Product Data Sheet

Product Name: FTY720 Phosphate
Cat. No.: GC13712

Chemical Properties

Cas. No.	402615-91-2		
Chemical Name	2-amino-2[2-(4-octylphenyl)ethyl]-1,3-propanediol, mono dihydrogen phosphate ester		
SMILES	CCCCCCCCC1=CC=C(CCC([NH3+])(COP([O-])(O)=O)CO)C=C1		
Formula	$C_{19}H_{34}NO_5P$	M.Wt	387.5
Solubility	≤0.5mg/ml in chloroform	Storage	Store at -20°C
General tips	For obtaining a higher solubility , please warm the tube at 37 ℃ and shake it in the ultrasonic bath for a while.Stock solution can be stored below -20℃ for several months.		
Shipping Condition	Evaluation sample solution : ship with blue ice All other available size: ship with RT , or blue ice upon request.		
Structure	FTY720 Phosphate		

Background

FTY720 is sphingosine-1-phosphate (S1P) receptors agonist [1]. FTY720 is a novel immunomodulatory agent derived from ISP-1 (myriocin), a fungal metabolite that exists in traditional Chinese herbal medicine. In higher eukaryotes, S1P is the ligand for five G-protein-coupled receptors. These S1P receptors are differentially expressed and regulate vascular maturation, angiogenesis, cardiac development and immunity. S1P receptors are important for directed cell movement [2].

In vitro: The phosphorylated FTY720 acted as agonist for a family of G protein-coupled receptors in vitro. FTY720 inhibited sphingosine-1-phosphate lyase activity [3]. FTY720 phosphate acted as a potent agonist at sphingosine-1-phosphate (S1P) receptors S1P1, S1P3, S1P4, and S1P5 with IC50 values of 0.2-6 nM [3].

In vivo: In a variety of transplant and autoimmune models, FTY720 was efficacious without inducing a generalized immunosuppressed state. FTY720 was effective in human kidney transplantation. FTY720 elicited lymphopenia resulting from a reversible

Tel: (909) 407-4943 Fax: (626) 353-8530 E-mail: tech@glpbio.com
Address: 10292 Central Ave. #205, Montclair, CA, USA

redistribution of lymphocytes from circulation to secondary lymphoid tissues by unknown mechanisms. In a rodent model of multiple sclerosis, the phosphorylated FTY720 compound was a potent agonist at four s S1P receptors. Phosphorylation of FTY720 acted through sphingosine 1-phosphate signaling pathways to modulate chemotactic responses and lymphocyte trafficking [1]. FTY720 was phosphorylated in vivo. In mice, treatment with FTY720 inhibited tissue sphingosine-1-phosphate lyase activity, whereas lyase gene and protein expression were not significantly affected [3].

References:

[1] Brinkmann V, Davis M D, Heise C E, et al. The immune modulator FTY720 targets sphingosine 1-phosphate receptors[J]. Journal of Biological Chemistry, 2002, 277(24): 21453-21457.

[2] Spiegel S, Milstien S. Sphingosine-1-phosphate: an enigmatic signalling lipid[J]. Nature reviews Molecular cell biology, 2003, 4(5): 397-407.

[3] Bandhuvula P, Tam Y Y, Oskouian B, et al. The immune modulator FTY720 inhibits sphingosine-1-phosphate lyase activity[J]. Journal of Biological Chemistry, 2005, 280(40): 33697-33700.

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