Carvedilol-d_4

Cat. No.: HY-B0006S1

CAS No.: 1133705-56-2

Molecular Formula: $C_{24}H_{22}D_4N_2O_4$

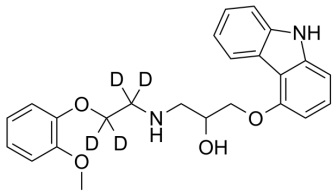
Molecular Weight: 410.5

Target: Adrenergic Receptor; Autophagy

Pathway: GPCR/G Protein; Neuronal Signaling; Autophagy

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 (243.61 mM; Need ultrasonic)

Preparing Stock Solutions	Solvent / Mass / Concentration	1 mg	5 mg	10 mg
	1 mM	2.4361 mL	12.1803 mL	24.3605 mL
	5 mM	0.4872 mL	2.4361 mL	4.8721 mL
	10 mM	0.2436 mL	1.2180 mL	2.4361 mL

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

BIOLOGICAL ACTIVITY

Description

Carvedilol-d_4 is the deuterium labeled Carvedilol. Carvedilol (BM 14190) is a non-selective β/α-1 blocker[1]. Carvedilol inhibits lipid peroxidation in a dose-dependent manner with an IC50 of 5 μM. Carvedilol is a multiple action antihypertensive agent with potential use in angina and congestive heart failure[2]. Carvedilol is an autophagy inducer that inhibits the NLRP3 inflammasome[3].

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]. Eggertsen R, et al. Acute haemodynamic effects of carvedilol (BM 14190), a new combined beta-adrenoceptor blocker and precapillary vasodilating agent, in hypertensive patients. Eur J Clin Pharmacol. 1984;27(1):19-22.

[3]. Feuerstein GZ, et al. Myocardial protection by the novel vasodilating beta-blocker, carvedilol: potential relevance of anti-oxidant activity. J Hypertens Suppl. 1993 Jun;11(4):S41-8.

[4]. Wong WT, et al. Repositioning of the β-Blocker Carvedilol as a Novel Autophagy Inducer That Inhibits the NLRP3 Inflammasome. Front Immunol. 2018 Aug 22;9:1920.

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