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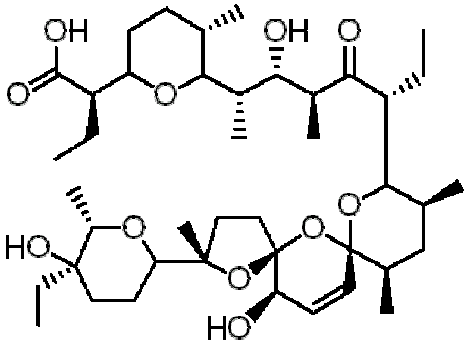
Product Information

Salinomycin from *Streptomyces albus*

Catalog Number **S4526**
Storage Temperature 2–8 °C

CAS RN 53003-10-4

Product Description
Molecular formula: $C_{42}H_{70}O_{11}$
Molecular weight: 751.00



Salinomycin is a monocarboxylic polyether antibiotic with unique tricyclic spiroketal ring systems and an unsaturated six-membered ring in the molecule.[1] It has antimicrobial and anticoccidial activities, and is an alkali ion carrier with affinity for cations, with preference for K^+ over other monovalent and divalent cations.[1] Polyether antibiotics (also called carboxylic ionophores) facilitate bidirectional ion flux through the lipid barrier of membranes causing interference with natural ion transport systems both in prokaryotic and eukaryotic cells.[2-6]

It has been shown tumor cells express elevated levels of various types of K^+ channels, their over expression enhances proliferation. Thus, drugs acting as channel blockers inhibit cell proliferation.[4,5] Being a highly selective potassium ionophore Salinomycin may interfere with the function of potassium channels in cancer stem cells (CSCs).[5] Established cancer therapies may fail because they kill the bulk tumor cells but do not eliminate CSCs. Recent studies indicate Salinomycin selectively eradicates breast CSCs.[5] Salinomycin might eliminate CSCs by inducing their differentiation. Salinomycin was also found to suppress the metastasis of 4T1 cells to the lungs.[5]

Precautions and Disclaimer
This product is for R&D use only, not for drug, household, or other uses. Please consult the Material Safety Data Sheet for information regarding hazards and safe handling practices.

Preparation Instructions
Salinomycin is soluble in methanol (10 mg/ml).

Storage/Stability
Store at 2–8 °C, desiccated and protected from light. Stable for 3 years under these conditions.

References
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3. Butaye, P. et al., Antimicrobial growth promoters used in animal feed: effects of less well known antibiotics on Gram-positive bacteria. *Clin. Microbiol. Rev.*, **16**, 175-188 (2003).
4. Gupta, P.B. et al., Identification of selective inhibitors of cancer stem cells by high-throughput screening. *Cell*, **138**, 645-659 (2009).
5. Beug, H., Breast cancer stem cells: eradication by differentiation therapy? *Cell*, **138**, 623-625 (2009).
6. Le Guennec, J.Y. et al., Voltage-gated ion channels, new targets in anti-cancer research *Recent Pat. Anticancer Drug Discov.*, **2**, 189-202 (2007).

DWF,EM,PHC,MAM 04/12-1