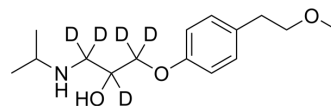


Metoprolol-d₅

Cat. No.:	HY-17503S3
CAS No.:	959786-79-9
Molecular Formula:	C ₁₅ H ₂₀ D ₅ NO ₃
Molecular Weight:	272.39
Target:	Apoptosis; Adrenergic Receptor
Pathway:	Apoptosis; GPCR/G Protein; Neuronal Signaling
Storage:	Please store the product under the recommended conditions in the Certificate of Analysis.



BIOLOGICAL ACTIVITY

Description	Metoprolol-d ₅ is the deuterium labeled Metoprolol[1]. Metoprolol is an orally active, selective β ₁ -adrenoceptor antagonist. Metoprolol shows anti-inflammation, antitumor and anti-angiogenic properties[2][3][4].
In Vitro	Stable heavy isotopes of hydrogen, carbon, and other elements have been incorporated into drug molecules, largely as tracers for quantitation during the drug development process. Deuteration has gained attention because of its potential to affect the pharmacokinetic and metabolic profiles of drugs ^[1] . MCE has not independently confirmed the accuracy of these methods. They are for reference only.

REFERENCES

- [1]. Russak EM, et al. Impact of Deuterium Substitution on the Pharmacokinetics of Pharmaceuticals. *Ann Pharmacother*. 2019 Feb;53(2):211-216.
- [2]. Ulleryd MA, et al. Metoprolol reduces proinflammatory cytokines and atherosclerosis in ApoE^{-/-} mice. *Biomed Res Int*. 2014;2014:548783.
- [3]. Wang D, et al. Carvedilol has stronger anti-inflammation and anti-virus effects than metoprolol in murine model with coxsackievirus B3-induced viral myocarditis. *Gene*. 2014 Sep 1547(2):195-201.
- [4]. Hajatbeigi B, et al. Cytotoxicity of Metoprolol on Leukemic Cells in Vitro. *IJBC* 2018 10(4): 124-129.
- [5]. Su Q, et al. Effect of metoprolol on myocardial apoptosis and caspase-9 activation after coronary microembolization in rats. *Exp Clin Cardiol*. 2013 Spring18(2):161-5.

Caution: Product has not been fully validated for medical applications. For research use only.

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