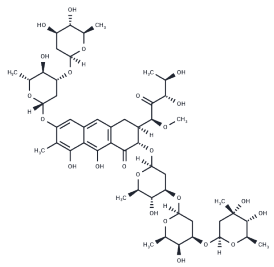
Data Sheet (Cat.No.T5530)

TargetMol

Mithramycin A

Chemical Properties



CAS No. : 18378-89-7

Formula: C52H76O24

Molecular Weight: 1085.15

Storage: Store at low temperature,Store under nitrogen,Keep away from moisture
Powder: -20°C for 3 years | In solvent: -80°C for 1 year
Actual storage temperature shall be subject to the COA.

Biological Description

Description	Mithramycin A (Plicamycin), a DNA-binding antitumor antibiotic, is a selective specificity protein 1 (Sp1) inhibitor, which inhibits the growth of various cancers by decreasing Sp1 protein. Specificity protein 1 (Sp1) is a zinc-finger transcription factor that regulates multiple cellular functions and promotes tumor progression.
Targets(IC50)	Antibacterial,Antibiotic,DNA/RNA Synthesis,GST
In vitro	Mithramycin A decreases Sp1 protein by inducing proteasome-dependent degradation, thereby suppressing cervical cancer growth through a DR5/caspase-8/Bid signaling pathway. Mithramycin A inhibits HEp-2 (50, 100, 200nM) and KB cell (20, 40, 80nM) growth in a concentration-dependent manner after 48 h. Apoptotic cell death is qualitatively estimated by DAPI staining for nuclear condensation and fragmentation. Mithramycin A leads to significant DNA fragmentation compared to untreated controls [1].
In vivo	The antitumor activity of Mithramycin A (0.2mg/kg/day) was measured in a xenograft model and the reduction in tumor volume and weight was observed. No significant weight loss was observed in mice treated with Mithramycin A, suggesting that Mithramycin A-associated toxicity was minimal. Mithramycin A also increased TUNEL positive cells in tumor xenografts. No significant intergroup differences were observed in the organs, suggesting no significant signs of systemic toxicity at the dose of Mithramycin A used in this study [1].

Solubility Information

Solubility	DMSO: 90 mg/mL (82.94 mM),Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)
In vivo Formulation	10% DMSO+40% PEG300+5% Tween 80+45% Saline: 3.3 mg/mL (3.04 mM),Sonication is recommended. *Please add the solvents sequentially, clarifying the solution as much as possible before adding the next one. Dissolve by heating and/or sonication if necessary. Working solution is recommended to be prepared and used immediately. The formulation provided above is for reference purposes only. In vivo formulations may vary and should be modified based on specific experimental conditions.*

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	0.9215 mL	4.6077 mL	9.2153 mL
5 mM	0.1843 mL	0.9215 mL	1.8431 mL
10 mM	0.0922 mL	0.4608 mL	0.9215 mL
50 mM	0.0184 mL	0.0922 mL	0.1843 mL

Please select the appropriate solvent to prepare the stock solution, according to the solubility of the product in different solvents. Please use it as soon as possible.

Note: The dilution table applies only to solid products. For liquid products, please calculate the stock solution based on the stated concentration and/or density.

Reference

Choi ES, et al. Modulation of specificity protein 1 by mithramycin A as a novel therapeutic strategy for cervical cancer. Sci Rep. 2014 Nov 24;4:7162.
Miller DM, et al. Mithramycin selectively inhibits transcription of G-C containing DNA. Am J Med Sci. 1987 Nov;294 (5):388-94.