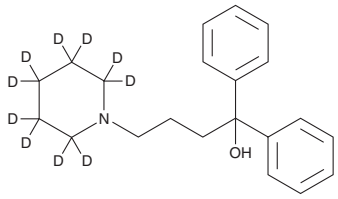
PRODUCT INFORMATION

Diphenidol-d_{10}

Item No. 33979

CAS Registry No.:	2928181-97-7
Formal Name:	α,α-diphenyl-1-piperidine-2,2,3,3,4,4,5,5,6,6-d_{10}-butanol
MF:	$C_{21}H_{17}D_{10}NO$
FW:	319.5
Chemical Purity:	≥98% (Diphenidol)
Deuterium Incorporation:	≥99% deuterated forms (d_1-d_{10}); ≤1% d_0
Supplied as:	A solid
Storage:	-20°C
Stability:	≥4 years



Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Laboratory Procedures

Diphenidol-d_{10} is intended for use as an internal standard for the quantification of diphenidol (Item No. 18674) by GC- or LC-MS. The accuracy of the sample weight in this vial is between 5% over and 2% under the amount shown on the vial. If better precision is required, the deuterated standard should be quantitated against a more precisely weighed unlabeled standard by constructing a standard curve of peak intensity ratios (deuterated *versus* unlabeled).

Diphenidol-d_{10} is supplied as a solid. A stock solution may be made by dissolving the diphenidol-d_{10} in the solvent of choice, which should be purged with an inert gas. Diphenidol-d_{10} is soluble in DMSO and methanol.

Description

Diphenidol is an antagonist of muscarinic acetylcholine receptors (mAChRs; K_is = 0.43, 2.8, 1.1, 0.91, and 1.28 µM in CHO cell membranes expressing $M_{1\text{-}5}$ receptors, respectively).[1] It also inhibits K_v channels in Neuro2A cells (IC_{50} = 28.2 µM), as well as L-type voltage-gated calcium channels in differentiated NG 108-15 cells in a concentration-dependent manner.[3] Microiontophoretic application of diphenidol inhibits rotation-induced firing of medial vestibular nucleus neurons in a cat model of vertigo.[2] Diphenidol (3.2 mg/kg, i.v.) prevents apomorphine-induced emesis in dogs.[4] Formulations containing diphenidol have been used in the treatment of vertigo and as antiemetics.

References

1. Varoli, L., Andreani, A., Burnelli, S., *et al.* Diphenidol-related diamines as novel muscarinic M_4 receptor antagonists. *Bioorg. Med. Chem. Lett.* **18(9)**, 2972-2976 (2008).
2. Kawabata, A., Sasa, M., Kishimoto, T., *et al.* Effects of anti-vertigo drugs on medial vestibular nucleus neurons activated by horizontal rotation. *Jpn. J. Pharmacol.* **55(1)**, 101-106 (1991).
3. Leung, Y.M., Wong, K.L., Cheng, K.S., *et al.* Inhibition of voltage-gated K^+ channels and Ca^{2+} channels by diphenidol. *Pharmacol. Rep.* **64(3)**, 739-744 (2012).
4. Nakayama, H., Yamakuni, H., Nakayama, A., *et al.* Diphenidol has no actual broad antiemetic activity in dogs and ferrets. *J. Pharmacol. Sci.* **96(3)**, 301-306 (2004).

CAYMAN CHEMICAL
1180 EAST ELLSWORTH RD
ANN ARBOR, MI 48108 · USA
PHONE: [800] 364-9897
[734] 971-3335
FAX: [734] 971-3640
CUSTSERV@CAYMANCHEM.COM
WWW.**CAYMANCHEM**.COM