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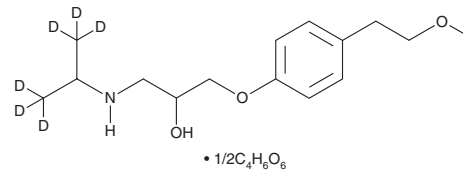
PRODUCT INFORMATION



Metoprolol-d₆ (tartrate)

Item No. 28188

Formal Name: 1-[4-(2-methoxyethyl)phenoxy]-3-[[1-(methyl-d₃)ethyl-2,2,2-d₃] amino]-2-propanol, 2R,3R-dihydroxybutanedioate (2:1)
MF: C₁₅H₁₉D₆NO₃ • 1/2C₄H₆O₆
FW: 348.5
Chemical Purity: ≥98% (Metoprolol)
Deuterium Incorporation: ≥99% deuterated forms (d₁-d₆); ≤1% d₀
Supplied as: A solid
Storage: -20°C
Stability: ≥2 years



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

Laboratory Procedures

Metoprolol-d₆ (tartrate) is intended for use as an internal standard for the quantification of metoprolol (Item No. 15429) 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).

Metoprolol-d₆ (tartrate) is supplied as a solid. A stock solution may be made by dissolving the metoprolol-d₆ (tartrate) in the solvent of choice. Metoprolol-d₆ (tartrate) is soluble in organic solvents such as methanol and DMSO, which should be purged with an inert gas.

Description

Metoprolol is a potent and selective β₁-adrenergic receptor (β₁-AR) antagonist (K_i = 47 nM).¹ It is selective for β₁- over β₂- and β₃-ARs (K_is = 2.96 and 10.1 μM, respectively). *In vivo*, metoprolol (2.5 mg/kg per hour) reduces aortic atherosclerotic plaque area, serum levels of TNF-α and CXCL1, and plaque macrophage content in an ApoE^{-/-} mouse model of atherosclerosis.² Metoprolol (1 mg/kg per day) reduces biventricular cavity expansion and myocardial necrosis in a mouse model of encephalomyocarditis-induced congestive heart failure when administered in combination with captopril (Item No. 15313).³ Formulations containing metoprolol have been used in the treatment of high blood pressure and heart failure.

References

- Hoffmann, C., Leitz, M.R., Oberdorf-Maass, S., *et al.* Comparative pharmacology of human β-adrenergic receptor subtypes - characterization of stably transfected receptors in CHO cells. *Naunyn-Schmiedeberg's Arch. Pharmacol.* **369**(2), 151-159 (2004).
- Ulleryd, M.A., Bernberg, E., Yang, L.J., *et al.* Metoprolol reduces proinflammatory cytokines and atherosclerosis in ApoE^{-/-} mice. *Biomed. Res. Int.* **548783** (2014).
- Kanda, T., Inoue, M., Suzuki, T., *et al.* Low-dose combination therapy with metoprolol and captopril for congestive heart failure in mice. *Cardiovasc. Drugs Ther.* **7**(5), 795-800 (1993).

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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