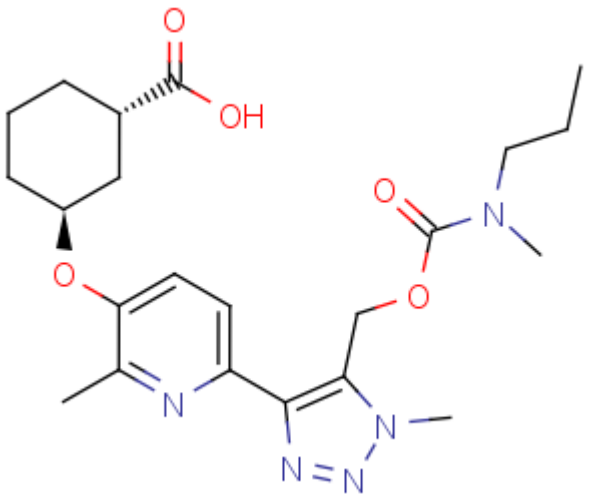
Name: BMS-986278 Cat#: EX-A5516

Chemical Structure:



Chemical Name	(1S,3S)-3-((2-methyl-6-(1-methyl-5-(((methyl(propyl)carbamoyl)oxy)methyl)-1H-1,2,3-triazol-4-yl)pyridin-3-yl)oxy)cyclohexane-1-carboxylic acid

Molecular Weight	445.512	Storage	3 years -20°C powder 6 months -80°C in solvent Away from light
Formula	C22H31N5O5		
CAS No.	2170126-74-4	Synonyms	BMS986278; BMS 986278

Solubility (25°C) *	In vitro	DMSO	DMSO : >50 mg/mL
		Ethanol	N/A
		Water	N/A
	In vivo （should be freshly prepared each time）	1. Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >>45% saline Solubility: ≥ 2.5 mg/mL (5.61 mM); Clear solution 2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline) Solubility: ≥ 2.5 mg/mL (5.61 mM); Clear solution	

		3. Add each solvent one by one: 10% DMSO >> 90% corn oil Solubility: ≥ 2.5 mg/mL (5.61 mM); Clear solution.

* <1 mg/ml means slightly soluble or insoluble.
* Please note that Selleck tests the solubility of all compounds in-house, and the actual solubility may differ slightly from published values. This is normal and is due to slight batch-to-batch variations.

Preparing Stock Solutions:

Mass / Volume / Concentration	1 mg	5 mg	10 mg
1 mM	2.2446 mL	11.2231 mL	22.4462 mL
5 mM	0.4489 mL	2.2446 mL	4.4892 mL
10 mM	0.2245 mL	1.1223 mL	2.2446 mL

DMSO :

*The above data is based on the product molecular weight 445.51.

Biological Activities:

Description	BMS-986278 is a potent and orally active lysophosphatidic acid receptor 1 (LPA1) antagonist, with Kbs of 6.9 nM and 4.0 nM for human and mouse LPA1, respectively. BMS-986278 can be used for the research of pulmonary fibrotic diseases[1].
IC_{50} & Target	Kb: 6.9 nM (human LPA1), 4.0 nM (mouse LPA1)[1]
In Vitro	BMS-986278 is a high-affinity LPA1 antagonist, with Kbs of 6.9 nM and 4.0 nM for human and mouse LPA1 in CHO cells overexpressing LPA1[1]. BMS-986278 antagonizes Lysophosphatidic acid (LPA)-stimulated calcium flux in normal human lung fibroblasts, with a Kb of 5.8 nM [1].
In Vivo	BMS-986278 (0.1-10 mg/kg; a single p.o.) completely inhibits LPA-stimulated systemic histamine release in a concentration-dependent manner in CD1 mice[1]. BMS-986278 (3-30 mg/kg; p.o. twice daily for 14 d) decreases Bleomycin-induced collagen deposition/lung fibrosis in rats[1]. Pharmacokinetics of BMS-986278 in preclinical species[1]

	plasma clearance ((mL/min)/kg)	Vss (L/kg)	oral bioavailability (%)	T1/2 (h)	plasma protein binding (% free)
mouse	37	5.5	70	2.5	31.4
rat	15	3.5	100	4.5	12.6
monkey	2.0	1.6	79	11	0.8

Animal Model:	Male Sprague-Dawley rats (10 weeks) were administered Bleomycin[1]
Dosage:	3, 10, and 30 mg/kg
Administration:	P.o. twice daily for 14 days
Result:	Resulted in significant decreases in the lung section percent fibrotic area for the 3 mg/kg (48%) and 10 mg/kg (56%) dose groups.

References

[1]. Cheng PTW, et, al. Discovery of an Oxycyclohexyl Acid Lysophosphatidic Acid Receptor 1 (LPA1) Antagonist BMS-986278 for the Treatment of Pulmonary Fibrotic Diseases. J Med Chem. 2021 Nov 11;64(21):15549-15581.