Clodronate disodium tetrahydrate

Cat. No.: HY-107794

CAS No.: 88416-50-6

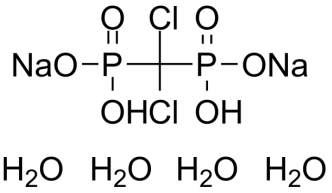
Molecular Formula: $CH_{10}Cl_2Na_2O_{10}P_2$

Molecular Weight: 360.92

Target: Others

Pathway: Others

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

H_2O : 125 mg/mL (346.34 mM; Need ultrasonic)

Preparing Stock Solutions	Solvent / Mass / Concentration	1 mg	5 mg	10 mg
	1 mM	2.7707 mL	13.8535 mL	27.7070 mL
	5 mM	0.5541 mL	2.7707 mL	5.5414 mL
	10 mM	0.2771 mL	1.3853 mL	2.7707 mL

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

In Vivo

1. Add each solvent one by one: PBS
Solubility: 25 mg/mL (69.27 mM); Clear solution; Need ultrasonic and warming

BIOLOGICAL ACTIVITY

Description

Clodronate disodium tetrahydrate (Disodium clodronate tetrahydrate) is first-generation bisphosphonate, with anti-osteoporotic, anti-inflammatory and analgesic effects. Clodronate disodium tetrahydrate is a selective, potent, reversible and Cl^- competitive vesicular nucleotide transporter (VNUT) inhibitor, with an IC_{50} of 15.6 nM. Clodronate disodium tetrahydrate inhibits vesicular ATP release from neurons and reduces chronic neuropathic and inflammatory pain[1][2].

IC_{50} & Target

vesicular ATP release[1]

In Vitro

Clodronate disodium tetrahydrate, a first-generation bisphosphonate, significantly attenuates neuropathic and inflammatory pain unrelated to bone abnormalities via inhibition of VNUT, a key molecule for the initiation of purinergic chemical transmission [1].
Clodronate disodium tetrahydrate is an allosteric modulator of VNUT Cl^- dependence [1].
Clodronate disodium tetrahydrate acts as antiresorptive in osteoporosis[2].
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

In Vivo	Clodronate disodium tetrahydrate (10 mg/kg; i.v.) attenuates inflammatory pain via VNUT inhibition[1]. Clodronate disodium tetrahydrate attenuates inflammation via VNUT inhibition [1]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Animal Model:	C57BL/6 mice (22-30 g)[1]
Dosage:	10 mg/kg
Administration:	Intravenous injection
Result:	Attenuated carrageenan- or complete Freund's adjuvant (CFA)-evoked inflammatory pain.

REFERENCES

[1]. Kato Y, et al. Identification of a vesicular ATP release inhibitor for the treatment of neuropathic and inflammatory pain. Proc Natl Acad Sci U S A. 2017 Aug 1;114(31):E6297-E6305.

[2]. Moriyama Y, et al. Clodronate: A Vesicular ATP Release Blocker. Trends Pharmacol Sci. 2018 Jan;39(1):13-23.

Tel: 609-228-6898 Fax: 609-228-5909 E-mail: tech@MedChemExpress.com

Address: 1 Deer Park Dr, Suite Q, Monmouth Junction, NJ 08852, USA