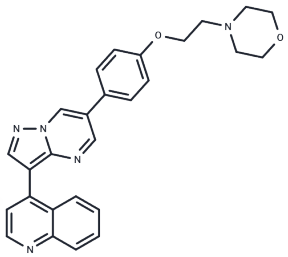
Data Sheet (Cat.No.T25346)

TargetMol

DMH2

Chemical Properties



CAS No. : 1206711-14-9

Formula: C27H25N5O2

Molecular Weight: 451.52

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	DMH2 is a selective BMP type I receptor (ALK2/ALK3) inhibitor. DMH2 inhibits the proliferation of lung cancer cell lines and induces cell death. DMH2 can be used in research on tumors, stem cell differentiation, and bone formation.
Targets(IC50)	Apoptosis,Others,TGF-beta/Smad
In vitro	Methods: Human hepatocellular carcinoma cells (Huh7) were treated with 10 μM DMH2. After a 1-hour preincubation, 20 mM APAP was added, and the cells were treated with APAP for 16 hours. Cell viability was assessed by crystal violet staining and qPCR. Results: DMH2 pretreatment increased cell viability and reduced the APAP-induced upregulation of HMOX1, GSTM3, and SOD2 expression. [1] Methods: Oct4/GFP$^+$ and Nestin cells sorted from cell lines such as H1299 and A549 were treated with DMH2 (1 μM) for 48 hours, stained with ethidium bromide, and the percentage of dead cells was counted. Results: DMH2 significantly induced apoptosis, and the cell death induced by DMH2 in Nestin/GFP$^+$ cells was significantly higher than in Oct4/GFP$^+$ cells. [2]
In vivo	Methods: To verify the protective effect of DMH2 against APAP-induced liver injury, male C57BL/6J mice were administered APAP (500 mg/kg) intraperitoneally. One hour later, they received an intraperitoneal injection of DMH2 (3 mg/kg) and were sacrificed 2 hours after the APAP injection. Results: Post-treatment with DMH2 significantly reduced the area of APAP-induced hepatic necrosis and the number of apoptotic cells, and lowered serum ALT levels. DMH2 treatment effectively protected against APAP-induced liver injury. [1]

Solubility Information

Solubility	DMSO: 40 mg/mL (88.59 mM),Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	2.2147 mL	11.0737 mL	22.1474 mL
5 mM	0.4429 mL	2.2147 mL	4.4295 mL
10 mM	0.2215 mL	1.1074 mL	2.2147 mL
50 mM	0.0443 mL	0.2215 mL	0.4429 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

Marañón P, Rey E, Isaza SC, et al. Inhibition of ALK3-mediated signalling pathway protects against acetaminophen-induced liver injury. Redox Biol. 2024;71:103088.

Langenfeld E, Deen M, Zachariah E, Langenfeld J. Small molecule antagonist of the bone morphogenetic protein type I receptors suppresses growth and expression of Id1 and Id3 in lung cancer cells expressing Oct4 or nestin. Mol Cancer. 2013;12(1):129. Published 2013 Oct 26.

Langenfeld E, Deen M, Zachariah E, Langenfeld J. Small molecule antagonist of the bone morphogenetic protein type I receptors suppresses growth and expression of Id1 and Id3 in lung cancer cells expressing Oct4 or nestin. Mol Cancer. 2013 Oct 26;12(1):129. doi: 10.1186/1476-4598-12-129. PubMed PMID: 24160469; PubMed Central PMCID: PMC4176118.

Langenfeld E, Hong CC, Lanke G, Langenfeld J. Bone morphogenetic protein type I receptor antagonists decrease growth and induce cell death of lung cancer cell lines. PLoS One. 2013 Apr 12;8(4):e61256. doi: 10.1371/journal.pone.0061256. Print 2013. PubMed PMID: 23593444; PubMed Central PMCID: PMC3625205.