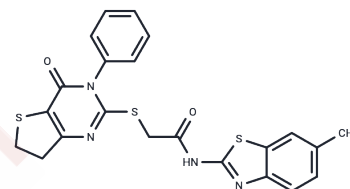


IWP-2

Chemical Properties

CAS No. : 686770-61-6
 Formula: C₂₂H₁₈N₄O₂S₃
 Molecular Weight: 466.6
 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	IWP-2 is a Wnt pathway inhibitor (IC ₅₀ =27 nM) and an ATP-competitive CK1δ inhibitor (IC ₅₀ =40 nM for M82FCK1δ). IWP-2 inhibits self-renewal of embryonic stem cells and has been used in stem cell and organoid research.
Targets(IC ₅₀)	Casein Kinase, Porcupine, Wnt/beta-catenin
In vitro	<p>METHODS: Human gastric cancer cells MKN28 were treated with IWP-2 (5-50 μM) for 1-5 days, and cell proliferation was detected by CellTiter Assay.</p> <p>RESULTS: After four days of treatment in MKN28 cell line, 10-50 μM IWP-2 significantly inhibited the proliferation of MKN28 cells. [1]</p> <p>METHODS: L-Wnt3A cells were treated with IWP-2 (5 μM) for 24 h, and the expression levels of target proteins were detected by Western Blot.</p> <p>RESULTS: IWP-2 blocked all detected Wnt-dependent biochemical changes, phosphorylation of Lrp6 receptor and Dvl2, and accumulation of β-catenin. [2]</p>
In vivo	<p>METHODS: To study the effects on hair loss, C57/BL6 mice were treated with AA antioxidant (100 mg/mL, topically applied to the skin), PBMT, and IWP-2 (20 mg/kg, i.v., every two days).</p> <p>RESULTS: PBMT promoted hair regrowth after resting shaving stimulation. Importantly, the use of AA and IWP-2 eliminated the differences in HF growth rates induced by PBMT in vivo. [3]</p>
Cell Research	IWP-2 is prepared in DMSO and stored, and then diluted with appropriate medium before use[2]. The human RCC cell lines 786O and Caki-2 (5×10 ³) are seeded into 96-well plates. Cell viability is estimated by MST assay after Caki-2 cells are incubated with increasing concentrations of LEF together with 20 μM IWP-2 for 48 h. After treatment, 10 μL MTS is added into each well for 2 h incubation. The absorbance is measured using a model ELX800 Micro Plate Reader at 490 nm. For colony formation assay, Caki-2 cells are trypsinized to single cell suspensions and seeded into fresh 6-well plates at 1000 cells/well. Then cells are incubated with LEF at depicted concentrations for 7 days. Colonies are fixed with absolute methanol for 15 min and then stained with 0.1% crystal violet for 20 min. After washing with PBS three times, the colonies with a diameter over 2 mm are visualized by a digital camera[2].

Solubility Information

A DRUG SCREENING EXPERT

Solubility	DMSO: 1 mg/mL (2.14 mM),Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)
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Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	2.1432 mL	10.7158 mL	21.4316 mL
5 mM	0.4286 mL	2.1432 mL	4.2863 mL
10 mM	0.2143 mL	1.0716 mL	2.1432 mL
50 mM	0.0429 mL	0.2143 mL	0.4286 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

Mo ML, et al. Inhibition of the Wnt palmitoyltransferase porcupine suppresses cell growth and downregulates the Wnt/ β -catenin pathway in gastric cancer. *Oncol Lett.* 2013 May;5(5):1719-1723.

Chen B, et al. Small molecule-mediated disruption of Wnt-dependent signaling in tissue regeneration and cancer. *Nat Chem Biol.* 2009 Feb;5(2):100-7.

Jin H, et al. Photobiomodulation therapy for hair regeneration: A synergetic activation of β -CATENIN in hair follicle stem cells by ROS and paracrine WNTs. *Stem Cell Reports.* 2021 Jun 8;16(6):1568-1583.

Inhibitor · Natural Compounds · Compound Libraries · Recombinant Proteins

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