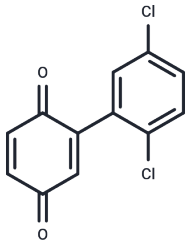
Data Sheet (Cat.No.T3962)

TPI-1

Chemical Properties



CAS No. : 79756-69-7

Formula: C12H6Cl2O2

Molecular Weight: 253.08

Appearance: no data available

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

Biological Description

Description	TPI-1 is a SHP-1 inhibitor.
Targets(IC50)	Glucocorticoid Receptor,Phosphatase
In vitro	SHP-1 has been identified as a promising target for cancer therapy. TPI-1, starting at an effective concentration of 10 ng/mL, selectively enhances the phosphorylation of SHP-1 substrates (notably pLck-pY394) in Jurkat T cells, without significantly affecting pERK1/2 or pLck-pY505 levels. Moreover, TPI-1 promotes the induction of IFNγ+ cells both in mouse spleen and human peripheral blood[1], demonstrating its potential selectivity and therapeutic efficacy in a cellular context.
In vivo	TPI-1 effectively suppresses the growth of B16 melanoma tumors in mice through a mechanism reliant on T cells when administered orally at tolerable doses, yet it demonstrates minimal impact on B16 cell proliferation in vitro. Additionally, TPI-1 enhances the levels of pLck-pY394 and IFNγ+ cells in mice, further contributing to its anti-tumor activity. Notably, TPI-1 also restricts B16 tumor expansion and extends the survival of mice bearing tumors when given as a subcutaneously tolerated agent[1].
Kinase Assay	Jump-In TI CHO-K cells stably expressing WT or mutant S1P3 are serum-starved for 4 hrs. They are then incubated at 4 °C for 30 min in the binding buffer containing 20 mM Tris-HCl (pH 7.5), 100 mM NaCl, 15 mM NaF, 0.5 mM EDTA, 1 mM Na3VO4, 0.5% fatty acid-free bovine serum albumin, and protease inhibitor mixture with 0.1 nM [33P]S1P and increasing concentrations of S1P, SPM-242, or CYM-5541. Cells are washed three times with cold binding buffer. Cell-bound radioactivity is measured by lysing the cells with 0.5% SDS followed by liquid scintillation counting. The raw data is normalized so that the level of [33P]S1P bound to each cell line (WT or mutant) in the absence of competing ligand is referenced as 100% for its own cell line[1].

Solubility Information

Solubility	DMSO: 45 mg/mL (177.81 mM),Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	3.9513 mL	19.7566 mL	39.5132 mL
5 mM	0.7903 mL	3.9513 mL	7.9026 mL
10 mM	0.3951 mL	1.9757 mL	3.9513 mL
50 mM	0.079 mL	0.3951 mL	0.7903 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

Kundu S, et al. Novel SHP-1 inhibitors tyrosine phosphatase inhibitor-1 and analogs with preclinical anti-tumor activities as tolerated oral agents. J Immunol. 2010 Jun 1;184(11):6529-36.

Wang N, Tan S, Wang M, et al.SHP-1 interacts with NFκB1 to inhibit its phosphorylation and nuclear translocation to exert its anti-bacterial function.Aquaculture.2025: 742148.