

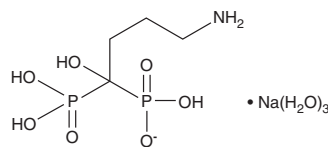
# Product Information



## Alendronate (sodium hydrate)

Item No. 13642

**CAS Registry No.:** 121268-17-5  
**Formal Name:** P,P'-(4-amino-1-hydroxybutylidene) bis-phosphonic acid, monosodium salt trihydrate (1:1:3)  
**Synonyms:** Adronat, Fosamax, G-704650, MK-217  
**MF:** C<sub>4</sub>H<sub>12</sub>NO<sub>7</sub>P<sub>2</sub> • H<sub>6</sub>NaO<sub>3</sub>  
**FW:** 325.1  
**Purity:** ≥95%  
**Stability:** ≥2 years at -20°C  
**Supplied as:** A crystalline solid



### Laboratory Procedures

For long term storage, we suggest that alendronate (sodium hydrate) be stored as supplied at -20°C. It should be stable for at least two years.

Alendronate (sodium hydrate) is supplied as a crystalline solid. Alendronate (sodium hydrate) is sparingly soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide. For biological experiments, we suggest that organic solvent-free aqueous solutions of alendronate (sodium hydrate) be prepared by directly dissolving the alendronate (sodium hydrate) compound in aqueous buffers. The solubility of alendronate (sodium hydrate) in PBS, pH 7.2, is approximately 0.25 mg/ml. We do not recommend storing the aqueous solution for more than one day.

Bisphosphonates bind strongly to bone and reduce bone resorption through effects on both osteoclasts and osteoblasts.<sup>1,2</sup> Alendronate is a nitrogen-containing bisphosphonate that is commonly used in the treatment of osteoporosis and other metabolic bone diseases.<sup>3-5</sup> It inhibits bone resorption *in vitro* with an IC<sub>50</sub> value of 2 nM.<sup>1</sup> *In vivo*, alendronate significantly increases (or prevents a decrease in) bone mineral density and reduces vertebral fractures.<sup>4-6</sup>

### References

1. Sahni, M., Guenther, H.L., Fleisch, H., *et al.* Bisphosphonates act on rat bone resorption through the mediation of osteoblasts. *J. Clin. Invest.* **91**, 2004-2011 (1993).
2. Lin, J.H. Bisphosphonates: A review of their pharmacokinetic properties. *Bone* **18(2)**, 75-85 (1996).
3. Patel, S. Current and potential future drug treatments for osteoporosis. *Ann. Rheum. Dis.* **55**, 700-714 (1996).
4. Bell, N.H. and Johnson, R.H. Bisphosphonates in the treatment of osteoporosis. *Endocrine* **6(2)**, 203-206 (1997).
5. Tuck, S.P. and Datta, H.K. Osteoporosis in the aging male: Treatment options. *Clin. Interv. Aging* **2(4)**, 521-536 (2007).
6. Azuma, Y., Oue, Y., Kanatani, H., *et al.* Effects of continuous alendronate treatment on bone mass and mechanical properties in ovariectomized rats: Comparison with pamidronate and etidronate in growing rats. *J. Pharmacol. Exp. Ther.* **286(1)**, 128-135 (1998).

### Related Products

N-Oleoyl-L-Serine - Item No. 13058 • 2-cyano-Pyrimidine - Item No. 10007121 • Purmorphamine - Item. No. 10009634

**WARNING: THIS PRODUCT IS FOR LABORATORY RESEARCH ONLY: NOT FOR ADMINISTRATION TO HUMANS. NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.**

#### MATERIAL SAFETY DATA

This material should be considered hazardous until information to the contrary becomes available. Do not ingest, swallow, or inhale. Do not get in eyes, on skin, or on clothing. Wash thoroughly after handling. This information contains some, but not all, of the information required for the safe and proper use of this material. Before use, the user must review the complete Material Safety Data Sheet, which has been sent *via* email to your institution.

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