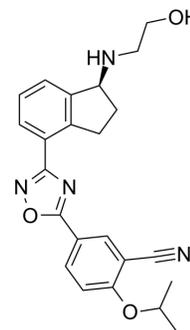


Ozanimod

Cat. No.:	HY-12288		
CAS No.:	1306760-87-1		
Molecular Formula:	C ₂₃ H ₂₄ N ₄ O ₃		
Molecular Weight:	404.46		
Target:	LPL Receptor		
Pathway:	GPCR/G Protein		
Storage:	Powder	-20°C	3 years
		4°C	2 years
	In solvent	-80°C	1 year
		-20°C	6 months



SOLVENT & SOLUBILITY

In Vitro

DMSO : ≥ 29 mg/mL (71.70 mM)
 * "≥" means soluble, but saturation unknown.

Preparing Stock Solutions	Solvent		Mass		
	Concentration		1 mg	5 mg	10 mg
	1 mM		2.4724 mL	12.3622 mL	24.7243 mL
	5 mM		0.4945 mL	2.4724 mL	4.9449 mL
	10 mM		0.2472 mL	1.2362 mL	2.4724 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: ≥ 2.5 mg/mL (6.18 mM); Clear solution
- Add each solvent one by one: 10% DMSO >> 90% corn oil
 Solubility: ≥ 2.5 mg/mL (6.18 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

Ozanimod (RPC-1063), a sphingosine 1-phosphate (S1P) receptor modulator that binds with high affinity selectively to S1P receptor subtypes 1 (S1P₁) and 5 (S1P₅). Ozanimod has modulate effect for hS1P₁ and hS1P₅ receptor with EC₅₀s of 1.03 nM and 8.6 nM, respectively. Ozanimod can be used for the research of relapsing multiple sclerosis (MS)^[1].

IC₅₀ & Target

S1PR1 1.03 nM (EC50)	S1PR5 8.6 nM (EC50)
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In Vitro

Ozanimod (RPC-1063) has potency and intrinsic activity of S1P receptor modulators for S1P₅ across species with [³⁵S]-GTPγS binding, and the EC₅₀ values of 1.03 nM, 1.29 nM, 0.90 nM, 1.02 nM and 0.61 nM for Human S1P₁, Cynomolgus monkey S1P₁,

Mouse S1P₁, Rat S1P₁ and Canine S1P₁, respectively; and the EC₅₀ values of 8.6 nM, 15.9 nM, 957.5 nM, 2032.7 nM and 1662.0 nM for Human S1P₅, Cynomolgus monkey S1P₅, Mouse S1P₅, Rat S1P₅ and Canine S1P₅, respectively^[1].
 Ozanimod restores the potency with EC₅₀ from 958 nM for mS1P₅ to 6.7 nM for mS1P₅_A120T to closely mirror the EC₅₀ for hS1P₅ of 8.6 nM by mutating the alanine in the mouse sequence^[1].
 Ozanimod has binding affinity with K_i values of 2.0 nM, 59.9 nM and 5.6 nM for hS1P₅, mS1P₅ and mS1P₅_A120T, respectively^[1].
 Ozanimod has saturation binding of [³H]-ozanimod to hS1P₅, and mS1P₅_A120T with K_D values of 6.56 nM, 7.35 nM, respectively and also has saturation binding for [³H]-A971432 to S1P₅D value of 8.75 nM^[1].
 MCE has not independently confirmed the accuracy of these methods. They are for reference only.

In Vivo

Ozanimod (RPC-1063) (oral gavage; 0.05, 0.2, or 1 mg/kg; once daily; for 14 consecutive days) exposures sufficient to engage S1P₁, but not S1P₅, results in reduced circulating lymphocytes, disease scores, and body weight loss; reduces inflammation, demyelination, and apoptotic cell counts in the spinal cord; and reduces circulating levels of the neuronal degeneration marker, neurofilament light^[1].
 Ozanimod (oral gavage; 5 mg/kg; once-daily) prevents axonal degradation and myelin loss during toxin challenge but does not facilitate enhanced remyelination after intoxication^[1].
 Ozanimod (oral, 1 or 5 mg/kg, for 7 days) has good pharmacokinetics in mice^[1].
 MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Animal Model:	Experimental Autoimmune Encephalomyelitis Model ^[1]
Dosage:	0.05, 0.2, or 1 mg/kg
Administration:	oral gavage; 0.05, 0.2, or 1 mg/kg; once daily; for 14 consecutive days
Result:	Attenuated body weight loss, terminal disease scores were significantly attenuated with the 0.2 and 1 mg/kg doses and ALCs were significantly reduced in all dose groups. Reduced spinal cord inflammation and demyelination, as well as attenuated the number of spinal cord apoptotic cells, and significantly reduced the levels of circulating neurofilament light at the top dose of 1 mg/kg.

Animal Model:	Cuprizone/Rapamycin Demyelination Model ^[1]
Dosage:	5 mg/kg
Administration:	oral gavage; 5 mg/kg; once-daily
Result:	Protected neuronal axons, preventing breakage and ovoid formation in the corpus callosum of CPZ/Rapa treated mice. Significantly attenuated the extent to which the corpus callosum demonstrated reduced myelin content as visualized by MRI. Did not result in enhanced myelin content.

Animal Model:	C57BL/6J mice ^[1]												
Dosage:	1 or 5 mg/kg												
Administration:	oral, 1 or 5 mg/kg, for 7 days												
Result:	<table border="1"> <thead> <tr> <th>Dose</th> <th>Terminal body weight</th> <th>Spinal cord inflammation</th> <th>Spinal cord demyelination</th> <th>Spinal cord apoptotic</th> <th>Plasma NfL pg/ml</th> </tr> </thead> <tbody> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>	Dose	Terminal body weight	Spinal cord inflammation	Spinal cord demyelination	Spinal cord apoptotic	Plasma NfL pg/ml						
Dose	Terminal body weight	Spinal cord inflammation	Spinal cord demyelination	Spinal cord apoptotic	Plasma NfL pg/ml								

	% versus day 1	Foci per 20 cells	Score 0-5	cells Count per section	
Vehicle (5% DMSO, 5%Tween 20, 90% water)	86.4 ± 3.2	8.50 ± 1.21	2.00 ± 0.15	2.25 ± 0.53	4.37 ± 0.89
Ozanimod (0.05 mg/kg)	85.8 ± 2.7	5.00 ± 1.03*	0.91 ± 0.21***	1.08 ± 0.23*	3.53 ± 0.46
Ozanimod (0.2 mg/kg)	95.7 ± 3.1*	3.54 ± 0.49***	0.73 ± 0.14 ***	0.91 ± 0.28*	2.62 ± 0.46
Ozanimod (1 mg/kg)	102.8 ± 1.8*	2.67 ± 0.56***	0.33 ± 0.14 ***	0.60 ± 0.19**	1.91 ± 0.34**

CUSTOMER VALIDATION

- Mol Neurobiol. 2022 Nov 22.
- Research Square Preprint. 2021 Aug.

See more customer validations on www.MedChemExpress.com

REFERENCES

[1]. Julie V Selkirk, et al. Deconstructing the Pharmacological Contribution of Sphingosine-1 Phosphate Receptors to Mouse Models of Multiple Sclerosis Using the Species Selectivity of Ozanimod, a Dual Modulator of Human Sphingosine 1-Phosphate Receptor Subtypes 1 and 5. J Pharmacol Exp Ther. 2021 Dec;379(3):386-399.

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

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