Product Data Sheet

Product Name: Carminomycin
Cat. No.: GC14964

Chemical Properties

Cas. No.	50935-04-1,39472-31-6		
Chemical Name	(8S,10S)-8-acetyl-10-(((2R,4S,5S,6S)-4-amino-5-hydroxy-6-methyltetrahydro-2H-pyran-2-yl)oxy)-1,6,8,11-tetrahydroxy-7,8,9,10-tetrahydrotetracene-5,12-dione		
SMILES	C[C@@]1([H])[C@](O)([H])[C@](N)([H])C[C@@](O[C@@]2([H])C[C@@](C(C)=O)(O)CC(C2=C3O)=C(O)C4=C3C(C5=C(C4=O)C=CC=C5O)=O)([H])O1		
Formula	$C_{26}H_{27}NO_{10}$	M.Wt	513.49
Solubility	Soluble in DMSO	Storage	Store at -20°C
General tips	For obtaining a higher solubility , please warm the tube at 37 ℃ and shake it in the ultrasonic bath for a while.Stock solution can be stored below -20℃ 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	Carminomycin		

Background

Carminomycin is a new antitumor antibiotic [1].

Antibiotics are a type of antimicrobial used in the treatment of bacterial infection. They can inhibit the growth of bacteria. Antitumor antibiotics are effective agents widely used in cancer chemotherapy [2].

Carminomycin is a new antitumor antibiotic isolated from the mycelium of Actinomadura carminata containing seven components, five of which are biologically active. The more interesting components are components 1, 2 and 3 [1]. In human MCF-7 breast carcinoma and human K562 leukemia cell lines, carminomycin inhibited cell growth with IC50 values of 90 and 60 nM, respectively. In Pgp-expressing MCF-7Dox and K562i/S9 cell lines, carminomycin inhibited cell growth with a similar activity compared with wild

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type cells, which suggested that carminomycin could circumvent Pgp-mediated multidrug resistant (MDR) [2]. In Micrococcus luteus cells, carminomycin induced one-thread breaks in DNA. In mutant strain DB-7 of M. luteus, carminomycin was more difficult to induce the one-thread breaks, suggesting that UV-endonuclease was probably involved in reparation of the DNA damages induced by carminomycin [3].

In DBA/2 mice with leukemia L-1210, carminomycin (1.5 mg/kg) inhibited the lymphoma colonies by 50% [4].

References:
[1]. Brazhnikova MG, Zbarsky VB, Ponomarenko VI, et al. Physical and chemical characteristics and structure of carminomycin, a new antitumor antibiotic. J Antibiot (Tokyo), 1974, 27(4): 254-259.
[2]. Tevyashova AN, Shtil AA, Olsufyeva EN, et al. Carminomycin, 14-hydroxycarminomycin and its novel carbohydrate derivatives potently kill human tumor cells and their multidrug resistant variants. J Antibiot (Tokyo), 2004, 57(2): 143-150.
[3]. Trenin AS. Carminomycin induction of single-stranded DNA breaks in Micrococcus luteus cells. Antibiotiki, 1979, 24(11): 841-846.
[4]. Berezina TA, Uteshev BS. Comparative characteristics of the antitumor and immunodepressive activity of carminomycin on the L-1210 experimental model. Antibiotiki, 1979, 24(10): 767-771.

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