Clodronic acid disodium salt

Cat. No.: HY-B0657A

CAS No.: 22560-50-5

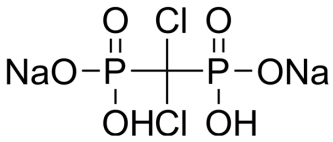
Molecular Formula: $CH_2Cl_2Na_2O_6P_2$

Molecular Weight: 288.86

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 : 100 mg/mL (346.19 mM; Need ultrasonic)
DMSO : < 1 mg/mL (ultrasonic;warming;heat to 60°C) (insoluble or slightly soluble)

Preparing Stock Solutions

Concentration \ Solvent \ Mass	1 mg	5 mg	10 mg
1 mM	3.4619 mL	17.3094 mL	34.6188 mL
5 mM	0.6924 mL	3.4619 mL	6.9238 mL
10 mM	0.3462 mL	1.7309 mL	3.4619 mL

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

In Vivo

1. Add each solvent one by one: PBS
Solubility: 100 mg/mL (346.19 mM); Clear solution; Need ultrasonic

BIOLOGICAL ACTIVITY

Description

Clodronic acid (Clodronate) disodium salt, a first-generation bisphosphonate, is orally active osteoclastic bone resorption inhibitor. Clodronic acid disodium salt can be used in high bone turnover states, Paget's disease and osteolytic bone metastases[1][2][3].

In Vitro

Clodronic acid (Clodronate) disodium salt induces rapid apoptosis in osteoclasts by preventing translocation of ADP into mitochondria after being internalised via resorption. Consequently, ATP production is inhibited, leading to induction of apoptosis by means of release of cytochrome C into the cytoplasm[2].
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

In Vivo

Clodronic acid (Clodronate) disodium salt (6.25-25 mg/kg; p.o.; daily for 28 days) slightly decreases the hindpaw swelling at doses of 12.5 and 25 mg/kg[3].
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Animal Model:	Male Lewis rats, aged 7 weeks[3]
Dosage:	6.25, 12.5, and 25 mg/kg
Administration:	P.o.; daily for 28 days
Result:	Hindpaw swelling was significantly smaller than in adjuvant-arthritis (AA)-control at 25 mg/kg on days 21 and 28 (87 and 88% of AA-control, respectively) and at 12.5 mg/kg on day 28.

REFERENCES

[1]. Itoh F, et al. Effects of clodronate and alendronate on local and systemic changes in bone metabolism in rats with adjuvant arthritis. Inflammation. 2004;28(1):15-21.

[2]. Mönkkönen J, et al. Clodronate (dichloromethylene bisphosphonate) inhibits LPS-stimulated IL-6 and TNF production by RAW 264 cells. Life Sci. 1994;54(14):PL229-PL234.

[3]. Tanakol R, et al. Clodronic acid in the treatment of postmenopausal osteoporosis. Clin Drug Investig. 2007;27(6):419-433.

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