

Product Data Sheet

Product Name: Hemicholinium 3

Cat. No.: GC64193

Chemical Properties

Cas. No. 312-45-8

Formula C₂₄H₃₄Br₂N₂O₄

M.Wt 574.35

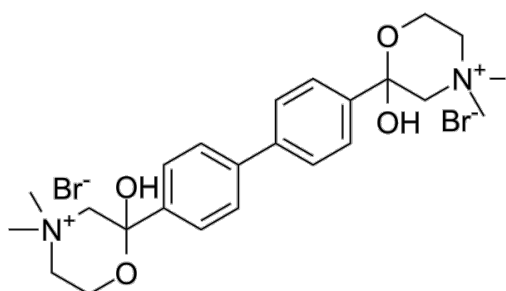
Solubility Water : 33.33 mg/mL (58.03 mM;
Need ultrasonic)

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

Hemicholinium 3 is a competitive inhibitor of the high-affinity choline transporter (HACU) with a K_i value of 25 nM. Hemicholinium 3, is a neuromuscular blocking agent which inhibits the synthesis and

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the release of acetylcholine (ACh)[1]. Hemicholinium 3 inhibits the Epibatidine-evoked contraction and [3H]acetylcholine release with IC50s of 897 nM and 693 nM, respectively[2].

Hemicholinium 3 (HC-3) inhibits the presynaptic nicotinic acetylcholine receptors of myenteric neurons. HC-3 inhibits nAChRs located on the terminal region of myenteric neurons of guinea-pig longitudinal muscle strip preparation[2]. Hemicholinium 3 (HC-3) inhibits[3H]choline uptake with the Ki value of 13.3 μ M in NCI-H69 cells[3]. HC-3 (1 mM) significantly inhibits cell viability and increases caspase-3/7 activity in NCI-H69 cells[3]. Hemicholinium 3 (Hemicholinium-3) inhibits sodium-dependent high-affinity choline uptake (IC50=18 nM)[4]. In vivo: Hemicholinium-3 impairs spatial learning. HC-3 (2.5, 5.0 μ g/rat/ICV; 1 h before training) dose-dependently impairs spatial learning[5].

References:

- [1]. PATRICE GUYENET, et al. Inhibition by Hemicholinium-3 of [14C] Acetylcholine Synthesis and [3H] Choline High-Affinity Uptake in Rat Striatal Synaptosomes. *Molecular Pharmacology* September 1973, 9 (5) 630-639.
- [2]. Péter Mandl, et al. Inhibitory effect of hemicholinium-3 on presynaptic nicotinic acetylcholine receptors located on the terminal region of myenteric motoneurons. *Neurochem Int.* 2006 Sep;49(4):327-33.
- [3]. Masato Inazu, et al. Functional expression of choline transporter-like protein 1 (CTL1) in small cell lung carcinoma cells: a target molecule for lung cancer therapy. *Pharmacol Res.* 2013 Oct;76:119-31.
- [4]. T K Chatterjee, et al. Methylpiperidine analog of hemicholinium-3: a selective, high-affinity non-competitive inhibitor of sodium-dependent choline uptake system. *Eur J Pharmacol.* 1988 May 10;149(3):241-8.
- [5]. J J Hagan, et al. Hemicholinium-3 impairs spatial learning and the deficit is reversed by cholinomimetics. *Psychopharmacology (Berl).* 1989;98(3):347-56.

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