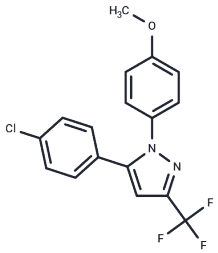
Data Sheet (Cat.No.T4101)

TargetMol

SC-560

Chemical Properties



CAS No. : 188817-13-2

Formula: C17H12ClF3N2O

Molecular Weight: 352.74

Storage: 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	SC-560 is a member of the diaryl heterocycle class of cyclooxygenase (COX) inhibitors.
Targets(IC50)	COX
In vitro	Preincubation of cyclooxygenase-1 (COX-1) with SC-560 selectively inhibits the conversion of arachidonic acid to prostaglandin E2 (PGE2) in a concentration-dependent manner, demonstrating higher specificity for COX-1 over COX-2, as indicated by SC-560's inhibitory concentration 50 (IC50) for COX-2 being 6.3 μM, nearly 1,000-fold greater than for COX-1. Furthermore, SC-560 has been shown to suppress hepatocellular carcinoma (HCC) cell growth, colony formation in soft agar, and induce apoptosis in a dose- and time-dependent manner. Additionally, it downregulates anti-apoptotic proteins, including survivin and X-linked inhibitor of apoptosis protein (XIAP), while simultaneously activating caspases 3 and 7, illustrating its therapeutic potential in HCC treatment through multifaceted mechanisms of action.
In vivo	Oral dosing with either 10 or 30 mg/kg SC-560 1 hour before assay completely inhibits ionophore-stimulated TxB2 production, indicating that SC-560 is orally bioavailable and inhibits COX-1 in vivo. SC-560 extensively distributes into rat tissues, with a CL approaching hepatic plasma flow. However, after oral administration, it exhibits low (<15%), formulation-dependent bioavailability and demonstrates kidney toxicity.
Kinase Assay	Test compound is incubated with human whole blood stimulated with bacterial LPS for 4 h, followed by capture of MPO on immobilized anti-MPO antibody coated plates. The captured MPO is washed and residual MPO activity is determined using Amplex Red and H2O2.
Cell Research	SC-560 is dissolved in DMSO[2].HuH-6 and HA22T/VGH cells (5000/well) are treated with various concentrations of SC-560 (5, 10, 25, 50, 100, 200 μM) and cultured for 72 h. At the end of treatment, cell viability is assessed by MTS assay.
Animal Research	Rat: The pharmacokinetics of SC-560 is studied in Sprague-Dawley rats after a single intravenous (i.v.) and oral dose (10 mg/kg) in polyethylene glycol (PEG) 600 and a single oral dose (10 mg/kg) in 1% methylcellulose (MC). Serial blood samples are collected via a catheter inserted in the right jugular vein and serum samples are analysed for SC-560 using reverse phase HPLC. After oral administration of SC-560 in PEG, urine is also collected for 24 h and analyzed for urinary sodium, chloride, and potassium as well as NAG.

Solubility Information

Solubility	DMSO: 125 mg/mL (354.37 mM),Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)
In vivo Formulation	10% DMSO+40% PEG300+5% Tween 80+45% Saline: 10 mg/mL (28.35 mM),Suspension. 10% DMSO+90% Saline: < 10 mg/mL (28.35 mM),Lower concentrations may be soluble, but exact solubility limit is unknown. *Please add the solvents sequentially, clarifying the solution as much as possible before adding the next one. Dissolve by heating and/or sonication if necessary. Working solution is recommended to be prepared and used immediately. The formulation provided above is for reference purposes only. In vivo formulations may vary and should be modified based on specific experimental conditions.*

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	2.8349 mL	14.1747 mL	28.3495 mL
5 mM	0.567 mL	2.8349 mL	5.6699 mL
10 mM	0.2835 mL	1.4175 mL	2.8349 mL
50 mM	0.0567 mL	0.2835 mL	0.567 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

Smith CJ, et al. Pharmacological analysis of cyclooxygenase-1 in inflammation. Proc Natl Acad Sci U S A. 1998 Oct 27;95(22):13313-8.

Lampiasi N, et al. The selective cyclooxygenase-1 inhibitor SC-560 suppresses cell proliferation and induces apoptosis in human hepatocellular carcinoma cells. Int J Mol Med. 2006 Feb;17(2):245-52

Teng XW, et al. Formulation dependent pharmacokinetics, bioavailability and renal toxicity of a selective cyclooxygenase-1 inhibitor SC-560 in the rat. J Pharm Pharm Sci. 2003 May-Aug;6(2):205-10.

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