

m-Chlorophenylbiguanide hydrochloride

Chemical Properties

CAS No. :	2113-05-5
Formula:	C ₈ H ₁₁ Cl ₂ N ₅
Molecular Weight:	248.11
Storage:	Store under nitrogen Powder: -20°C for 3 years In solvent: -80°C for 1 year <small>Actual storage temperature shall be subject to the COA.</small>

Biological Description

Description	m-Chlorophenylbiguanide hydrochloride is a 5-HT ₃ receptor agonist. m-Chlorophenylbiguanide hydrochloride selectively binds 5-HT ₃ (K _i : 0.002 μM) over 5-HT _{1A} (K _i : 10 μM) and 5-HT ₂ (K _i : 10 μM) receptors but also binds to high and low affinity sites on the dopamine transporter(DAT; IC ₅₀ s: 0.4 and 34.8 μM, respectively, in rat caudate putamen synaptosomal membranes).
Targets(IC ₅₀)	5-HT Receptor
In vivo	m-Chlorophenylbiguanide hydrochloride induces depolarization of isolated rat vagus nerve and stimulates inositol phosphate formation in rat frontocingulate cortical slices (EC ₅₀ s = 0.05 and 4.2 μM, respectively).m-Chlorophenylbiguanide hydrochloride induces bradycardia, an effect that can be reversed by the 5-HT ₃ receptor antagonist ondansetron, in anaesthetized cats (ED ₅₀ = 20.3 nmol/kg)[1].

Solubility Information

Solubility	DMSO: 125 mg/mL (503.81 mM),Sonication is recommended. H ₂ O: < 20 mg/mL (80.61 mM),Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)
In vivo Formulation	10% DMSO+90% Saline: 10 mg/mL (40.3 mM),Solution. <i>Please add the solvents sequentially, clarifying the solution as much as possible before adding the next one. Dissolve by heating and/or sonication if necessary. Working solution is recommended to be prepared and used immediately. The formulation provided above is for reference purposes only. In vivo formulations may vary and should be modified based on specific experimental conditions.</i>

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	4.0305 mL	20.1524 mL	40.3047 mL
5 mM	0.8061 mL	4.0305 mL	8.0609 mL
10 mM	0.403 mL	2.0152 mL	4.0305 mL
50 mM	0.0806 mL	0.403 mL	0.8061 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

Kilpatrick GJ, et al. 1-(m-chlorophenyl)-biguanide, a potent high affinity 5-HT₃ receptor agonist. *Eur J Pharmacol.* 1990 Jun 21;182(1):193-7.

Campbell AD, Womer DE, Simon JR. The 5-HT₃ receptor agonist 1-(m-chlorophenyl)-biguanide interacts with the dopamine transporter in rat brain synaptosomes. *Eur J Pharmacol.* 1995 Jul 18;290(2):157-62.

Higgins GA, Joharchi N, Sellers EM. Behavioral effects of the 5-hydroxytryptamine₃ receptor agonists 1-phenylbiguanide and m-chlorophenylbiguanide in rats. *J Pharmacol Exp Ther.* 1993 Mar;264(3):1440-9.

Edwards E, et al. 5-HT₃-like receptors in the rat medial prefrontal cortex: further pharmacological characterization. *Brain Res.* 1996 Sep 9;733(1):21-30.

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