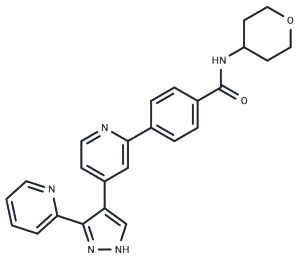
Data Sheet (Cat.No.T1800)

TargetMol

GW788388

Chemical Properties



CAS No. : 452342-67-5

Formula: C25H23N5O2

Molecular Weight: 425.48

Appearance: no data available

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

Biological Description

Description	GW788388 is a potent and selective inhibitor of ALK5, and it also inhibits TGF-(beta) type II receptor and activin type II receptor activities.
Targets(IC50)	ALK,TGF-beta/Smad
In vitro	In a model of kidney fibrosis induced by puromycin aminonucleoside, GW788388 (10 mg/kg) was shown to induce the expression of collagen A1 mRNA. In rodents with advanced diabetic nephropathy, GW788388 reduced fibrotic responses by diminishing TGF-β signaling. Furthermore, in a mouse model of myocardial infarction, treatment with GW788388 significantly inhibited contractile function, reduced cardiac hypertrophy, and decreased levels of activated Smad2 and α-SMA.
In vivo	GW788388 effectively inhibits ALK5, ALK4, ALK7, and TGF-β-regulated growth. In cellular assays (IC50=93 nM), it demonstrates an inhibition of TGF-β-induced Smad activation and suppresses the expression of target genes.
Kinase Assay	ALK5 Fluorescence Polarization Binding Assay: GW788388 binding to ALK5 is tested on purified recombinant GST?ALK5 (residues 198-503). Displacement of rhodamine green fluorescently labeled ATP competitive inhibitor by different concentrations of GW788388 is used to calculate a binding pIC50. GST?ALK5 is added to a buffer containing 62.5 mM N-(2-hydroxyethyl)piperazine-N'-2-ethanesulfonic acid (Hepes), pH 7.5, 1 mM dithiothreitol (DTT), 12.5 mM MgCl2, 1.25 mM 3-[(3-cholamidopropyl)dimethylammonio] -1-propanesulfonic acid (CHAPS), and 1 nM rhodamine green-labeled ligand so that the final ALK5 concentration is 10 nM based on active-site titration of the enzyme. The enzyme/ligand reagent (40 µL) is added to 384-well assay plates containing 1 µL of different concentrations of GW788388. The plates are read immediately on a LJL Acquest fluorescence reader with excitation, emission, and dichroic filters of 485, 530, and 505 nm, respectively. The fluorescence polarization for each well is calculated by the Acquest and is then imported into curve-fitting software for construction of concentration?response curves.
Cell Research	Cell viability/proliferation assays are done according to the manufactures instructions (CellTiter 96 Aqueous One Solution Cell Proliferation Assay). Viability and proliferation are measured after 72 hours GW788388 treatment in the presence or absence of TGF-β. (Only for Reference)

Solubility Information

Solubility	DMSO: 10 mg/mL (23.5 mM),Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	2.3503 mL	11.7514 mL	23.5029 mL
5 mM	0.4701 mL	2.3503 mL	4.7006 mL
10 mM	0.235 mL	1.1751 mL	2.3503 mL
50 mM	0.047 mL	0.235 mL	0.4701 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

Gellibert F, et al. J Med Chem. 2006, 49(7), 2210-2221.
Petersen M, et al. Kidney Int, 2008, 73(6), 705-715.
Tan SM, et al. Am J Physiol Heart Circ Physiol, 2010, 298(5), H1415-1425.
Lagares D, et al. Arthritis Rheum, 2010, 62(3), 878-889.