

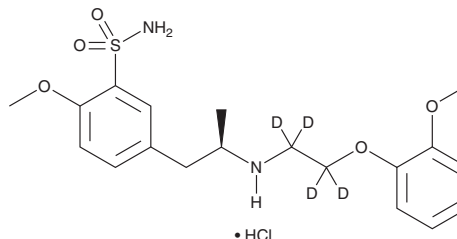
# PRODUCT INFORMATION



## Tamsulosin-d<sub>4</sub> (hydrochloride)

Item No. 28486

**CAS Registry No.:** 2518100-55-3  
**Formal Name:** 5-[(2R)-2-[[2-(2-ethoxyphenoxy)ethyl]-1,1,2,2-d<sub>4</sub>]amino]propyl]-2-methoxybenzenesulfonamide, monohydrochloride  
**MF:** C<sub>20</sub>H<sub>24</sub>D<sub>4</sub>N<sub>2</sub>O<sub>5</sub>S • HCl  
**FW:** 449.0  
**Chemical Purity:** ≥98% (Tamsulosin)  
**Deuterium Incorporation:** ≥99% deuterated forms (d<sub>1</sub>-d<sub>4</sub>); ≤1% d<sub>0</sub>  
**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

Tamsulosin-d<sub>4</sub> (hydrochloride) is intended for use as an internal standard for the quantification of tamsulosin (Item No. 24020) 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).

Tamsulosin-d<sub>4</sub> (hydrochloride) is supplied as a solid. A stock solution may be made by dissolving the tamsulosin-d<sub>4</sub> (hydrochloride) in the solvent of choice, which should be purged with an inert gas. Tamsulosin-d<sub>4</sub> (hydrochloride) is slightly soluble in methanol.

### Description

Tamsulosin is a potent antagonist of α<sub>1</sub>-adrenergic receptors (α<sub>1</sub>-ARs; K<sub>i</sub> = 0.229 nM in a radioligand binding assay).<sup>1</sup> It is 3,800-fold selective for α<sub>1</sub>-ARs over α<sub>2</sub>-ARs (K<sub>i</sub> = 871 nM). Tamsulosin antagonizes norepinephrine-induced contraction of isolated rabbit aorta (pA<sub>2</sub> = 10.11) but has no effect on contraction stimulated by histamine, serotonin (Item No. 14332), angiotensin II (Item No. 17150), or prostaglandin F<sub>2α</sub> (Item No. 16010). *In vivo*, tamsulosin reverses the pressor effect of phenylephrine (Item Nos. 17205 | 18619) in pithed rats. It reversibly reduces fertility in male rats when administered at a dose of 0.15 mg/kg.<sup>2</sup> Tamsulosin (1-100 µg/kg) also reduces prostatic pressure in a dose-dependent manner with minimal hypotensive effects in anesthetized dogs.<sup>3</sup> Formulations containing tamsulosin have been used in the treatment of benign prostatic hyperplasia.

### References

1. Honda, K., Takenaka, T., Miyata-Osawa, A., *et al.* Studies on YM-12617: A selective and potent antagonist of postsynaptic α<sub>1</sub>-adrenoceptors. *Naunyn Schmiedeberg's Arch. Pharmacol.* **328**(3), 264-272 (1985).
2. Ratnasooriya, W.D. and Wadsworth, R.M. Tamsulosin, a selective alpha 1-adrenoceptor antagonist, inhibits fertility of male rats. *Andrologia* **26**(2), 107-110 (1994).
3. Sudoh, K., Tanaka, H., Inagaki, O., *et al.* Effect of tamsulosin, a novel alpha 1-adrenoceptor antagonist, on urethral pressure profile in anaesthetized dogs. *J. Auton. Pharmacol.* **16**(3), 147-154 (1996).

#### 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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