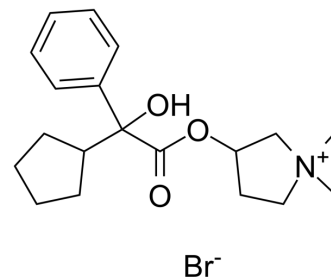


Glycopyrrolate

Cat. No.:	HY-17465
CAS No.:	596-51-0
Molecular Formula:	C ₁₉ H ₂₈ BrNO ₃
Molecular Weight:	398.33
Target:	mAChR
Pathway:	GPCR/G Protein; 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

H₂O : 100 mg/mL (251.05 mM; Need ultrasonic)
DMSO : 100 mg/mL (251.05 mM; Need ultrasonic)

Preparing Stock Solutions	Solvent Concentration	Mass		
		1 mg	5 mg	10 mg
	1 mM	2.5105 mL	12.5524 mL	25.1048 mL
	5 mM	0.5021 mL	2.5105 mL	5.0210 mL
	10 mM	0.2510 mL	1.2552 mL	2.5105 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 (6.28 mM); Clear solution
- Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
Solubility: ≥ 2.5 mg/mL (6.28 mM); Clear solution
- Add each solvent one by one: 10% DMSO >> 90% corn oil
Solubility: ≥ 2.5 mg/mL (6.28 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

Glycopyrrolate (Glycopyrronium bromide) is a muscarinic competitive antagonist used as an antispasmodic. IC₅₀ Value: Target: mAChR (Muscarinic acetylcholine receptor M1) in vitro: Glycopyrrolate showed no selectivity in its binding to the M1-M3 receptors. Kinetics studies, however, showed that glycopyrrolate dissociates slowly from HASM muscarinic receptors (60% protection against [3H]-NMS binding at 30 nM) compared to ipratropium bromide [1]. in vivo: Glycopyrrolate (1 mg) tablets were then administered, starting with one tablet daily the third week and increasing the daily dose by one tablet per week until a maximum of four tablets during week six and 4 days of week seven when the daily dose was reduced to two tablets for 3 days. glycopyrrolate can be given in controlled doses provided that an adequate medical assessment has been undertaken [2]. Glycopyrrolate has a slow and erratic absorption from the gastrointestinal system, but even low

plasma levels are associated with a distinct and long-lasting antisialogic effect [3]. Oral glycopyrrolate is emerging as a potential second-line treatment option, but experience with safety, efficacy, and dosing is especially limited in children [4]. phase III study, 52.3% of glycopyrrolate oral solution recipients (aged 3-18 years; n = 137) had an mTDS response (primary endpoint); the response rate was consistently above 50% at all 4-weekly timepoints, aside from the first assessment at week 4 (40.3%). In general, glycopyrrolate oral solution was well tolerated in clinical trials. The majority of adverse events were within expectations as characteristic anticholinergic outcomes [5]. Toxicity: Side effects include dry mouth, difficult urinating, heachaches, diarrhea and constipation. The medication also induces drowsiness or blurred vision. LD50=709 mg/kg (rat, oral).

CUSTOMER VALIDATION

- J Mol Struct. 18 June 2022, 133549.

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REFERENCES

- [1]. Haddad, E.B., et al., Pharmacological characterization of the muscarinic receptor antagonist, glycopyrrolate, in human and guinea-pig airways. Br J Pharmacol, 1999. 127(2): p. 413-20.
- [2]. Neverlien, P.O., et al., Glycopyrrolate treatment of drooling in an adult male patient with cerebral palsy. Clin Exp Pharmacol Physiol, 2000. 27(4): p. 320-2.
- [3]. Olsen, A.K. and P. Sjogren, Oral glycopyrrolate alleviates drooling in a patient with tongue cancer. J Pain Symptom Manage, 1999. 18(4): p. 300-2.
- [4]. Kumar, M.G., et al., Oral Glycopyrrolate for Refractory Pediatric and Adolescent Hyperhidrosis. Pediatr Dermatol, 2013.
- [5]. Garnock-Jones, K.P., Glycopyrrolate oral solution: for chronic, severe drooling in pediatric patients with neurologic conditions. Paediatr Drugs, 2012. 14(4): p. 263-9.

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

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