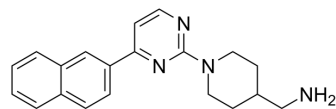


WAY-262611

Cat. No.:	HY-11035		
CAS No.:	1123231-07-1		
Molecular Formula:	C ₂₀ H ₂₂ N ₄		
Molecular Weight:	318.42		
Target:	β-catenin		
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 : ≥ 42 mg/mL (131.90 mM)
 * "≥" means soluble, but saturation unknown.

Preparing Stock Solutions	Solvent Concentration	Mass		
		1 mg	5 mg	10 mg
	1 mM	3.1405 mL	15.7025 mL	31.4051 mL
	5 mM	0.6281 mL	3.1405 mL	6.2810 mL
	10 mM	0.3141 mL	1.5703 mL	3.1405 mL

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

In Vivo

- Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline
 Solubility: ≥ 1.67 mg/mL (5.24 mM); Clear solution
- Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
 Solubility: ≥ 1.67 mg/mL (5.24 mM); Clear solution
- Add each solvent one by one: 10% DMSO >> 90% corn oil
 Solubility: ≥ 1.67 mg/mL (5.24 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

WAY-262611 is a wingless β-Catenin agonist that increases bone formation rate with an EC₅₀ of 0.63 μM in TCF-Luciferase assay. WAY-262611 is also a Dkk1 inhibitor.

IC₅₀ & Target

EC₅₀: 0.63 μM (β-Catenin)^[1]

In Vitro

WAY-262611 has the most potent activity in the primary assay, low kinase inhibition potential, and high solubility^[1].

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

In Vivo

WAY-262611 has excellent pharmacokinetic properties and shows a dose dependent increase in the trabecular bone formation rate in ovariectomized rats following oral administration. Calvariae from wt mice treated with WAY-262611 shows statistically increased BFR, while similarly treated KO animals are no different from control. This indicates that WAY-262611 is acting via the Wnt β -catenin pathway and most likely through inhibition of Dkk-1^[1].

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

PROTOCOL

Animal Administration ^[1]

Rats: WAY-262611 is dissolved in DMSO and diluted with saline for iv (Rats). WAY-262611 is prepared in 0.5% methylcellulose/2% Tween-80 for po OVX rats 14 are treated orally with 5 (po, vehicle=0.5% methylcellulose/2% Tween-80, qd, 28 days) at four doses. Trabecular bone formation rate (BFR) in the tibia is established in all dose groups at the end of the in-life portion of the study. A clear dose response and activity as low as 0.3 mg/kg/day are observed^[1].

Mice: To confirm activity via the Wnt pathway, the calvariae of wild type (wt) and Dkk-1 knockout (KO) mice are treated with 5 once a day for 7 days (DMSO solution, sc injection). The KO animals are not expected to respond because of the inherent inability to inhibit a missing target protein, while wild type animals with fully expressed Dkk-1 are expected to show a pharmacological response ^[1].

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

CUSTOMER VALIDATION

- Nat Biotechnol. 2020 Sep;38(9):1087-1096.
- Glia. 2023 Jan 8.
- Bone. 2022 Jun 7;116456.
- Int J Biochem Cell Biol. 2020 Apr;121:105703.
- J Cell Sci. 2019 May 16;132(10):jcs228478.

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REFERENCES

[1]. Pelletier JC, et al. (1-(4-(Naphthalen-2-yl)pyrimidin-2-yl)piperidin-4-yl)methanamine: a wingless beta-catenin agonist that increases bone formation rate. J Med Chem. 2009 Nov 26;52(22):6962-5.

[2]. L Enochson, et al. GDF5 reduces MMP13 expression in human chondrocytes via DKK1 mediated canonical Wnt signaling inhibition. Osteoarthritis Cartilage. 2014 Apr;22(4):566-77.

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

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