Atenolol-d_7

Cat. No.: HY-17498S

CAS No.: 1202864-50-3

Molecular Formula: $C_{14}H_{15}D_7N_2O_3$

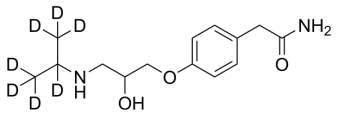
Molecular Weight: 273.38

Target: Adrenergic Receptor

Pathway: GPCR/G Protein; Neuronal Signaling

Storage:

Powder	-20°C	3 years
	4°C	2 years
In solvent	-80°C	6 months
	-20°C	1 month



SOLVENT & SOLUBILITY

In Vitro

DMSO : 100 mg/mL (365.79 mM; Need ultrasonic)

Preparing Stock Solutions

Solvent / Mass / Concentration	1 mg	5 mg	10 mg
1 mM	3.6579 mL	18.2896 mL	36.5791 mL
5 mM	0.7316 mL	3.6579 mL	7.3158 mL
10 mM	0.3658 mL	1.8290 mL	3.6579 mL

Please refer to the solubility information to select the appropriate solvent.

In Vivo

1. Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline
   Solubility: ≥ 2.5 mg/mL (9.14 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 2.5 mg/mL (9.14 mM); Clear solution
3. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.5 mg/mL (9.14 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

Atenolol-d_7 is the deuterium labeled Atenolol. Atenolol ((RS)-Atenolol) is a cardioselective β1-adrenergic receptor blocker, with a Ki of 697 nM atβ1-adrenoceptor in guine pig left ventricle membrane. Atenolol can be used for the research of hypertension and angina pectoris[1][2].

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;53(2):211-216.

[2]. Heel RC, et al. Atenolol: a review of its pharmacological properties and therapeutic efficacy in angina pectoris and hypertension. Drugs. 1979;17(6):425-460.

[3]. Engel G, et al. (+/-)[125Iodo] cyanopindolol, a new ligand for beta-adrenoceptors: identification and quantitation of subclasses of beta-adrenoceptors in guinea pig. Naunyn Schmiedebergs Arch Pharmacol. 1981;317(4):277-285.

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