Dibucaine hydrochloride

Cat. No.: HY-B0552A

CAS No.: 61-12-1

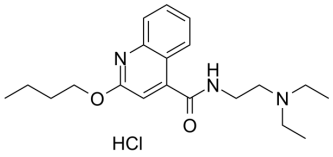
Molecular Formula: $C_{20}H_{30}ClN_3O_2$

Molecular Weight: 379.92

Target: Sodium Channel

Pathway: Membrane Transporter/Ion Channel

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 : 110 mg/mL (289.53 mM; Need ultrasonic)
H_2O : 100 mg/mL (263.21 mM; Need ultrasonic)

Preparing Stock Solutions

Solvent / Mass / Concentration	1 mg	5 mg	10 mg
1 mM	2.6321 mL	13.1607 mL	26.3213 mL
5 mM	0.5264 mL	2.6321 mL	5.2643 mL
10 mM	0.2632 mL	1.3161 mL	2.6321 mL

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

In Vivo

1. Add each solvent one by one: PBS
   Solubility: 120 mg/mL (315.86 mM); Clear solution; Need ultrasonic
2. Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline
   Solubility: ≥ 2.75 mg/mL (7.24 mM); Clear solution
3. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 2.75 mg/mL (7.24 mM); Clear solution
4. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.75 mg/mL (7.24 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

Dibucaine hydrochloride (Cinchocaine hydrochloride) is a sodium channel inhibitor. Dibucaine hydrochloride is a potent SChE inhibitor[1][2].

In Vitro

Dibucaine hydrochloride (Cinchocaine hydrochloride) reduced the degradation of BSA-gold complex in the reservosomes, which was not caused either by an inhibition of the whole proteolytic activity of the parasite or by a reduction on the expression levels of cruzipain[1].Dibucaine, a quaternary ammonium compound, inhibited SChE to a minimum within 2 min

in a reversible manner. The inhibition was very potent. It had an IC(50) of 5.3 microM with BuTch or 3.8 microM with AcTch. The inhibition was competitive with respect to BuTch with a K(i) of 1.3 microM and a linear-mixed type (competitive/noncompetitive) with respect to AcTch with inhibition constants, K(i) and K(I) of 0.66 and 2.5 microM, respectively. Dibucaine possesses a butoxy side chain that is similar to the butryl group of BuTch and longer by an ethylene group from AcTch[2].

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

CUSTOMER VALIDATION

- Stem Cell Res Ther. 2021 Feb 4;12(1):107.
- Platelets. 2021 May 12;1-9.

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REFERENCES

[1]. Souto-Padron, T., A.P. Lima, and O. Ribeiro Rde, Effects of dibucaine on the endocytic/exocytic pathways in Trypanosoma cruzi. Parasitol Res, 2006. 99(4): p. 317-20.

[2]. Elamin, B., Dibucaine inhibition of serum cholinesterase. J Biochem Mol Biol, 2003. 36(2): p. 149-53.

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