(S)-Carvedilol

Cat. No.: HY-B0006B

CAS No.: 95094-00-1

Molecular Formula: $C_{24}H_{26}N_2O_4$

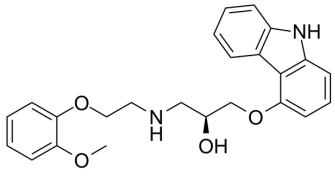
Molecular Weight: 406.47

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 : 200 mg/mL (492.04 mM; Need ultrasonic)

Preparing Stock Solutions

Solvent / Mass / Concentration	1 mg	5 mg	10 mg
1 mM	2.4602 mL	12.3010 mL	24.6021 mL
5 mM	0.4920 mL	2.4602 mL	4.9204 mL
10 mM	0.2460 mL	1.2301 mL	2.4602 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: ≥ 5 mg/mL (12.30 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: 5 mg/mL (12.30 mM); Suspended solution; Need ultrasonic
3. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 5 mg/mL (12.30 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

(S)-Carvedilol, the S-enantiomer of Carvedilol, is a non-selective β/α-1 blocker. (S)-Carvedilol exerts protection against the vascular or cardiac toxicity of Doxorubicin (DOX)[1].

IC_{50} & Target

β/α-1 adrenergic receptor[1]

In Vitro

The β-receptor blocking activity of (S)-Carvedilol is about 100 times greater than that of (R)-Carvedilol, whereas both enantiomers show equipotent potency as α-blockers[1].

(S)-Carvedilol significantly attenuates Doxorubicin (DOX)-induced cell death, apoptotic morphological changes, decrease the mitochondrial membrane potential and oxidative stress responses by increasing the superoxide dismutase and catalase activities, and decreasing malondialdehyde contents and reactive oxygen species levels via the PI3K/AKT/eNO synthase pathway in vitro[1].

(S)-Carvedilol treatment significantly upregulates the expression levels of p-eNOS in HUVECs[1].

MCE has not independently confirmed the accuracy of these methods. They are for reference only.

REFERENCES

[1]. Wu T, et al. Protective effects of S-carvedilol on doxorubicin-induced damages to human umbilical vein endothelial cells and rats. J Appl Toxicol. 2019 Aug;39(8):1233-1244.

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