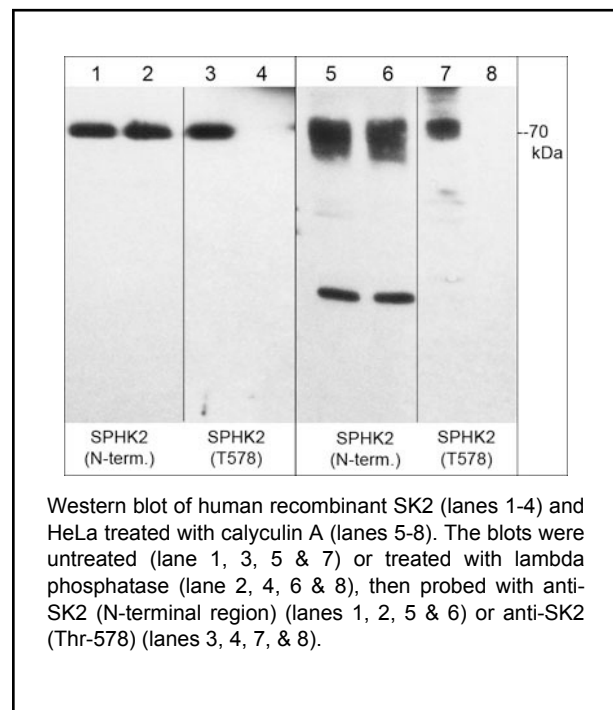


Background

Sphingolipids are metabolized into bioactive products that include ceramide, sphingosine, and sphingosine-1-phosphate (S1P). Sphingosine Kinase (SK) catalyzes the phosphorylation of the lipid sphingosine, creating S1P. S1P subsequently signals through cell surface G protein-coupled receptors, as well as intracellularly, to modulate cell proliferation, survival, motility and differentiation. Two isoforms of SK have been identified, SK1 and SK2. The mRNA for both of these isoforms is widely expressed with SK1 expression highest in brain, heart, kidney, thymus, spleen and lung, while SK2 is highest in kidney and liver. SKs can be activated through growth factor, G protein-coupled, and immunoglobulin receptor signalling. Regulation of SK1 and SK2 activity may occur through phosphorylation. SK1 is phosphorylated at Ser-225 by ERK leading to increased activity and translocation to the plasma membrane. SK2 is phosphorylated in response to EGF, PKC activators, and phorbol esters. ERK1 can phosphorylate both Ser-351 and Thr-578, and non-phosphorylatable mutants of these sites suppress ERK1-mediated chemotaxis.

Background References

Spiegel, S. & Milstien, S. (2003) *Nat. Rev. Mol. Cell Biol.* 4:397.
 Hait, N.C. et al. (2005) *J Biol. Chem.* 280:29462.
 Hait, N.C. et al. (2007) *J Biol. Chem.* 282(16):12058.



Applications

WB 1:500
 ELISA 1:2000

Species Reactivity

Hu, Rt, Ms

Specificity

This antibody was affinity purified using phospho-SK2 (Thr-578) peptide (without carrier). The antibody detects 70 kDa* proteins corresponding to the molecular mass of SK2 on SDS-PAGE immunoblots of human recombinant SK2 and endogenous SK2 in human HeLa cells treated with calyculin A. This reactivity is not observed after lambda phosphatase treatment.

End user should determine optimal dilution for their particular applications and experiments.
 Western blot membranes were incubated with diluted antibody in 5% non-fat milk, PBS, 0.04% Tween20 for 1 hour at room temperature.

*All molecular weights (MW) are confirmed by comparison to Bio-Rad Rainbow Markers and to western blot mobilities of known proteins with similar MW.

Immunogen

Uniprot ID: Q9NRA0

Phospho-SK2 (Thr-578) synthetic peptide (coupled to KLH) corresponding to amino acid residues surrounding Thr-578 in human SK2. This peptide sequence is highly conserved in rat and mouse SK2 proteins, and is not well conserved in SK1.

Buffer and Storage

Rabbit polyclonal, affinity-purified antibody is supplied in 100µl phosphate-buffered saline, 50% glycerol, 1 mg/ml BSA, and 0.05% sodium azide. Store at -20°C. Stable for 1 year.

Related Products

SP1621 Sphingosine Kinase 1 (Central region) Rabbit Polyclonal
 SP1641 Sphingosine Kinase 1 (Ser-225), phospho-specific Rabbit Polyclonal
 SK6010 Sphingosine Kinase 1 Phospho-Regulation Antibody Sampler Kit
 SP4621 Sphingosine Kinase 2 (N-terminal region) Rabbit Polyclonal
 SK6590 Sphingosine Kinase 2 Phospho-Regulation Antibody Sampler Kit

Product References

Xia, C. et al. (2018) *Antiviral Res.* 158:171.
 WB: human A549 cells
 Fu, P. et al. (2016) *J Biol Chem.* 291(53):27187.
 WB: human endothelial cells
 Wang, X. et al. (2016) *PLoS Pathog.* 12(10):e1005926.
 WB: brain microvascular endothelial cells

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