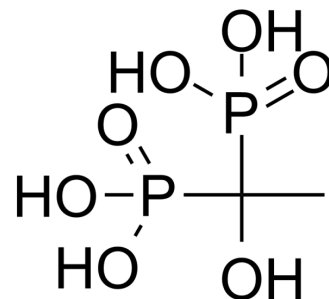


Etidronic acid

Cat. No.:	HY-B0302		
CAS No.:	2809-21-4		
Molecular Formula:	C ₂ H ₈ O ₇ P ₂		
Molecular Weight:	206.03		
Target:	Apoptosis		
Pathway:	Apoptosis		
Storage:	Powder	-20°C	3 years
		4°C	2 years
	In solvent	-80°C	2 years
		-20°C	1 year



SOLVENT & SOLUBILITY

In Vitro

H₂O : 100 mg/mL (485.37 mM; Need ultrasonic)
 DMSO : 100 mg/mL (485.37 mM; Need ultrasonic)

	Solvent Concentration	Mass		
		1 mg	5 mg	10 mg
Preparing Stock Solutions	1 mM	4.8537 mL	24.2683 mL	48.5366 mL
	5 mM	0.9707 mL	4.8537 mL	9.7073 mL
	10 mM	0.4854 mL	2.4268 mL	4.8537 mL

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

In Vivo

- Add each solvent one by one: PBS
Solubility: 100 mg/mL (485.37 mM); Clear solution; Need ultrasonic
- Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline
Solubility: ≥ 2.5 mg/mL (12.13 mM); Clear solution
- Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
Solubility: ≥ 2.5 mg/mL (12.13 mM); Clear solution
- Add each solvent one by one: 10% DMSO >> 90% corn oil
Solubility: ≥ 2.5 mg/mL (12.13 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

Etidronic acid (Etidronate) is an orally and intravenously active bisphosphonate. Etidronic acid inhibits resorption of bone, reduces arterial calcification and can be used for osteoporosis research. Etidronic acid has anticancer activity. Etidronic acid is a chelating agent and can be used to remove heavy metal in water^{[1][2][3][4]}.

In Vitro

Etidronic acid (Etidronate) (10 mM, 24 h) shows cytotoxicity, causes a decrease in the S-phase population and an increase in the G2/M population, induces p53 mutation in MCF-7 cells^[3].

Etidronic acid (100 nM, 24 h) induces osteoclast apoptosis, which displays characteristics of apoptosis, including chromatin condensation and changed cellular and nuclear morphology, detected by fluorescence microscopy^[5].

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

CUSTOMER VALIDATION

- Cell Rep. 2022 Oct 25;41(4):111508.

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REFERENCES

- [1]. Dunn CJ, et al. Etidronic acid. A review of its pharmacological properties and therapeutic efficacy in resorptive bone disease. *Drugs Aging*. 1994 Dec;5(6):446-74.
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- [3]. Zhou Y, et al. Cytotoxicity of etidronic acid to human breast cancer cells. *Ethn Dis*. 2008 Spring;18(2 Suppl 2):S2-87-92.
- [4]. Zhu S, et al. In-Depth Study of Heavy Metal Removal by an Etidronic Acid-Functionalized Layered Double Hydroxide. *ACS Appl Mater Interfaces*. 2022 Feb 9;14(5):7450-7463.
- [5]. Kameda T, et al. Estrogen inhibits bone resorption by directly inducing apoptosis of the bone-resorbing osteoclasts. *J Exp Med*. 1997 Aug 18;186(4):489-95.

Caution: Product has not been fully validated for medical applications. For research use only.

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