

Sphingosine-1-phosphate

Chemical Properties

CAS No. : 26993-30-6

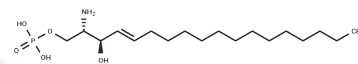
Formula: C₁₈H₃₈N₁O₅P

Molecular Weight: 379.47

Storage: Store at low temperature, Keep away from direct sunlight

Powder: -20°C for 3 years | In solvent: -80°C for 1 year

Actual storage temperature shall be subject to the COA.



Biological Description

Description	Sphingosine-1-phosphate (S1P) is an agonist for S1P1-5 receptors and a ligand for GPR3, GPR6, and GPR12. As an intracellular second messenger, it mobilizes Ca ²⁺ and acts as an extracellular ligand for G-protein coupled receptors. This important lipid mediator is generated from sphingosine or other membrane phospholipids.
Targets(IC50)	Endogenous Metabolite, LPL Receptor, S1P Receptor
In vitro	<p>Sphingosine-1-phosphate (S1P) (1 μM) induces significant Ca²⁺ release in HEK293 cells under serum starvation conditions (1% FCS).[1]</p> <p>In functional Ca²⁺ assays, Suramin alone had no effect on intracellular Ca²⁺ release via gpr3, gpr6, or gpr12. In contrast, S1P (1 μM) induces Ca²⁺ release from gpr3, gpr6, and gpr12 in transfected HEK293 cells in the presence of varying concentrations of suramin. [2]</p> <p>In a functional Ca²⁺ assay, S1P (3-3000 nM) exhibits nanomolar EC₅₀ values in the presence of Suramin (300 μM) for gpr3 (EC₅₀=29 nM), gpr6 (EC₅₀=15 nM) and gpr12 (EC₅₀=24 nM), rat gpr3 (EC₅₀=68 nM), respectively act on HEK293 cells.[2]</p> <p>S1P increases the expression of S1P1 and Gqi5, and when used at a concentration of 200 nM, it allows Gi proteins to stimulate phospholipase C, as well as TAG-Jurkat cells expressing S1P2 and S1P3 receptors (EC 50s=8 and 11 nM).[3]</p>

Solubility Information

Solubility	<p>H₂O: < 1 mg/mL (insoluble)</p> <p>NaOH: 12.5 mg/mL (32.94 mM), when pH is adjusted to 12 with 1 M NaOH. Sonication is recommended</p> <p>DMSO: < 1 mg/mL (insoluble)</p> <p>(< 1 mg/ml refers to the product slightly soluble or insoluble)</p>
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Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	2.6353 mL	13.1763 mL	26.3525 mL
5 mM	0.5271 mL	2.6353 mL	5.2705 mL
10 mM	0.2635 mL	1.3176 mL	2.6353 mL
50 mM	0.0527 mL	0.2635 mL	0.5271 mL

Please select the appropriate solvent to prepare the stock solution, according to the solubility of the product in different solvents. Please use it as soon as possible.

Note: The dilution table applies only to solid products. For liquid products, please calculate the stock solution based on the stated concentration and/or density.

Reference

Sanchez T, et al. Structural and functional characteristics of S1P receptors. *J Cell Biochem.* 2004 Aug 1;92(5):913-22.

Uhlenbrock K, et al. Sphingosine 1-phosphate is a ligand of the human gpr3, gpr6 and gpr12 family of constitutively active G protein-coupled receptors. *Cell Signal.* 2002 Nov;14(11):941-53.

An S, et al. Transduction of intracellular calcium signals through G protein-mediated activation of phospholipase C by recombinant sphingosine 1-phosphate receptors. *Mol Pharmacol.* 1999 May;55(5):787-94.

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Tel:781-999-4286 E_mail:info@targetmol.com Address:34 Washington Street,Wellesley Hills,MA 02481