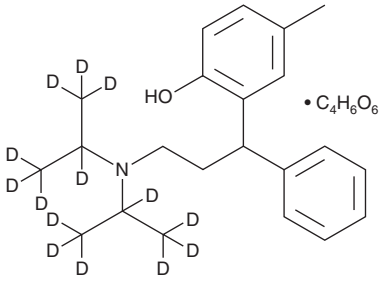
PRODUCT INFORMATION

rac-Tolterodine-d_{14} (tartrate)

Item No. 33281

Formal Name:	2-[3-[*bis*[1-(methyl-d_3)ethyl-1,2,2,2-d_4] amino]-1-phenylpropyl]-4-methyl-phenol, 2,3-dihydroxybutanedioate
Synonym:	PNU 200583E-d_{14}
MF:	$C_{22}H_{17}D_{14}NO \bullet C_4H_6O_6$
FW:	489.7
Chemical Purity:	≥98% (Tolterodine (tartrate))
Deuterium Incorporation:	≥99% deuterated forms (d_1-d_{14}); ≤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

rac-Tolterodine-d_{14} (tartrate) is intended for use as an internal standard for the quantification of tolterodine (Item No. 15027) 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).

rac-Tolterodine-d_{14} (tartrate) is supplied as a solid. A stock solution may be made by dissolving the *rac*-tolterodine-d_{14} (tartrate) in the solvent of choice, which should be purged with an inert gas. *rac*-Tolterodine-d_{14} (tartrate) is soluble in methanol and DMSO.

Description

Tolterodine is an antagonist of muscarinic acetylcholine receptors (K_is = 1.4, 2.7, 3.6, 3.1, and 2.2 nM for $M_{1\text{-}5}$ receptors, respectively).[1] It reduces intracellular calcium mobilization induced by carbachol (carbamoylcholine; Item No. 14486) in bladder smooth muscle cells and submandibular gland cells isolated from cynomolgus monkeys (K_is = 3.16 and 2 nM, respectively).[2] Tolterodine inhibits volume-induced bladder contractions and oxotremorine-induced salivation in rats (ID_{50}s = 0.025 and 0.12 mg/kg, respectively).[3] Formulations containing tolterodine have been used in the treatment of overactive bladder.

References

1. Jones, L.H., Randall, A., Napier, C., *et al*. Design and synthesis of a fluorescent muscarinic antagonist. *Bioorg. Med. Chem. Lett*. **18(2)**, 825-827 (2008).
2. Kobayashi, S., Ikeda, K., and Miyata, K. Comparison of *in vitro* selectivity profiles of solifenacin succinate (YM905) and current antimuscarinic drugs in bladder and salivary glands: A Ca^{2+} mobilization study in monkey cells. *Life Sci*. **74(7)**, 843-853 (2004).
3. McNamara, A., Pulido-Rios, M.T., Sweazey, S., *et al*. Pharmacological properties of TD-6301, a novel bladder selective muscarinic receptor antagonist. *Eur. J. Pharmacol*. **605(1-3)**, 145-152 (2009).

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