IWR-1

Cat. No.: HY-12238

CAS No.: 1127442-82-3

Molecular Formula: $C_{25}H_{19}N_3O_3$

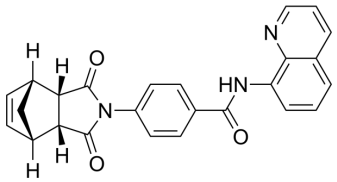
Molecular Weight: 409.44

Target: Wnt; Organoid

Pathway: Stem Cell/Wnt

Storage:

Powder	-20°C	3 years
	4°C	2 years
In solvent	-80°C	2 years
	-20°C	1 year



SOLVENT & SOLUBILITY

In Vitro

DMSO : 50 mg/mL (122.12 mM; Need ultrasonic)

Preparing Stock Solutions

Solvent / Mass / Concentration	1 mg	5 mg	10 mg
1 mM	2.4424 mL	12.2118 mL	24.4236 mL
5 mM	0.4885 mL	2.4424 mL	4.8847 mL
10 mM	0.2442 mL	1.2212 mL	2.4424 mL

Please refer to the solubility information to select the appropriate solvent.

In Vivo

1. Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline
   Solubility: ≥ 2.5 mg/mL (6.11 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 2.5 mg/mL (6.11 mM); Clear solution
3. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.5 mg/mL (6.11 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

IWR-1 is a tankyrase inhibitor which inhibits Wnt/β-catenin signaling pathway.

IC_{50} & Target

IC50: 180 nM (Wnt)

In Vitro

Both IWR-1 and XAV939 act as reversible Wnt pathway inhibitors and exhibit similar pharmacological effects in vitro. IWR-1 exerts its effect via interaction with Axin, while XAV939 binds TNKS directly[1]. IWR-1 (10 μM) induces stabilization of β-catenin disruption complex. IWR-1 (10 μM) is added to the medium together with MIF, the size of cell colonies is extremely

decreased, and that indicates the promoting effect of MIF on NSPC proliferation is inhibited by IWR-1 in any MIF concentration group. 2, 5 and 10 μM of IWR-1 significantly inhibits the proliferation of NSPC dose-dependently. IWR-1 inhibites the promoting effect of MIF on NSPC differentiation to neuron lineage[2]. IWR-1 treatment in the presence of maximal stimulatory dose of FSH (0.5 ng/mL) results in a dose dependent inhibition of the stimulatory effect of FSH with > 75% inhibition observed at the maximal inhibitory dose of IWR-1 (1 μM). IWR-1 treatment partially reverses the FSH-induced inhibition of granulosa cell CARTPT mRNA expression[3].

MCE has not independently confirmed the accuracy of these methods. They are for reference only.

CUSTOMER VALIDATION

- Adv Funct Mater. 2023 Dec 22.
- Nano Today. 21 September 2022.
- Sci Total Environ. 2022 Feb 25;809:152102.
- Chemosphere. 2023 Sep 27:140283.
- Aging Cell. 2023 Dec 21:e14072.

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REFERENCES

[1]. Lu J, et al. Structure-activity relationship studies of small-molecule inhibitors of Wnt response. Bioorg Med Chem Lett. 2009 Jul 15;19(14):3825-7.

[2]. Zhang X, et al. Macrophage migration inhibitory factor promotes proliferation and neuronal differentiation of neural stem/precursor cells through Wnt/β-catenin signal pathway. Int J Biol Sci. 2013 Nov 28;9(10):1108-20.

[3]. Gupta PS, et al. Regulation and Regulatory Role of WNT Signaling in Potentiating FSH Action during Bovine Dominant Follicle Selection. PLoS One. 2014 Jun 17;9(6):e100201.

Caution: Product has not been fully validated for medical applications. For research use only.

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