

Product Data Sheet

Product Name: Salinomycin

Cat. No.: GC14882

Chemical Properties

Cas. No. 53003-10-4

Chemical Name Procoxacin

SMILES CCC(C1CCC(C(O1)C(C)C(C(C)C(=O)C(CC)C2C(CC(C3(O2)C=CC(C4(O3)CCC(O4)(C)C5CCC(C(O5)C)(CC)O)O)C)C)O)C)C(=O)O

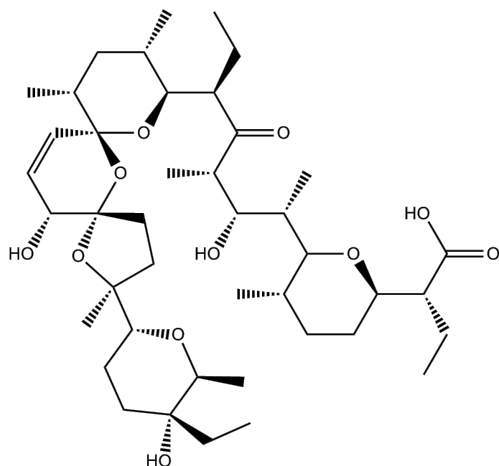
Formula $C_{42}H_{70}O_{11}$ M.Wt 751

Solubility ≥ 91.8 mg/mL in DMSO, ≥ 142.2 mg/mL in EtOH Storage Store at -20°C , stored under nitrogen

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



Protocol

Cell experiment [1]:

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

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Cell lines HCC cell lines HepG2, SMMC-7721 and BEL-7402

Preparation method The solubility of this compound in DMSO is <1.9mg/mL. General tips for obtaining a higher concentration: Please warm the tube at 37 °C for 10 minutes and/or shake it in the ultrasonic bath for a while. Stock solution can be stored below - 20 °C for several months.

Reacting condition 0 ~ 25 µM

Applications In HCC cells, Salinomycin inhibited cell proliferation, down-regulated PCNA level as well as decreased the proportion of HCC CD133+ cell subpopulations. Salinomycin also induced cell cycle arrest and apoptosis. Compared to the control group, Salinomycin significantly down-regulated β-catenin expression, and increased intracellular Ca²⁺ concentrations.

Animal experiment [1]:

Animal models Nude mice bearing HepG2 cells

Dosage form 4 and 8 mg/kg; i.p.; q.d., for 6 weeks

Applications In nude mice bearing HepG2 cells, Salinomycin reduced the size of liver tumors. The results of immunohistochemistry and TUNEL staining also showed that Salinomycin inhibited cell proliferation and induced apoptosis in vivo. Further study implied that the anti-tumor effects of Salinomycin were achieved by increasing intracellular Ca²⁺ levels, and subsequently inhibiting Wnt/β-catenin signaling.

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Other notes Please test the solubility of all compounds indoor, and the actual solubility may slightly differ with the theoretical value. This is caused by an experimental system error and it is normal.

References:

[1]. Wang F, He L, Dai WQ, Xu YP, Wu D, Lin CL, Wu SM, Cheng P, Zhang Y, Shen M, Wang CF, Lu J, Zhou YQ, Xu XF, Xu L, Guo CY. Salinomycin inhibits proliferation and induces apoptosis of human hepatocellular carcinoma cells in vitro and in vivo. PLoS One. 2012;7(12):e50638.

Background

IC50: 7.7, 13.7 and 10.4 μ M for HepG2, SMMC-7721 and BEL-7402 cell line, respectively (after 24h treatment)

Salinomycin (Sal), which is a polyether ionophore antibiotic from *Streptomyces albus*, has been proven to be able to kill different types of human cancer cells, most likely via interfering with ABC drug transporters, the Wnt/ β -catenin signaling pathway, or other pathways.

In vitro: Several hepatocellular carcinoma (HCC) cell lines were treated with Sal. Results showed that Sal inhibited proliferation and decreased PCNA levels. Cell cycle analysis showed that Sal caused cell cycle arrest in different phases. Sal induced apoptosis as characterized by an increase in the Bax/Bcl-2 ratio. Compared to control, β -catenin expression was down-regulated by Sal treatment significantly. The Ca^{2+} concentration in HCC cells was examined by flow cytometry and it was found that higher Ca^{2+} concentrations were observed in Sal treatment groups [1].

In vivo: The in vivo anti-tumor effect of Sal was verified using the hepatoma orthotopic tumor model and results showed that the liver tumor size in Sal-treated groups decreased. Immunohistochemistry and TUNEL staining also demonstrated that Sal could in vivo inhibit proliferation and induced apoptosis [1].

Clinical trial: N/A

Reference:

[1] Wang F, He L, Dai WQ, Xu YP, Wu D, Lin CL, Wu SM, Cheng P, Zhang Y, Shen M, Wang CF, Lu

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