

## Alendronate sodium

## Chemical Properties

CAS No. :	129318-43-0
Formula:	C <sub>4</sub> H <sub>12</sub> NNaO <sub>7</sub> P <sub>2</sub>
Molecular Weight:	271.08
Storage:	Keep away from moisture Powder: -20°C for 3 years   In solvent: -80°C for 1 year <small>Actual storage temperature shall be subject to the COA.</small>

## Biological Description

Description	Alendronate sodium is a nitrogen-containing bisphosphonate that inhibits bone resorption. Alendronate sodium interferes with the mevalonate pathway by inhibiting farnesyl-3-phosphate (FPP) synthase in osteoclasts, thereby blocking osteoclast activity and inducing their apoptosis. Sodium alendronate is used in the treatment of metabolic bone diseases such as osteoporosis and Paget's disease of bone.
Targets(IC50)	Others
In vivo	Methods: Female C57BL/6 mice received titanium alloy implants in the proximal right tibia. Postoperatively, they were administered intraperitoneal injections of alendronate sodium (73 µg/kg/day, 5 days per week) for 28 consecutive days. Results: Alendronate sodium significantly increased mechanical strength at the bone-implant interface, significantly accelerated bone formation, and inhibited osteoclast activity. [3]

## Solubility Information

Solubility	DMSO: <1 mg/mL, H <sub>2</sub> O: 20 mg/mL (73.78 mM), Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)
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### Preparing Stock Solutions

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	1mg	5mg	10mg
1 mM	3.6889 mL	18.4447 mL	36.8895 mL
5 mM	0.7378 mL	3.6889 mL	7.3779 mL
10 mM	0.3689 mL	1.8445 mL	3.6889 mL
50 mM	0.0738 mL	0.3689 mL	0.7378 mL

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Please select the appropriate solvent to prepare the stock solution, according to the solubility of the product in different solvents. Please use it as soon as possible.

Note: The dilution table applies only to solid products. For liquid products, please calculate the stock solution based on the stated concentration and/or density.

### Reference

Imai K. Alendronate sodium hydrate (oral jelly) for the treatment of osteoporosis: review of a novel, easy to swallow formulation. Clin Interv Aging. 2013;8:681-688.

Sharpe M, et al. Alendronate: an update of its use in osteoporosis. Drugs. 2001;61(7):999-1039.

Vertesich K, et al. Alendronate enhances osseointegration in a murine implant model. J Orthop Res. 2021;39(4):719-726.

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