

Product Data Sheet

Product Name: Glycopyrrolate

Cat. No.: GC15029

Chemical Properties

Cas. No. 596-51-0

Chemical Name (1,1-dimethylpyrrolidin-1-ium-3-yl) 2-cyclopentyl-2-hydroxy-2-phenylacetate;bromide

SMILES C[N+](CCCC1)OC(=O)C(C2CCCC2)(C3=CC=CC=C3)O)C.[Br-]

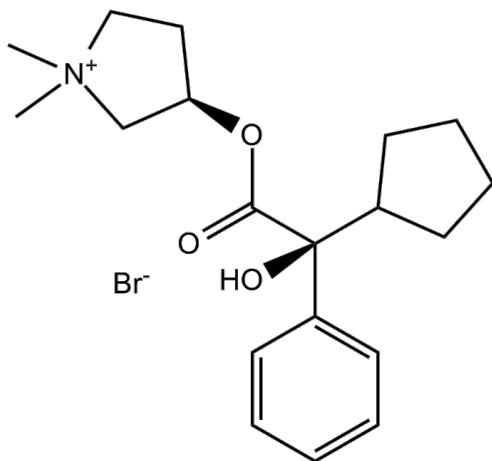
Formula $C_{19}H_{28}BrNO_3$ M.Wt 398.33

Solubility $\geq 19.9\text{mg/mL}$ in DMSO Storage Store at -20°C

General tips For obtaining a higher solubility, please warm the tube at 37°C and shake it in the ultrasonic bath for a while. Stock solution can be stored below -20°C for several months.

Shipping Condition Evaluation sample solution: ship with blue ice All other available size: ship with RT, or blue ice upon request.

Structure



Background

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

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

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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).

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.

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