Web: www.taiclone.com
Tel: +886-2-2735-9682
Email: order@taiclone.com

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 **IC_{50}** of 460 nM.

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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 [^{3}H]mevalonolactone into proteins of 18-25 kDa and into nonsaponifiable lipids, including sterols in osteoclasts[2]. Alendronate causes a dose-dependent inhibition of [^{3}H]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 gastricdamage 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].