

Product Data Sheet

Product Name: Alisol B
Cat. No.: GC35286

Chemical Properties

Cas. No. 18649-93-9

SMILES C[C@]([C@@]1(C2=C([C@H](C)C[C@@H]([C@]3([H])C(C)(C)O3)O)CC1)C)(CC[C@@]4([H])C5(C)C[C@]([C@H](C2)O)([H])[C@]4(CCC5=O)C

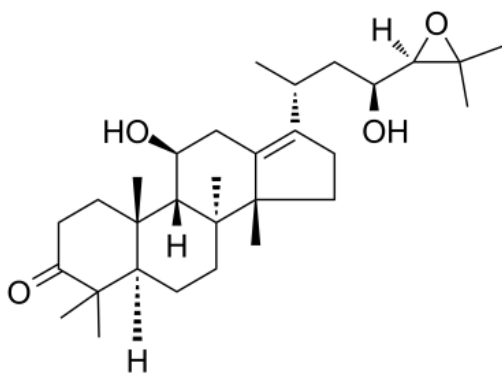
Formula $C_{30}H_{48}O_4$ M.Wt 472.7

Solubility DMSO : 100 mg/mL (211.55 mM; Need ultrasonic) Storage Store at 2-8°C, protect from light

General tips For obtaining a higher solubility, please warm the tube at 37 °C and shake it in the ultrasonic bath for a while. Stock solution can be stored below -20°C for several months.

Shipping Condition Evaluation sample solution : ship with blue ice All other available size: ship with RT, or blue ice upon request.

Structure



Background

Alisol B is a potentially novel therapeutic compound for bone disorders by targeting the differentiation of osteoclasts as well as their functions. IC50 Value: Target: In vitro: The in vitro cultured human renal tubular epithelial HK-2 cells were intervened with 5 ng/mL transforming growth factor-beta (TGF-beta), 0.1 micromol C3a, and 0.1 micromol C3a + 10 micromol alisol B, respectively. Exogenous C3a could induce renal tubular EMT. Alisol B was capable of suppressing C3a induced EMT [1]. Alisol-B

Caution: Product has not been fully validated for medical applications. For research use only.

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strongly inhibited RANKL-induced osteoclast formation when added during the early stage of cultures, suggesting that alisol-B acts on osteoclast precursors to inhibit RANKL/RANK signaling. Among the RANK signaling pathways, alisol-B inhibited the phosphorylation of JNK, which are upregulated in response to RANKL in bone marrow macrophages, alisol-B also inhibited RANKL-induced expression of NFATc1 and c-Fos, which are key transcription factors for osteoclastogenesis. In addition, alisol-B suppressed the pit-forming activity and disrupted the actin ring formation of mature osteoclasts [2]. Alisol B induced calcium mobilization from internal stores, leading to autophagy through the activation of the CaMKK-AMPK-mammalian target of rapamycin pathway. Moreover, the disruption of calcium homeostasis induces endoplasmic reticulum stress and unfolded protein responses in alisol B-treated cells, leading to apoptotic cell death. Finally, by computational virtual docking analysis and biochemical assays, it was showed that the molecular target of alisol B is the sarcoplasmic/endoplasmic reticulum Ca(2+) ATPase [3]. In vivo:

[1]. Zhang RF, et al. [Alisol B inhibited complement 3a-induced human renal tubular epithelial to mesenchymal transition]. Zhongguo Zhong Xi Yi Jie He Za Zhi. 2012 Oct;32(10):1407-12. [2]. Lee JW, et al. Alisol-B, a novel phyto-steroid, suppresses the RANKL-induced osteoclast formation and prevents bone loss in mice. Biochem Pharmacol. 2010 Aug 1;80(3):352-61. [3]. Law BY, et al. Alisol B, a novel inhibitor of the sarcoplasmic/endoplasmic reticulum Ca(2+) ATPase pump, induces autophagy, endoplasmic reticulum stress, and apoptosis. Mol Cancer Ther. 2010 Mar;9(3):718-30.

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