

Product Data Sheet

Product Name: Ansamitocin P-3

Cat. No.: GC11947

Chemical Properties

Cas. No. 66547-09-9

SMILES CCCC(O[C@@]1([C@@]([C@@](O1)([H])[C@]([C@](O2)([H])C[C@](N=C2O)(O)[C@@](OC)([H])/C([H])=C([H])/C([H])=C(CC3=CC(N4C)=C(Cl)C(OC)=C3)\C)([H])C)C([H])CC4=O)=O

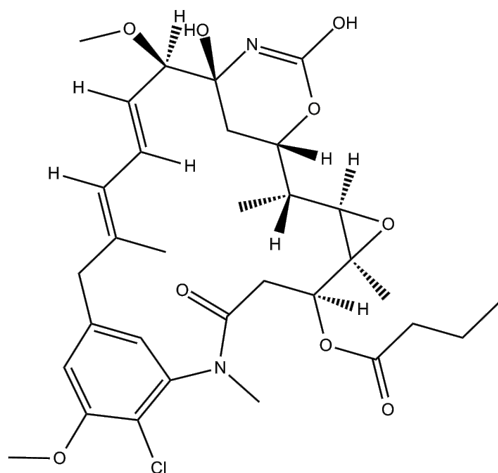
Formula $C_{32}H_{43}ClN_2O_9$ M.Wt 635.14

Solubility ≥ 31.75 mg/mL in DMSO, ≥ 33.73 mg/mL in EtOH with ultrasonic and warming
Storage Store at -20°C

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

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

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Cell experiment: MCF-7, EMT-6/AR1, HeLa and MDA-MB-231 cells are seeded in 96 well plates. Subsequently, cells are incubated with vehicle (0.1% DMSO) or different concentrations (1-1000 pM) of Ansamitocin P3 for 48 h in MCF-7 cells and 24 h for EMT-6/AR1, HeLa and MDA-MB-231 cells, respectively. The half maximal inhibitory concentration of cell proliferation (IC₅₀) for Ansamitocin P3 is determined by sulforhodamine B assay. Four independent experiments are carried out in MCF-7 cells and three independent sets of experiments are performed in EMT-6/AR1, HeLa and MDA-MB-231 cells[2].

References:

- [1]. Kiso T, et al. Screening for microtubule-disrupting antifungal agents by using a mitotic-arrest mutant of *Aspergillus nidulans* and novel action of phenylalanine derivatives accompanying tubulin loss. *Antimicrob Agents Chemother.* 2004 May;48(5):1739-48
- [2]. Venghateri JB, et al. Ansamitocin P3 depolymerizes microtubules and induces apoptosis by binding to tubulin at the vinblastine site. *PLoS One.* 2013 Oct 4;8(10):e75182.

Background

Ansamitocin P-3, a natural product, is maytansinoid which showed potent cytotoxicity against the human solid tumor cell lines A-549 and HT-29 with ED₅₀ of 4×10^{-7} , 4×10^{-7} µg/ml, respectively. [1]

Cytotoxic agents remain an important strategy in chemotherapy. In an activity-directed isolation and identification, ansamitocin P-3 was obtained from the active methanol extracts of two mosses.

Furthermore, the compound showed great cytotoxicity against several tumor cells. [1]

Ansamitocin P-3 is a maytansinoid isolated in very low yield from two members of the moss family Thuidiaceae, *Claopodium crispifolium* (Hook.) Ren. & Card. and *Anomodon attenuatus* (Hedw.) Hueb. Further biological evaluation of ansamitocin P-3 showed potent cytotoxicity against the human solid tumor cell line systems A-549 lung carcinoma cells, HT-29 colon adenocarcinoma cells and MCF-7 breast adenocarcinoma cells at ED₅₀ of 4×10^{-7} , 4×10^{-7} , 2×10^{-6} µg/ml. respectively. [2]

Ansamitocin P-3 exhibited inhibition of cilia regeneration of partially deciliated *Tetrahymena*. The regeneration of cilia in *Tetrahymena* was assayed by observing recovery of motility of the deciliated

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cells which are nonmotile after being deciliated. After 60 min of incubation, more than 95% of partially deciliated *Tetrahymena* cells in the recovery buffer were fully motile. Ansamitocin P-3 completely inhibited cilia regeneration of *Tetrahymena* at 1 μ M. Moreover, recovery of motility of partially deciliated cells after release from inhibition by 2 μ M ansamitocin P-3. [2]

References :

[1]. Suwanborirux, K., et al. "Ansamitocin P-3, a maytansinoid, from *Claopodium crispifolium* and *Anomodon attenuatus* or associated actinomycetes." *Experientia* 46.1 (1990): 117-120.

[2]. Tanida, Seiichi, Eiji Higashide, and Masahiko Yoneda. "Inhibition of cilia regeneration of *Tetrahymena* by ansamitocins, new antitumor antibiotics." *Antimicrobial agents and chemotherapy* 16.1 (1979): 101.

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