

Alendronate (sodium hydrate)

Catalog No: tcsc0431



Available Sizes

Size: 100mg

Size: 500mg



Specifications

CAS No:

121268-17-5

Formula:

$C_4H_{18}NNaO_{10}P_2$

Pathway:

Others

Target:

Others

Purity / Grade:

>98%

Solubility:

H₂O : ≥ 28.57 mg/mL (87.88 mM)

Alternative Names:

Alendronate;MK 217;G-704650 Adronat

Observed Molecular Weight:

325.12

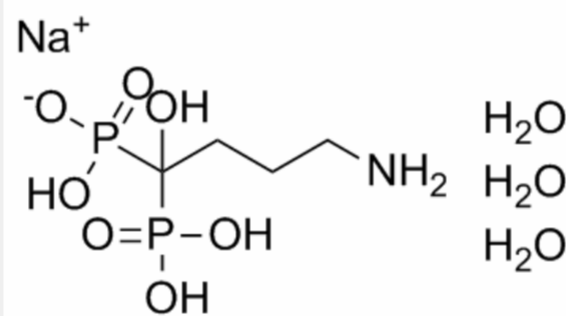
Product Description

Alendronate (sodium hydrate) is a farnesyl diphosphate synthase inhibitor with **IC₅₀** of 460 nM.

IC50 & Target: IC50: 460 nM (farnesyl diphosphate synthase)

In Vitro: Alendronate, acting directly on osteoclasts, inhibits a rate-limiting step in the cholesterol biosynthesis pathway, essential for osteoclast function^[1]. Alendronate inhibits the isoprenoid biosynthesis pathway and interferes with protein prenylation, as a result of reduced geranylgeranyl diphosphate levels. Alendronate inhibits the incorporation of [³H]mevalonolactone into proteins of 18-25 kDa and into nonsaponifiable lipids, including sterols in osteoclasts^[2]. Alendronate causes a dose-dependent inhibition of [³H]MVA incorporation into sterols and a concomitant increase in incorporation of radiolabel into IPP and DMAPP^[3].

In Vivo: Alendronate causes erosions in the rabbit stomach, but not antral ulceration in rats. Alendronate increases the incidence and size of indomethacin-induced antral ulcers. Alendronate also enhances indomethacin-induced gastric damage in the rat, and delays gastric ulcer healing^[4]. Alendronate (0.04-0.1 mg/kg twice weekly or 0.1 mg/kg weekly) partially blocks the establishment of bone metastases by human PC-3 ML cells and results in tumor formation in the peritoneum and other soft tissues. Alendronate pretreatment of mice (0.1 mg/kg twice weekly or weekly) and dosing along with taxol (10-50 mg/kg/day, twice weekly, or weekly) blocks the growth of PC-3 ML tumors in the bone marrow and soft tissues in a statistically significant manner and improves survival rates significantly by 4-5 weeks^[5].



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