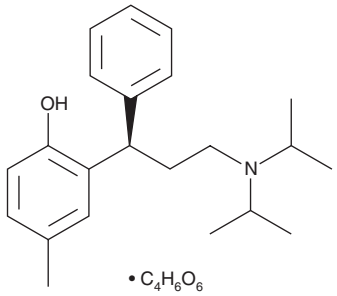
# PRODUCT INFORMATION

## Tolterodine (tartrate)

*Item No. 15027*

**CAS Registry No.:** 124937-52-6
**Formal Name:** 2-[(1R)-3-[*bis*(1-methylethyl) amino]-1-phenylpropyl]-4-methyl-phenol, 2R,3R-dihydroxybutanedioate
**Synonym:** PNU 200583E
**MF:** $C_{22}H_{31}NO \bullet C_4H_6O_6$
**FW:** 475.6
**Purity:** ≥98%
**UV/Vis.:** $\lambda_{max}$: 284 nm
**Supplied as:** A crystalline 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

Tolterodine (tartrate) is supplied as a crystalline solid. A stock solution may be made by dissolving the tolterodine (tartrate) in the solvent of choice, which should be purged with an inert gas. Tolterodine (tartrate) is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide. The solubility of tolterodine (tartrate) in these solvents is approximately 0.1, 20, and 30 mg/ml, respectively.

Further dilutions of the stock solution into aqueous buffers or isotonic saline should be made prior to performing biological experiments. Ensure that the residual amount of organic solvent is insignificant, since organic solvents may have physiological effects at low concentrations. Organic solvent-free aqueous solutions of tolterodine (tartrate) can be prepared by directly dissolving the crystalline solid in aqueous buffers. The solubility of tolterodine (tartrate) in PBS, pH 7.2, is approximately 1 mg/ml. We do not recommend storing the aqueous solution for more than one day.

### Description

Tolterodine is an antagonist of muscarinic acetylcholine receptors ($K_i$s = 1.4, 2.7, 3.6, 3.1, and 2.2 nM for $M_{1-5}$ 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 ($K_i$s = 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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