

MDL 105519

Chemical Properties

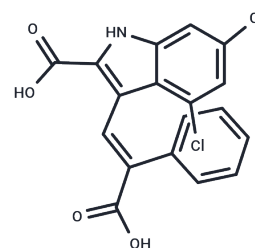
CAS No. : 161230-88-2

Formula: C₁₈H₁₁Cl₂NO₄

Molecular Weight: 376.19

Storage: Keep away from moisture, Store at low temperature
Powder: -20°C for 3 years | In solvent: -80°C for 1 year

Actual storage temperature shall be subject to the COA.



Biological Description

Description	MDL 105519 is a selective, non-competitive antagonist at the glycine site of NMDA receptors. It inhibits cyclic GMP accumulation in brain slices, modulates Ca ²⁺ and Na ⁺ -Ca ²⁺ currents, and exhibits anxiolytic activity in rat models.
Targets(IC50)	NMDAR, iGluR
In vitro	MDL 105519 is a potent and highly selective ligand for the glycine recognition site, completely blocking the binding of [³ H]glycine to rat brain membranes with a K _i of 10.9 nM. Compared to other receptor types studied, MDL 105519 exhibits approximately 10,000-fold selectivity for the glycine recognition site. MDL 105519 inhibits various NMDA-dependent responses, including: increased [³ H]TCP binding in brain membranes, accumulation of cyclic guanosine monophosphate (cGMP) in brain slices, and alterations in cytoplasmic Ca ²⁺ and Na ⁺ -Ca ²⁺ currents in cultured neurons. The inhibition of NMDA by MDL 105519 is non-competitive and can be antagonized by D-serine [1].
In vivo	MDL 105519 exhibits NMDA receptor antagonist properties in vivo. Following intravenous administration, MDL 105519 inhibits the harmaline-stimulated increase in cerebellar cyclic GMP levels, providing direct biochemical evidence for its NMDA receptor antagonistic effects in vivo. This antagonistic activity correlates with anticonvulsant efficacy across multiple seizure models, including genetic, chemically induced, and electrically evoked convulsion paradigms. Anxiolytic activity was observed in the isolation-induced vocalization model in rats, though muscle relaxant effects emerged at lower doses. Higher doses impaired motor coordination in the rotarod test but showed no influence on mesolimbic dopamine turnover or prepulse inhibition of the startle reflex [1].

Solubility Information

Solubility	DMSO: 13 mg/mL (34.56 mM), Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)
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Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	2.6582 mL	13.2912 mL	26.5823 mL
5 mM	0.5316 mL	2.6582 mL	5.3165 mL
10 mM	0.2658 mL	1.3291 mL	2.6582 mL
50 mM	0.0532 mL	0.2658 mL	0.5316 mL

Please select the appropriate solvent to prepare the stock solution, according to the solubility of the product in different solvents. Please use it as soon as possible.

Note: The dilution table applies only to solid products. For liquid products, please calculate the stock solution based on the stated concentration and/or density.

Reference

Baron BM, et al. Pharmacological characterization of MDL 105,519, an NMDA receptor glycine site antagonist. Eur J Pharmacol. 1997 Apr 4;323(2-3):181-92.

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