DMCM hydrochloride

Cat. No.: HY-100369A

CAS No.: 1215833-62-7

Molecular Formula: $C_{17}H_{19}ClN_2O_4$

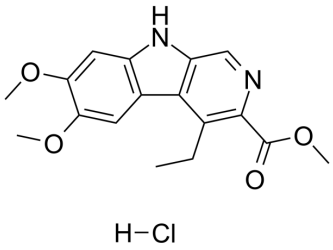
Molecular Weight: 350.8

Target: GABA Receptor

Pathway: Membrane Transporter/Ion Channel; Neuronal Signaling

Storage: 4°C, sealed storage, away from moisture

* In solvent : -80°C, 6 months; -20°C, 1 month (sealed storage, away from moisture)



SOLVENT & SOLUBILITY

In Vitro

H_2O : 25 mg/mL (71.27 mM; Need ultrasonic)

DMSO : 10 mg/mL (28.51 mM; Need ultrasonic)

Preparing Stock Solutions

Solvent / Mass / Concentration	1 mg	5 mg	10 mg
1 mM	2.8506 mL	14.2531 mL	28.5063 mL
5 mM	0.5701 mL	2.8506 mL	5.7013 mL
10 mM	0.2851 mL	1.4253 mL	2.8506 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: ≥ 1 mg/mL (2.85 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 1 mg/mL (2.85 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

DMCM hydrochloride is a nonselective full inverse agonist of benzodiazepine. DMCM shows bnding afinity at human recombinant GABAA αxβ3γ2 receptor subtypes with K_is of 10 nM, 13 nM, 7.5 nM, 2.2 nM for α1, α2, α3, and α5 receptors, respectively[1].

IC_{50} & Target

Ki: 10 nM (GABAA α1 receptor), 13 nM (GABAA α2 receptor), 7.5 nM (GABAA α3 receptor), 2.2 nM (GABAA α5 receptor)[1]

In Vivo

DMCM has potent convulsant, proconvulsant and anxiogenic properties in vivo. DMCM (20-60 mg/kg; i.p.) produces modest anxiolytic-like effects in γ2I77 mice[2].

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

Animal Model:	Male γ2I77 mice[2]
Dosage:	20 mg/kg and 60 mg/kg
Administration:	Injected i.p.
Result:	Produced modest anxiolytic-like effects.

REFERENCES

[1]. Chambers MS, et al. An orally bioavailable, functionally selective inverse agonist at the benzodiazepine site of GABAA alpha5 receptors with cognition enhancing properties. J Med Chem. 2004 Nov 18;47(24):5829-32.

[2]. Leppä E, et al. Agonistic effects of the beta-carboline DMCM revealed in GABA(A) receptor gamma 2 subunit F77I point-mutated mice. Neuropharmacology. 2005 Mar;48(4):469-78.

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