PRODUCT INFORMATION

Sphingosine Kinase 1 (human, recombinant)

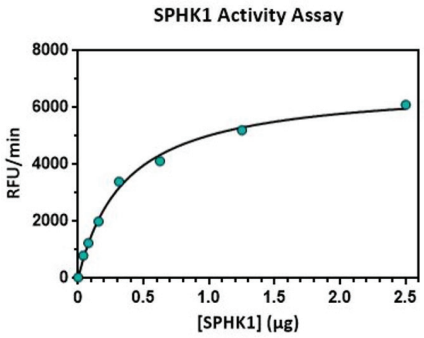
Item No. 10348

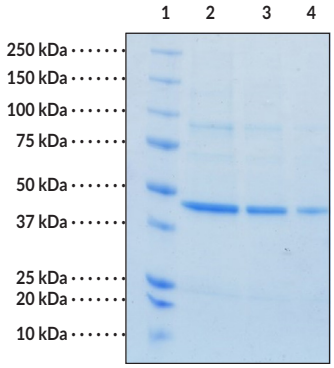
Overview and Properties

Synonyms:	SK1, SPHK
Source:	Human recombinant N-terminal hexahistidine-tagged protein from Sf9 cells
Uniprot No.:	Q9NYA1
Molecular Weight:	47.5 kDa
Storage:	-80°C (as supplied)
Stability:	≥1 year
Purity:	***batch specific*** (≥80% estimated by SDS-PAGE)
Supplied in:	25 mM HEPES, pH 8.0, with 150 mM sodium chloride, 3 mM DTT, 0.05% polysorbate 20, and 25% glycerol
Protein Concentration:	***batch specific*** mg/ml
Activity:	***batch specific*** U/ml
Specific Activity:	***batch specific*** U/mg
Unit Definition:	One unit is defined as the amount of enzyme required to produce 1 nmol of ADP per minute at 25 °C in 20 mM Hepes, pH, 7.4, containing 50 mM NaCl, 10 mM MgCl2, 1 mM EGTA and 0.02% Triton X-100 and 50 µM Sphingosine (d18:1) (Item No. 10007907)

Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Images





Lane 1: MW Markers
Lane 2: SPHK1 (4 µg)
Lane 3: SPHK1 (2 µg)
Lane 4: SPHK1 (1 µg)

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

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Description

Sphingosine kinase (SPHK) is an important enzyme in the sphingolipid metabolic pathway. SPHKs phosphorylate D-*erythro*-sphingosine to yield sphingosine-1-phosphate (S1P). To date two isoforms of SPHK, SPHK1 and SPHK2, have been identified and characterized from mammalian cells.[1] Among them, SPHK1 has been implicated to play a role in signaling pathways in mast cells and in TNF-α-triggered responses of fibroblasts and epithelial cells. Recent findings also indicate that SPHK1 mRNA levels are increased in a variety of human tumors. Brain tumors with high SPHK1 expression correlated with poor survival of patients and high expression of SPHK1 appears to be an oncogenic event required for erythroleukaemic progression.[2,3] Thus SPHK is a potential therapeutic target for the control of cancer and inflammation.[2,3]

References

1. Pitson, S.M., D'Andrea, R.J., Vandeleur, L., *et al*. Human sphingosine kinase: Purification, molecular cloning and characterization of the native and recombinant enzymes. *Biochem J.* **350**, 429-441 (2000).
2. Taha, T.A., Hannun, Y.A., and Obeid, L.M. Sphingosine kinase: Biochemical and cellular regulation and role in disease. *Journal of Biochemistry and Molecular Biology* **39(2)**, 113-131 (2006).
3. Leclercq, T.M. and Pitson, S.M. Cellular signalling by sphingosine kinase and sphingosine 1-phosphate. *IUBMB Life* **58**, 467-472 (2006).

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