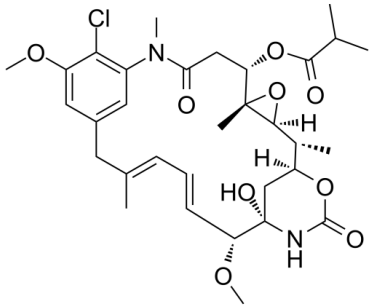
Data Sheet

Product Name:	Ansamitocin P-3
Cat. No.:	CS-1568
CAS No.:	66584-72-3
Molecular Formula:	C32H43ClN2O9
Molecular Weight:	635.14
Target:	ADC Cytotoxin; Microtubule/Tubulin
Pathway:	Antibody-drug Conjugate/ADC Related; Cell Cycle/DNA Damage; Cytoskeleton
Solubility:	DMSO : ≥ 100 mg/mL (157.45 mM); H2O : < 0.1 mg/mL (insoluble)



BIOLOGICAL ACTIVITY:

Ansamitocin P-3 (Antibiotic C 15003P3) is a **microtubule** inhibitor. Ansamitocin P-3 is a macrocyclic antitumor antibiotic. IC50 & Target: Microtubule[1] **In Vitro:** Ansamitocin P-3 (Antibiotic C 15003P3) potently inhibits the proliferation of MCF-7, HeLa, EMT-6/AR1 and MDA-MB-231 cells in culture with a half-maximal inhibitory concentration of 20±3, 50±0.5, 140±17, and 150±1.1 pM, respectively. Further, Ansamitocin P3 is found to bind to purified tubulin in vitro with a dissociation constant (K_d) of 1.3±0.7 μM. The binding of Ansamitocin P3 induces conformational changes in tubulin. Ansamitocin P3 inhibits the proliferation of MCF-7, HeLa, EMT-6/AR1 and MDA-MB-231 cells in culture in a concentration dependent manner. Flow cytometric analysis of PI-stained cells suggests that Ansamitocin P3 inhibits the cell cycle progression of MCF-7 cells in G2/M phase. For example, 26, 50 and 70% of the cells are found to be in G2/M phase in the absence and presence of 50 and 100 pM Ansamitocin P3, respectively[2].

PROTOCOL (Extracted from published papers and Only for reference)

Cell Assay: Ansamitocin P3 is dissolved in DMSO and stored, and then diluted with appropriate medium (DMSO 0.1%) before use[2].[2] 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 (IC_{50}) 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 thevinblastine site. PLoS One. 2013 Oct 4;8(10):e75182.

CAIndexNames:

Maytansine, 3-O-de[2-(acetylmethylamino)-1-oxopropyl]-3-O-(1-oxobutyl)-

SMILES:

ClC1=C(N(C)C(C[C@H](OC(C(C)C)=O)[C@@](O2)(C)[C@]2([H])[C@H](C)[C@]3([H])C[C@](NC(O3)=O)(O)[C@H](OC)/C=C/C=C(C)/C4)=O)C=C4C=C1OC

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

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