is a bioactive lipid that exerts multiple biological effects in a large variety of cell types, acting as either an intracellular messenger or an extracellular ligand coupled to Edg-family receptors. Competitive inhibitors of SphK1 block formation of SPP and selectively inhibit cellular proliferation induced by a variety of factors. One potent inhibitor of SphK1 activity is DMS (N,N-dimethylsphingosine). SPP/SphK1 has been implicated as a signaling pathway that regulates diverse cellular functions, including cell growth, proliferation and survival. Specifically, SphK1 is involved in the signaling pathway(s) that protects human hepatocytes from the apoptotic action of TNFα. Furthermore, SPP/SphK1 may play an important role in neuronal survival by regulating activation of SAPKs and caspases. SphK1 is widely expressed with highest levels in adult liver, kidney, heart and skeletal muscle; however, activation of SphK1 disengages cells from their liver-specific phenotype. SphK1 is highly homologous with SphK2, another member of a growing class of sphingolipid kinases. Expression of SphK2 mRNA exhibits a markedly different tissue distribution than that of SphK1 and appears at a later stage in embryonic development.

CHROMOSOMAL LOCATION

Genetic locus: SPHK2 (human) mapping to 19q13.33; Sphk2 (mouse) mapping to 7 B4.

SOURCE

SphK2 (P-19) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of SphK2 of human origin.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-22704 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

SphK2 (P-19) is recommended for detection of SphK2 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

SphK2 (P-19) is also recommended for detection of SphK2 in additional species, including canine, bovine and porcine.

Suitable for use as control antibody for SphK2 siRNA (h): sc-39225, SphK2 siRNA (m): sc-39226, SphK2 shRNA Plasmid (h): sc-39225-SH, SphK2 shRNA Plasmid (m): sc-39226-SH, SphK2 shRNA (h) Lentiviral Particles: sc-39225-V and SphK2 shRNA (m) Lentiviral Particles: sc-39226-V.

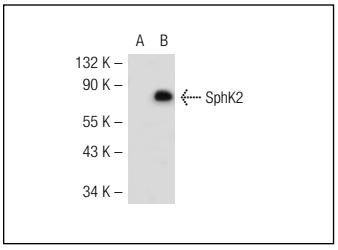
Molecular Weight of SphK2: 70 kDa.

Positive Controls: SphK2 (h): 293 Lysate: sc-111125, SphK2 (m): 293T Lysate: sc-127577 or mouse brain extract: sc-2253.

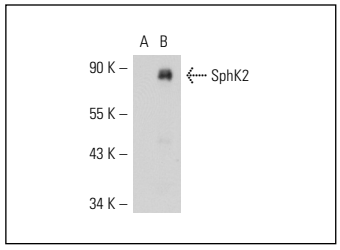
STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

DATA



SphK2 (P-19): sc-22704. Western blot analysis of SphK2 expression in non-transfected: sc-117752 (**A**) and mouse SphK2 transfected: sc-127577 (**B**) 293T whole cell lysates.



SphK2 (P-19): sc-22704. Western blot analysis of SphK2 expression in non-transfected: sc-110760 (**A**) and human SphK2 transfected: sc-111125 (**B**) 293 whole cell lysates.

SELECT PRODUCT CITATIONS

1. Sato, K., et al. 2007. Critical role of ABCA1 transporter in sphingosine 1-phosphate release from astrocytes. J. Neurochem. 103: 2610-2619.
2. Hashimoto, T., et al. 2009. Sphingosine kinase is induced in mouse 3T3-L1 cells and promotes adipogenesis. J. Lipid Res. 50: 602-610.
3. Takasugi, N., et al. 2011. BACE1 activity is modulated by cell-associated sphingosine-1-phosphate. J. Neurosci. 31: 6850-6857.
4. Chakraborty, G., et al. 2012. Ethanol triggers sphingosine 1-phosphate elevation along with neuroapoptosis in the developing mouse brain. J. Neurochem. 121: 806-817.
5. Cantrell Stanford, J., et al. 2012. Sphingosine 1-phosphate (S1P) regulates glucose-stimulated Insulin secretion in pancreatic beta cells. J. Biol. Chem. 287: 13457-13464.

RESEARCH USE

For research use only, not for use in diagnostic procedures.

PROTOCOLS

See our web site at www.scbt.com or our catalog for detailed protocols and support products.