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Product Information

Sphingosine Kinase 2 human, recombinant expressed in insect cells, N-terminal His-tagged

Catalog Number **S7321**
Storage Temperature $-70\text{ }^{\circ}\text{C}$

CAS RN 50864-48-7
EC 2.7.1.91
Synonyms: SPHK2

Product Description

Sphingosine 1-phosphate (S1P) is a bioactive lipid mediator that is involved in multiple biological processes including cell growth, differentiation, motility, angiogenesis, cytoskeletal reorganization, and survival.^{1,2} Sphingosine Kinase (SPHK) is responsible for the conversion of sphingosine to S1P. SPHK can utilize either ATP or GTP as the phosphate donor.³ S1P cellular levels are regulated by its formation via SPHK.

Two Sphingosine Kinases have been identified, SPHK2 and SPHK1 (Catalog Number S9446). Both kinases produce S1P, but differ from one another in size, localization, activation factors, and substrate preference. SPHK2 is the larger of the two proteins, containing 618 amino acids. The additional amino acids are found in the center and N-terminus of SPHK2.⁴ SPHK2 is found in multiple tissues throughout the body and is most highly expressed in the liver, kidney, and brain.^{4,5} Like SPHK1, SPHK2 is found in the cytoplasm as well as in the nucleus.⁶ It has been demonstrated that SPHK2 is activated only by epidermal growth factor.⁷ SPHK2 increases apoptosis and prevents cell growth.⁸

Substrates:⁹

D-erythro-sphingosine (SPH)
Dihydrosphingosine (DHS)
Phytosphingosine (PHS)

Inhibitors:

N,N-Dimethylsphingosine
ADP

The product is supplied in a solution containing 25 mM Tris-HCl, pH 8.0, 100 mM NaCl, 0.05% TWEEN[®] 20, 10% glycerol, and 3 mM DTT.

Precautions and Disclaimer

This product is for R&D use only, not for drug, household, or other uses. Please consult the Material Safety Data Sheet for information regarding hazards and safe handling practices.

Storage/Stability

The product ships on dry ice and storage at $-70\text{ }^{\circ}\text{C}$ is recommended. After the initial thawing, aliquot the remaining unused enzyme and snap-freeze in dry ice/ethanol bath or liquid nitrogen.

References

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6. Igarashi, N., *J. Biol. Chem.*, **278**, 46832–46839 (2003).
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