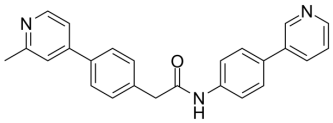
Wnt-C59

Cat. No.:	HY-15659
CAS No.:	1243243-89-1
Molecular Formula:	$C_{25}H_{21}N_3O$
Molecular Weight:	379.45
Target:	Porcupine; Wnt
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 (131.77 mM; Need ultrasonic)

Preparing Stock Solutions	Mass / Solvent / Concentration	1 mg	5 mg	10 mg
	1 mM	2.6354 mL	13.1770 mL	26.3539 mL
	5 mM	0.5271 mL	2.6354 mL	5.2708 mL
	10 mM	0.2635 mL	1.3177 mL	2.6354 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 (6.59 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 2.5 mg/mL (6.59 mM); Clear solution
3. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.5 mg/mL (6.59 mM); Clear solution

BIOLOGICAL ACTIVITY

Description	Wnt-C59 (C59) is a highly potent and oral porcupine (PORCN) inhibitor with an IC_{50} of 74 pM.
IC_{50} & Target	IC50: 74 pM (PORCN)[1]
In Vitro	Wnt-C59 (C59) inhibits PORCN activity in vitro at nanomolar concentrations, as assessed by inhibition of Wnt palmitoylation, Wnt interaction with the carrier protein Wntless/WLS, Wnt secretion, and Wnt activation of β-catenin reporter activity. Wnt-C59 inhibits WNT3A-mediated activation of a multimerized TCF-binding site driving luciferase with an IC_{50} of 74 pM[1].

	MCE has not independently confirmed the accuracy of these methods. They are for reference only.
In Vivo	Wnt-C59 displays good bioavailability in mice. Wnt-C59 blocks progression of mammary tumors in MMTV-WNT1 transgenic mice while downregulating Wnt/β-catenin target genes[1]. Wnt-C59 has the potential to eradicate cancer stem cells in human tumors. Wnt-C59 inhibits stemness properties of NPC cells in a dosage-dependent manner by arresting sphere formation in both HNE1 and SUNE1 cells[2]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

PROTOCOL

Cell Assay [2]	1×10^4 HK1, CNE1, HNE1 and SUNE1 cells are seeded in 24-well plates, and Wnt-C59 (5 μM, 10 μM, and 20 μM) is added the next day. Cell confluence is determined by microscopy at 24, 48, 72, and 96 hours after seeding of cells. The IC_{50} is determined by MTT assay[2]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.
Animal Administration [1]	Mice[1] Female nude mice orthotopically transplanted with independent MMTV-WNT1 tumors are treated with vehicle or Wnt-C59 10 mg/kg once daily for 17 days. Tumor volumes are measured on alternate days[1]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

CUSTOMER VALIDATION

- Gut Microbes. 2023 Jan-Dec;15(1):2233149.
- J Exp Clin Cancer Res. 2020 Jan 28;39(1):22.
- J Exp Clin Cancer Res. 2020 Jan 28;39(1):22.
- Cell Rep. 2023 Oct 30;42(11):113340.
- EMBO Rep. 2023 Jan 27;e54895.

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REFERENCES

[1]. Proffitt KD, et al. Pharmacological inhibition of the Wnt acyltransferase PORCN prevents growth of WNT-driven mammary cancer. Cancer Res. 2013 Jan 15;73(2):502-7.

[2]. Cheng Y, et al. Wnt-C59 arrests stemness and suppresses growth of nasopharyngeal carcinoma in mice by inhibiting the Wnt pathway in the tumor microenvironment. Oncotarget. 2015 Jun 10;6(16):14428-39.

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

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