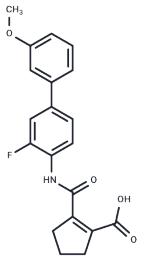
Data Sheet (Cat.No.T2601)

TargetMol

Vidofludimus

Chemical Properties



CAS No. : 717824-30-1

Formula: C20H18FNO4

Molecular Weight: 355.36

Appearance: no data available

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

Biological Description

Description	Vidofludimus (SC12267) (4SC-101, SC12267) is a novel small molecule inhibitor of dihydroorotate dehydrogenase (DHODH).
Targets(IC50)	Dehydrogenase,DNA/RNA Synthesis,Interleukin
In vitro	Vidofludimus causes a concentration dependent inhibition of phytohemagglutinin-stimulated PBMC proliferation via the inhibition of pyrimidine de novo synthesis. [1] Vidofludimus attenuates IL-17 secretion from colonic strips by inhibition of STAT3 and NF-κB activation. [2]
In vivo	In MRLlpr/lpr mice, Vidofludimus (300 mg/kg, p.o.) reduces systemic autoimmunity and improves Lupus Nephritis. [1] In Rats, Vidofludimus (60 mg/kg, p.o.) effectively reduces macroscopic and histological pathology and the numbers of CD3+ T cells. [2] In a rat model of renal transplantation, Vidofludimus (20 mg/kg, p.o.) prolongs survival, paralleled by amelioration of histologic signs of acute rejection. [3]
Kinase Assay	DHODH inhibition assay: In vitro DHODH inhibition assay mixture contains 50 μM decycloubiquinone, 100 μM dihydroorotate, and 60 μM 2,6-dichloroindophenol. The amount of enzyme is adjusted such that an average slope of approximately 0.2 AU/min will be achieved in the assay for the positive control (eg, without inhibitor). Measurements are conducted in 50 mM TrisHCl, 150 mM KCl, 0.1% Triton X-100, and pH 8.0 at 30°C in a final volume of 1 ml. The components are mixed, and the reaction is started by adding dihydroorotate. The reaction is followed spectrophotometrically by measuring the decrease in absorption at 600 nm for 2 minutes. The assay is linear in time and enzyme concentration. Inhibitory studies are conducted in a standard assay with additional variable amounts of inhibitor. For the determination of the IC50 values (concentration of inhibitor required for 50% inhibition), eight different inhibitor concentrations are applied. Each data point is recorded in triplicates on a single measurement day.

Solubility Information

Solubility	H2O: < 1 mg/mL (insoluble or slightly soluble), DMSO: 100 mg/mL (281.4 mM),Sonication is recommended. Ethanol: 1 mg/mL (2.81 mM),Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	2.814 mL	14.0702 mL	28.1405 mL
5 mM	0.5628 mL	2.814 mL	5.6281 mL
10 mM	0.2814 mL	1.407 mL	2.814 mL
50 mM	0.0563 mL	0.2814 mL	0.5628 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.

Reference

Kulkarni OP, et al. Am J Pathol. 2010, 176(6), 2840-2847.
Zhu Y, Xu S, Lu Y, et al. Repositioning an Immunomodulatory Drug Vidofludimus as a Farnesoid X Receptor Modulator With Therapeutic Effects on NAFLD. Frontiers in Pharmacology. 2020, 11
Qiu X, Jiang S, Xiao Y, et al. SOX2-dependent expression of dihydroorotate dehydrogenase regulates oral squamous cell carcinoma cell proliferation. International Journal of Oral Science. 2021, 13(1): 1-9.
Fitzpatrick LR, et al. J Pharmacol Exp Ther. 2012, 342(3), 850-860.
Rusai K, et al. Transplantation. 2012, 93(11), 1101-1107.
Qiu X, Jiang S, Xiao Y, et al. SOX2-dependent expression of dihydroorotate dehydrogenase regulates oral squamous cell carcinoma cell proliferation[J]. International Journal of Oral Science. 2021, 13(1): 1-9.
Zhu Y, Xu S, Lu Y, et al. Repositioning an Immunomodulatory Drug Vidofludimus as a Farnesoid X Receptor Modulator With Therapeutic Effects on NAFLD[J]. Frontiers in Pharmacology. 2020, 11.