

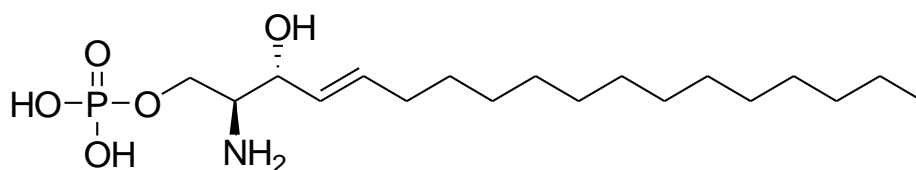
Sphingosine 1-phosphate (S1P)

Catalog number: S-2000

Molecular Formula: $C_{18}H_{38}NO_5P$

MW: 379.5

CAS: 26993-30-6



Alternate Name: S1P (d18:1)

Solubility: S1P is sparingly soluble in organic solvents but will dissolve at 0.3 mg/mL in warm MeOH (alternately vortex for 1 min then sonicate in a bath sonicator for 10 minutes until a clear solution is obtained. Heating the solution (50-65°C) can also help with solubilization). S1P is also soluble at >1 mg/mL in warm acetic acid.

Aqueous solutions of S1P bound to bovine serum albumin (BSA) can be prepared. BSA Stock solution preparation: Add desired amount of S1P dissolved in methanol to a glass vial and evaporate solvent under a stream of nitrogen to leave a thin film on the vial wall. Add an aqueous solution of 37 °C Fatty acid free BSA (4 mg/mL) to yield a final concentration of 125 μ M S1P. Incubate at 37 °C for 30 minutes vortexing repeatedly.

Storage and Handling: Sphingosine 1-phosphate is relatively stable at room temperature as a solid. It is best stored as a dried solid, protected from light at -20°C. Solutions/emulsions of S1P should be kept at -20°C. Storage in basic buffers (pH > 9.0) or acidic buffers (pH < 4.0) may cause decomposition.

Background: S1P is a bioactive lysophospholipid formed by phosphorylation of sphingosine by sphingosine kinases. S1P binds to five G-protein coupled receptors designated S1P₁₋₅ leading to cell proliferation, motility, and has a role in regulation of cell shape. In addition, S1P acts as an intracellular mediator in a receptor-independent manner regulating cell survival and Ca²⁺ homeostasis.

References: 1) S. Spiegel and S. Milstein "Sphingosine 1-phosphate, a key signaling molecule" *J. Biol. Chem.*, 2002, 277, 25851-25854.

2) C. Donati and P. Bruni "Sphingosine 1-phosphate regulates cytoskeleton dynamics: Implications in its biological response" *Biochim Biophys. Acta.*, 2006, 1758, 2037-2048.

Hazardous Properties and Cautions: The toxicological and pharmacological properties of this compound are not fully known. For further information see the MSDS on request. This product is manufactured and shipped only in small quantities, intended for research and development in a laboratory utilizing prudent procedures for handling chemicals of unknown toxicity, under the supervision of persons technically qualified to evaluate potential risks and authorized to enforce appropriate health and safety measures. As with all research chemicals, precautions should be taken to avoid unnecessary exposures or risks.

Warranty and Disclaimer: Echelon warrants the product conforms to the specifications stated herein. In the event of nonconformity, Echelon will replace products or refund purchase price, at its sole option, and Echelon shall not be responsible for any other loss or damage, whether known or foreseeable to Echelon. No other warranties apply, express or implied, including but not limited to warranty of fitness for any purpose or implied warranty of merchantability. Purchaser is solely responsible for all consequences of its use of the product and Echelon assumes no responsibility therefore, including success of purchaser's research and development, or health or safety of any uses of the product.

Technical Data Sheet, Rev 3, 1-15-19 – For research use only. Not intended for diagnostic or therapeutic use.



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