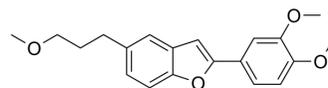


MDR-1339

Cat. No.:	HY-14503		
CAS No.:	1018946-38-7		
Molecular Formula:	C ₂₀ H ₂₂ O ₄		
Molecular Weight:	326.39		
Target:	Amyloid-β		
Pathway:	Neuronal Signaling		
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 (153.19 mM; Need ultrasonic)				
		Solvent Concentration	Mass 1 mg	5 mg	10 mg
	Preparing Stock Solutions	1 mM	3.0638 mL	15.3191 mL	30.6382 mL
		5 mM	0.6128 mL	3.0638 mL	6.1276 mL
		10 mM	0.3064 mL	1.5319 mL	3.0638 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 (7.66 mM); Suspended solution; Need ultrasonic				
	2. Add each solvent one by one: 10% DMSO >> 90% corn oil Solubility: ≥ 2.5 mg/mL (7.66 mM); Clear solution				

BIOLOGICAL ACTIVITY

Description	MDR-1339 (DWK-1339) is an orally active and blood-brain-barrier-permeable Aβ-aggregation inhibitor, used in the research of Alzheimer's disease.
IC ₅₀ & Target	Amyloid-β ^[1]
In Vitro	MDR-1339 is an Aβ-aggregation inhibitor, and shows no significant inhibition a panel of CYP isozymes, while it slightly inhibits CYP2C8 (IC ₅₀ , 31.4 μM). MDR-1339 (3.1-50 μM) dose-dependently blocks the formation of Aβ aggregates, and disaggregates Aβ fibrils. MDR-1339 (1.5-10 μM) also protects cells from this Aβ-induced toxicity ^[1] . MCE has not independently confirmed the accuracy of these methods. They are for reference only.

In Vivo	MDR-1339 (0.1-10 mg/kg, p.o.) dose-dependently restores the passive avoidance responses in mice models of Alzheimer's disease (AD), with an ED ₅₀ of 0.19 mg/kg. MDR-1339 (30 and 100 mg/kg, p.o. daily for 8 weeks) significantly improves spontaneous alternation, and reduces the A β ₁₋₄₀ and A β ₁₋₄₂ levels in APP/PS1 mice ^[1] . MCE has not independently confirmed the accuracy of these methods. They are for reference only.
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PROTOCOL

Cell Assay ^[1]	HT22 cells, a murine cell line of hippocampal origin, are grown in Dulbecco's modified Eagle's medium (DMEM) containing 10% fetal bovine serum and 5% penicillin/streptomycin. At the outset, 90% confluent cells are dissociated and plated at 5 × 10 ³ cells/well in a 96-well plate. When the cells are attached to the plate, the medium is replaced with plain DMEM. The cells are treated with MDR-1339. One hour after MDR-1339 treatment, 4 μ L of pre-diluted 25 μ M A β ₄₂ is added to the media, and the cells are further incubated for 18 h. For the determination of cell viability, 15 μ L of 5 mg/mL MTT is added to each well and incubated for 3 h. The formazan that formed is dissolved in DMSO, and the absorbance is measured at 570-630 nm using a plate reader ^[1] . MCE has not independently confirmed the accuracy of these methods. They are for reference only.
Animal Administration ^[1]	For this study, a total of 24 (n = 8 for each group) APP/PS1 [B6C3-Tg (APP ^{swe} , PSEN1 ^{dE9}) 85Dbo/J] Tg mice are utilized. The mice are housed in a controlled environment under standard room temperature, relative humidity and a 12 h light/dark cycle with free access to food and water. APP/PS1 treated groups are orally administered with MDR-1339 at a dose of 30 or 100 mg/kg body weight once daily. MDR-1339 treatment is at the age of 29 weeks, and the treatment is conducted for 8 weeks ^[1] . MCE has not independently confirmed the accuracy of these methods. They are for reference only.

REFERENCES

[1]. Ha HJ, et al. Discovery of an Orally Bioavailable Benzofuran Analogue That Serves as a β -Amyloid Aggregation Inhibitor for the Potential Treatment of Alzheimer's Disease. *J Med Chem.* 2018 Jan 11;61(1):396-402.

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

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