

FTY720 (S)-Phosphate

Chemical Properties

CAS No. : 402616-26-6

Formula: C19H34NO5P

Molecular Weight: 387.45

The compound is unstable in solution. Please use soon

Storage:

Powder: -20°C for 3 years

Actual storage temperature shall be subject to the COA.



Biological Description

Description	FTY720 (S)-Phosphate is the active stereoisomeric phosphate derivative of FTY720 that acts as a potent modulator of sphingosine-1-phosphate (S1P) receptors. FTY720 (S)-Phosphate binds to S1P receptor subtypes S1P1, S1P3, S1P4, and S1P5 with K_i values of 2.1, 5.9, 23, and 2.2 nM respectively, causing receptor internalization on lymphocytes, preventing S1P-mediated lymphocyte egress from lymphoid tissues. FTY720 (S)-Phosphate also enhances endothelial barrier integrity, stimulates transporters such as Abcb1 and Abcc1, and inhibits cytosolic phospholipase A2 activity, highlighting its multifunctional pharmacological properties, making it an compound of interest in the research of diseases including multiple sclerosis, autoimmune diseases and cancer.
Targets(IC50)	LPL Receptor,S1P Receptor
In vitro	FTY720 (S)-Phosphate (Tys, 1 μ M) can preserve the expression level of S1PR1 protein and improve the barrier function of Homo sapiens pulmonary artery endothelial cells by activating S1PR1, without significantly affecting the ubiquitination process of S1PR1 at this concentration. Within the dose range of 0.01-50 μ M, FTY720 (S)-Phosphate can inhibit the recruitment of β -arrestin to S1PR1 [1].
In vivo	FTY720 (S)-Phosphate (0.5 mg/kg, intraperitoneal injection) maintained the expression level of S1PR1 in mouse lung tissue, exerted protective effects against bleomycin-induced acute lung injury (ALI), and reduced the degree of leukocyte infiltration in the lung tissue of bleomycin-injured model mice [1].

Solubility Information

Solubility	DMSO: 0.5 mg/mL (slightly soluble),Sonication is recommended. H2O: < 1 mg/mL (insoluble) (< 1 mg/ml refers to the product slightly soluble or insoluble)
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Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	2.581 mL	12.9049 mL	25.8098 mL
5 mM	0.5162 mL	2.581 mL	5.162 mL
10 mM	0.2581 mL	1.2905 mL	2.581 mL
50 mM	0.0516 mL	0.2581 mL	0.5162 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

- Wang L, et al. FTY720 (s)-phosphonate preserves sphingosine 1-phosphate receptor 1 expression and exhibits superior barrier protection to FTY720 in acute lung injury. *Crit Care Med.* 2014 Mar;42(3):e189-99.
- Lingling Jia, et al. *Clostridium butyricum* CGMCC0313.1 Protects against Autoimmune Diabetes by Modulating Intestinal Immune Homeostasis and Inducing Pancreatic Regulatory T Cells. *Front Immunol.* 2017 Oct 19;8:1345.

Inhibitor · Natural Compounds · Compound Libraries · Recombinant Proteins

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