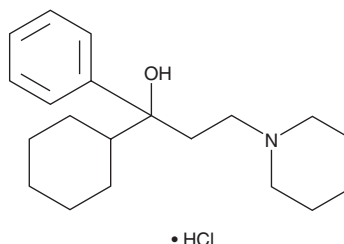


# PRODUCT INFORMATION

## Trihexyphenidyl (hydrochloride)

Item No. 27643

**CAS Registry No.:** 52-49-3  
**Formal Name:**  $\alpha$ -cyclohexyl- $\alpha$ -phenyl-1-piperidinepropanol, monohydrochloride  
**Synonym:** Benzhexol hydrochloride  
**MF:**  $C_{20}H_{31}NO \cdot HCl$   
**FW:** 337.9  
**Purity:**  $\geq 98\%$   
**Supplied as:** A solid  
**Storage:**  $-20^{\circ}C$   
**Stability:**  $\geq 4$  years



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

### Laboratory Procedures

Trihexyphenidyl (hydrochloride) is supplied as a solid. A stock solution may be made by dissolving the trihexyphenidyl (hydrochloride) in the solvent of choice, which should be purged with an inert gas. Trihexyphenidyl (hydrochloride) is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide (DMF). The solubility of trihexyphenidyl (hydrochloride) in ethanol is approximately 3 mg/ml and approximately 2 mg/ml in DMSO and DMF.

Trihexyphenidyl (hydrochloride) is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, trihexyphenidyl (hydrochloride) should first be dissolved in ethanol and then diluted with the aqueous buffer of choice. Trihexyphenidyl (hydrochloride) has a solubility of approximately 0.2 mg/ml in a 1:4 solution of ethanol:PBS (pH 7.2) using this method. We do not recommend storing the aqueous solution for more than one day.

### Description

Trihexyphenidyl is an antagonist of  $M_1$  muscarinic acetylcholine receptors.<sup>1</sup> It binds to rat  $M_1$  receptors in cerebral cortex selectively over rat  $M_2$  receptors in heart tissue ( $IC_{50}$ s = 3.7 and 31 nM, respectively). Trihexyphenidyl inhibits contractions induced by acetylcholine (Item No. 23829) in guinea pig ileum ( $IC_{50}$  = 22 nM).<sup>2</sup> It also inhibits oxotremorine-induced tremors and physostigmine-induced mortality in mice ( $ED_{50}$ s = 2 and 3.6 mg/kg, respectively). Trihexyphenidyl (20 mg/kg) improves abnormal movement in a mouse model of L-3,4-dihydroxyphenylalanine (L-DOPA) responsive dystonia (DRD) that expresses mutant tyrosine hydroxylase (TH).<sup>3</sup> Formulations containing trihexyphenidyl have been used in the symptomatic treatment of Parkinson's disease.

### References

- Giachetti, A., Giraldo, E., Ladinsky, H., *et al.* Binding and functional profiles of the selective  $M_1$  muscarinic receptor antagonists trihexyphenidyl and dicyclomine. *Br. J. Pharmacol.* **89**(1), 83-90 (1986).
- Fjalland, B., Christensen, A.V., and Hyttel, J. Peripheral and central muscarinic receptor affinity of psychotropic drugs. *Naunyn. Schmiedeberg's Arch. Pharmacol.* **301**(1), 5-9 (1977).
- Rose, S.J., Yu, X.Y., Heinzer, A.K., *et al.* A new knock-in mouse model of L-DOPA-responsive dystonia. *Brain* **138**(Pt 10), 2987-3002 (2015).

#### WARNING

THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

#### SAFETY DATA

This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the complete Safety Data Sheet, which has been sent via email to your institution.

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#### 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