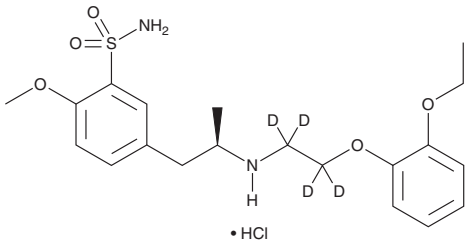
PRODUCT INFORMATION

Tamsulosin-d_4 (hydrochloride)

Item No. 28486

CAS Registry No.: 2518100-55-3
Formal Name: 5-[(2R)-2-[[2-(2-ethoxyphenoxy)ethyl-1,1,2,2-d_4]amino]propyl]-2-methoxy-benzenesulfonamide, monohydrochloride
MF: $C_{20}H_{24}D_4N_2O_5S \bullet HCl$
FW: 449.0
Chemical Purity: ≥98% (Tamsulosin)
Deuterium Incorporation: ≥99% deuterated forms (d_1-d_4); ≤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

Tamsulosin-d_4 (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_4 (hydrochloride) is supplied as a solid. A stock solution may be made by dissolving the tamsulosin-d_4 (hydrochloride) in the solvent of choice, which should be purged with an inert gas. Tamsulosin-d_4 (hydrochloride) is slightly soluble in methanol.

Description

Tamsulosin is a potent antagonist of α_1-adrenergic receptors (α_1-ARs; K_i = 0.229 nM in a radioligand binding assay).[1] It is 3,800-fold selective for α_1-ARs over α_2-ARs (K_i = 871 nM). Tamsulosin antagonizes norepinephrine-induced contraction of isolated rabbit aorta (pA_2 = 10.11) but has no effect on contraction stimulated by histamine, serotonin (Item No. 14332), angiotensin II (Item No. 17150), or prostaglandin $F_{2\alpha}$ (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.[2] Tamsulosin (1-100 µg/kg) also reduces prostatic pressure in a dose-dependent manner with minimal hypotensive effects in anesthetized dogs.[3] 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 α1-adrenoceptors. *Naunyn Schmiedebergs 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).

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