PRODUCT INFORMATION

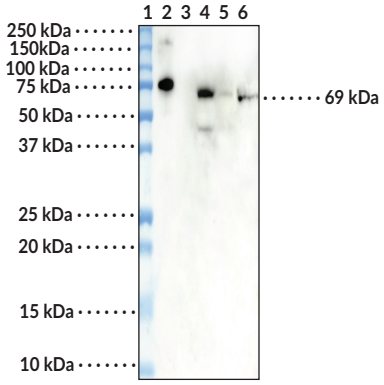
Sphingosine Kinase 2 Monoclonal Antibody (Clone 2C6)

Item No. 31096

Overview and Properties

Contents:	This vial contains 100 µg of protein G-purified monoclonal antibody.
Synonyms:	SK2, SPHK2, SPK2
Immunogen:	Full-length recombinant human SPHK2 protein (2-654)
Cross Reactivity:	(+) SPHK2; (-) SPHK1
Species Reactivity:	(+) Human; other species not tested
Uniprot No.:	Q9NRA0
Form:	Liquid
Storage:	-20°C (as supplied)
Stability:	≥3 years
Storage Buffer:	PBS, pH 7.2, with 50% glycerol and 0.02% NaN_3
Clone:	2C6
Host:	Mouse
Isotype:	IgG1
Applications:	ELISA and Western blot (WB); the recommended starting dilution for ELISA is 1:10,000 and 1:1,000 for WB. Other applications were not tested, therefore optimal working concentration/dilution should be determined empirically.

Image



Lane 1: Precision Plus™ All Blue Standards
Lane 2: Sphingosine Kinase 2 (human, recombinant) (Item No. 30191) (0.001 µg)
Lane 3: Sphingosine Kinase 1 (human, recombinant) (Item No. 10348) (0.01 µg)
Lane 4: Jurkat cell lysate (50 µg)
Lane 5: A549 cell lysate (50 µg)
Lane 6: Caco-2 cell lysate (50 µg)

Representative gel image shown; actual purity may vary between each batch.

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Description

Sphingosine kinase 2 (SPHK2) is an ATP-dependent lipid kinase that is encoded by the *SPHK2* gene in humans.[1] It is composed of an N-terminal domain that contains an ATP binding site and a C-terminal domain that mediates substrate binding and specificity. SPHK2 is localized to the mitochondria, nucleus, and endoplasmic reticulum and is expressed in a wide variety of tissues, including the liver and kidney.[3] Upon cellular stimulation with EGF, phorbol 12-myristate 13-acetate (PMA; Item No. 10008014), or FcεRI, SPHK2 is activated and catalyzes the phosphorylation of sphingosine to sphingosine-1-phosphate (S1P).[1,2] SPHK2 has roles in many physiological and pathological processes, including cancer, inflammation, and neurodegenerative diseases.[1,4-7] Unlike SPHK1, SPHK2-derived S1P increases apoptosis and inhibits cell growth *in vitro*.[8-10] *In vivo*, hepatic SPHK2 regenerates S1P intracellularly after its dephosphorylation to sphingosine by the phospholipid phosphatase LPP3 at the cell membrane, which removes a portion of the sphingosine from the circulation. Therefore, inhibition of SPHK2 results in a paradoxical increase in circulating S1P levels as sphingosine returns to the circulation where it can be phosphorylated by SPHK1.[11] Overexpression of *SPHK2* increases intracellular calcium levels and induces apoptosis in NIH3T3 cancer cells and reduces LPS-induced increases in TNF-α and IL-6 levels in isolated human peripheral blood mononuclear cell-derived macrophages *in vitro*.[4,5] SPHK2 activity is increased in postmortem frontal cortex from patients with Alzheimer's disease.[7] Cayman's Sphingosine Kinase 2 Monoclonal Antibody (Clone 2C6) can be used for ELISA and Western blot (WB) applications. The antibody recognizes SPHK2 at 69 kDa from human samples.

References

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