Dibucaine

Cat. No.: HY-B0552

CAS No.: 85-79-0

Molecular Formula: $C_{20}H_{29}N_3O_2$

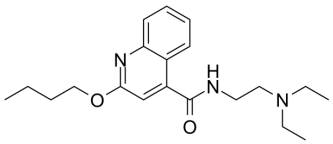
Molecular Weight: 343.46

Target: Sodium Channel

Pathway: Membrane Transporter/Ion Channel

Storage:

Powder	-20°C	3 years
	4°C	2 years
In solvent	-80°C	2 years
	-20°C	1 year



SOLVENT & SOLUBILITY

In Vitro

DMSO : 100 mg/mL (291.15 mM; Need ultrasonic)

Preparing Stock Solutions	Solvent / Mass / Concentration	1 mg	5 mg	10 mg
	1 mM	2.9115 mL	14.5577 mL	29.1155 mL
	5 mM	0.5823 mL	2.9115 mL	5.8231 mL
	10 mM	0.2912 mL	1.4558 mL	2.9115 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 (7.28 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.5 mg/mL (7.28 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

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

In Vitro

Dibucaine (Cinchocaine) reduces 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

- PLoS Biol. 2024 Mar 25;22(3):e3002565.
- Biomed Pharmacother. 2023 Aug, 164, 114903.
- 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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