Carteolol hydrochloride

Cat. No.: HY-17495A

CAS No.: 51781-21-6

Molecular Formula: $C_{16}H_{25}ClN_2O_3$

Molecular Weight: 328.83

Target: Adrenergic Receptor

Pathway: GPCR/G Protein; Neuronal Signaling

Storage: 4°C, sealed storage, away from moisture
* In solvent : -80°C, 6 months; -20°C, 1 month (sealed storage, away from moisture)

SOLVENT & SOLUBILITY

In Vitro

DMSO : 50 mg/mL (152.05 mM; ultrasonic and warming and heat to 60°C)
H_2O : ≥ 25 mg/mL (76.03 mM)
* "≥" means soluble, but saturation unknown.

Preparing Stock Solutions

Solvent / Mass / Concentration	1 mg	5 mg	10 mg
1 mM	3.0411 mL	15.2054 mL	30.4109 mL
5 mM	0.6082 mL	3.0411 mL	6.0822 mL
10 mM	0.3041 mL	1.5205 mL	3.0411 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: ≥ 3 mg/mL (9.12 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 3 mg/mL (9.12 mM); Clear solution
3. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 3 mg/mL (9.12 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

Carteolol hydrochloride (OPC-1085 hydrochloride) is a non-selective beta blocker used to treat glaucoma.

IC_{50} & Target

Beta adrenergic Receptor

In Vitro

Carteolol HCl is a beta-adrenergic antagonist used as an anti-arrhythmia agent, an anti-angina agent, an antihypertensive agent, and an antiglaucoma agent. Carteolol hydrochloride at 1 mmol/L (P<0.05) significantly inhibited H2O2-induced cell damage and was able to scavenge O2 (EC50 value: 48 mmol/L). carteolol hydrochloride has a protective action against UVB-

induced HCEC damage, and its radical scavenging ability may be an important basis for this effect [1]. The new alginate formulation of long-acting carteolol 1% given once daily is as effective as standard 1% carteolol given twice daily, with no meaningful differences regarding safety. This efficacy wasy was verified at 9 AM (24 hours after the last drop of long-acting carteolol or 12 hours after that of standard carteolol) and at 11 AM (2 hours after the morning drop). The new alginate formulation of long-acting carteolol 1% given once a day is effective and well tolerated by glaucoma patients who require chronic treatment [2].

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

CUSTOMER VALIDATION

- J Pharmaceut Biomed. 2020, 113870.
- ACS Omega. August 8, 2022.

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REFERENCES

[1]. Kuwahara, K., et al., Carteolol hydrochloride protects human corneal epithelial cells from UVB-induced damage in vitro. Cornea, 2005. 24(2): p. 213-20.

[2]. Trinquand, C., et al., [Efficacy and safety of long-acting carteolol 1% once daily. A double-masked, randomized study]. J Fr Ophtalmol, 2003. 26(2): p. 131-6.

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