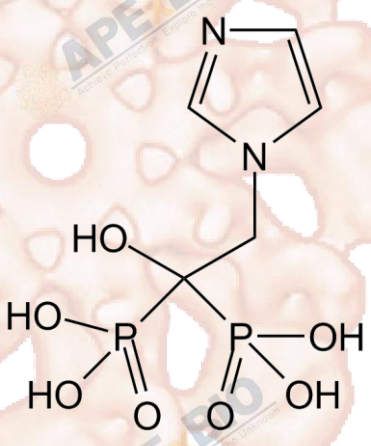
Zoledronic Acid

Cat. No.: A1352
CAS No.: 118072-93-8
Formula: C5H10N2O7P2
M.Wt: 272.09
Synonyms:
Target: Cell Cycle/Checkpoint
Pathway: Rho
Storage: Store at -20°C



Solvent & Solubility

In Vitro

insoluble in DMSO; insoluble in H2O; insoluble in EtOH

Preparing Stock Solutions

Mass / Solvent / Concentration	1mg	5mg	10mg
1 mM	3.6753 mL	18.3763 mL	36.7525 mL
5 mM	0.7351 mL	3.6753 mL	7.3505 mL
10 mM	0.3675 mL	1.8376 mL	3.6753 mL

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

Biological Activity

Shortsummary	Potent nitrogen-containing bisphosphonates
IC_{50} & Target	

In Vitro

Cell Viability Assay

Cell Line:	The human breast carcinoma cell lines (MCF-7 and MDA-MB-231)
Preparation method:	The solubility of this compound in DMSO is limited. General tips for obtaining a higher concentration: Please warm the tube at 37°C for 10 minutes and/or shake it in the ultrasonic bath for a while. Stock solution can be stored below -20°C for several months.

	Reacting conditions:	0.1–100 μM for 72 hours.
	Applications:	Treatment of MCF-7 cells with a range of zoledronic acid concentrations had little effect on apoptosis at 0.1 and 1.0 μM, however, an increase in the proportion of apoptotic cells was observed with 10 μM and 100 μM zoledronic acid compared with control (28.7% and 70.7% vs 22.57%, respectively).Treatment of MDA-MB-231 cells with 0.1–1 μM zoledronic acid did not cause an increase in apoptosis, but treatment with the 10 and 100 μM zoledronic acid resulted in a significant increase in the proportions of apoptotic cells (126.6% and 126.6% of control). A significant time-dependent increase in MCF7 cell apoptosis was confirmed when cells were incubated with 100 μM zoledronic acid for 24–96 hours.
In Vivo	**Animal experiment**	
	Animal models:	The 5T2MM murine model (Male, 6-week-old, C57BL/KaLwRijHsd mice)
	Dosage form:	120 g/kg, subcutaneously (sc), twice weekly, 12 weeks.
	Applications:	Treatment of mice bearing 5T2MM cells with zoledronic acid clearly prevented the development of osteolytic bone disease, decreased tumor burden in bone, and increased survival in a model of established myeloma.
	Other notes:	Please test the solubility of all compounds indoor, and the actual solubility may slightly differ with the theoretical value. This is caused by an experimental system error and it is normal.

Product Citations

See more customer validations on www.apexbt.com.

References

[1] Jagdev SP, Coleman RE, Shipman CM , et al .The bisphosphonate, zoledronic acid, induces apoptosis of breast cancer cells: evidence for synergy with paclitaxel. Br J Cancer. 2001 Apr 20;84(8):1126-34.

[2] Croucher PI, De Hendrik R, Perry MJ, et al. Zoledronic Acid Treatment of 5T2MM-Bearing Mice Inhibits the Development of Myeloma Bone Disease: Evidence for Decreased Osteolysis, Tumor Burden and Angiogenesis, and Increased Survival .J Bone Miner Res. 2003 Mar;18(3):482-92

Caution

FOR RESEARCH PURPOSES ONLY.

NOT FOR HUMAN, VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

Specific storage and handling information for each product is indicated on the product datasheet. Most APExBIO products are stable under the recommended conditions. Products are sometimes shipped at a temperature that differs from the recommended storage temperature. Shortterm storage of many products are stable in the short-term at temperatures that differ from that required for long-term storage. We ensure that the product is shipped under conditions that will maintain the quality of the reagents. Upon receipt of the product, follow the storage recommendations on the product data sheet.

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