Product Datasheet

Technical Data

Formula	$C_{42}H_{70}O_{11}$					
Molecular Weight	751.00	**CAS No.**	53003-10-4			
Solubility (25°C)*	In vitro	DMSO	100 mg/mL (133.15 mM)			
		Ethanol	100 mg/mL (133.15 mM)			
		Water	Insoluble			
	In vivo (Add solvents to the product individually and in order)	Oral Administration	Homogeneous suspension	CMC-NA	≥5mg/ml	Taking the 1 mL working solution as an example, add 5 mg of this product to 1 ml of CMC-Na solution, mix evenly to obtain a homogeneous suspension with a final concentration of 5 mg/ml.
		Injection	Clear solution	5%DMSO [1]→ 40%PEG300 [2]→ 5%Tween80 [3]→ 50%ddH2O Validated by Capsid Bio labs. Should you need adjustments to this formulation, contact our sales team for custom testing.	5.000mg/ml (6.66mM)	Taking the 1 mL working solution as an example, add 50 μL of 100 mg/ml clarified DMSO stock solution to 400 μL of PEG300, mix evenly to clarify it; add 50 μL of Tween80 to the above system, mix evenly to clarify; then continue to add 500 μL of ddH2O to adjust the volume to 1 mL. The mixed solution should be used immediately for optimal results.

* <1 mg/ml means slightly soluble or insoluble.
* Please note that Capsid Bio tests the solubility of all compounds in-house, and the actual solubility may differ slightly from published values. This is normal and is due to slight batch-to-batch variations.
* Room temperature shipping (Stability testing shows this product can be shipped at 2-8°C for storage purposes.)

Preparing Stock Solutions

Concentration \ Volume / Mass	1 mg	5 mg	10 mg
1 mM	1.3316 mL	6.6578 mL	13.3156 mL
5 mM	0.2663 mL	1.3316 mL	2.6631 mL
10 mM	0.1332 mL	0.6658 mL	1.3316 mL
50 mM	0.0266 mL	0.1332 mL	0.2663 mL

Biological Activity

Description	Salinomycin, traditionally used as an anti-coccidial drug, has recently been shown to possess anti-cancer and anti-cancer stem cell (CSC) effects.
Targets	Wnt/β-catenin [1]
In vitro	Salinomycin, a polyether ionophore antibiotic isolated from Streptomyces albus, has been shown to kill CSCs in different types of human cancers, most likely by interfering with ABC(ATP-binding cassette) drug transporters, the Wnt/β-catenin signaling pathway, and other CSC pathways. It exhibits antimicrobial activity against Gram-positive bacteria including Bacillus subtilis, Staphylococcus aureus, Micrococcus flavus, Sarcina lutea, Mycobacterium spp., some filamentous fungi, Plasmodium falciparum, and Eimeria spp., protozoan parasites responsible for the poultry disease coccidiosis. In addition, this compound has early been shown to act in different biological membranes, including cytoplasmic and mitochondrial membranes, as a monovalent cation ionophore with strict selectivity for alkali ions and a strong preference for K+, thereby promoting mitochondrial and cytoplasmic K+ efflux and inhibiting oxidative phosphorylation. Salinomycin can induce massive apoptosis in human cancer cells of different origin that display multiple mechanisms of drug and apoptosis resistance[1].
In vivo	Salinomycin (from Streptomyces albus) is able to effectively eliminate CSCs and to induce partial clinical regression of heavily pretreated and therapy-resistant cancers. It has also been demonstrated as a positive ionotropic and chronotropic agent that increased cardiac output, left ventricular systolic pressure, heart rate, mean arterial pressure, coronary artery vasodilatation and blood flow, and plasma catecholamine concentration. These results have been obtained in experiments with mongrel dogs that has received a single intravenous injection of 150 μg/kg of this compound. However, It has been reported with a considerable toxicity of salinomycin in mammals, such as horses, pigs, cats, and alpacas after accidental oral or inhalative intake. Risk assessment data recently published by the European Food Safety Authority declare an acceptable daily intake (ADI) of 5 μg/kg salinomycin for humans, because daily intake of more than 500 μg/kg salinomycin by dogs leads to neurotoxic effects, such as myelin loss and axonal degeneration. Intravenous administration of 200-250 μg/kg salinomycin every second day for three weeks results in partial regression of tumor metastasis and shows only minor acute and long-term side effects, but no severe acute and long-term side effects observed with conventional chemotherapeutic drugs[1].

Protocol (from reference)

Cell Assay:[2]

- **Cell lines**
  colon cancer (SW480, SW620, RKO) and breast cancer cell lines (MCF-7, T47D, MDA-MB-453).
- **Concentrations**
  1, 2.5, 5, 10 μM
- **Incubation Time**
  26 h
- **Method**
  Cells are plated at 1500 (SW480 or SW620) or 4000 (all other cell lines) per well in flat-bottom 96-well plates. Sixteen hours later, they are treated with salinomycin (from *Streptomyces albus*) at the indicated concentration. Seventy-two hours after this, 5 mg/ml MTT in PBS is added per well; cells are lysed after 4 hours by addition of 50 μl triplex solution (10% SDS; 5% isobutanol, 0.012 M HCl). Absorbance is measured at 562 nm. Alternatively, viability is determined with the ViaCount reagent on a Guava easyCyte8HT flow cytometer, following the instructions of the manufacturer.

Animal Study:[3]

- **Animal Models**
  NOD/SCID mice

- **Dosages**
  5 mg/kg
- **Administration**
  i.p.

References

https://pubmed.ncbi.nlm.nih.gov/23251084/ https://pubmed.ncbi.nlm.nih.gov/23028492/ https://pubmed.ncbi.nlm.nih.gov/23338561/

RETURN POLICY

Capsid Bio's Unconditional Return Policy ensures a smooth online shopping experience for our customers. If you are in any way unsatisfied with your purchase, you may return any item(s) within 7 days of receiving it. In the event of product quality issues, either protocol related or product related problems, you may return any item(s) within 365 days from the original purchase date. Please follow the instructions below when returning products.

SHIPPING & STORAGE

Capsid Bio products are transported at room temperature. If you receive the product at room temperature, please rest assured, the Capsid Bio Quality Inspection Department has conducted experiments to verify that the normal temperature placement of one month will not affect the biological activity of powder products. After collecting, please store the product according to the requirements described in the datasheet. Most Capsid Bio products are stable under the recommended conditions.

NOT FOR HUMAN, VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

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