Product Data Sheet

Product Name: Virginiamycin Complex
Cat. No.: GC17058

Chemical Properties

Cas. No.	11006-76-1
Chemical Name	N-((6R,9S,10R,13S,15aS,22S,24aS)-22-benzyl-6-ethyl-10,23-dimethyl-5,8,12,15,17,21,24-heptaoxo-13-phenyldocosahydro-12H-pyrido[2,1-f]pyrrolo[2,1-l][1]oxa[4,7,10,13,16]pentaazacyclononadecin-9-yl)-3-hydroxypicolinamide compound with (12Z,6R,7R,8E,13Z,15E,17
SMILES	O=C1CCN(C([C@@H](N(C)C([C@@]23[H])=O)CC4=CC=CC=C4)=O)[C@@](C(N[C@@H](C5=CC=CC=C5)C(O[C@H](C)[C@H](NC(C6=NC=CC=C6O)=O)C(N[C@H](CC)C(N2CCC3)=O)=O)=O)=O)([H])C1.O=C(/C=C/[C@@H](C)[C@@H](C(C)C)OC(C7=CCCN7C(C8=COC(C9)=N8)=O)=O)NC/C=C\C(C)=C\[C@@H](O)CC9=O
Formula	$C_{43}H_{49}N_7O_{10} \cdot C_{28}H_{35}N_3O_{10}$
M.Wt	1396.6
Solubility	≤15mg/ml in DMSO;30mg/ml in dimethyl formamide
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	Virginiamycin Complex

Background

Virginiamycin Complex is a a complex containing two streptogramin antibiotics.

Virginiamycin complex contains two streptogramin antibiotics, virginiamycin M1 (75%) and virginiamycin S1 (25%), produced by S. virginiae.

In vitro: Previous study found that the M1 and S1 components of virginiamycin (VM and VS) could inhibit protein synthesis in bacteria--reversibly when a single component was present and irreversibly when both were present. In cell-free systems, each factor bound

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to the large ribosomal subunit, and the affinity of ribosomes for VS was enhanced in the presence of VM. In addition, the binding of labeled VM to ribosomes yielded particles unable to perform poly(U)-directed polyphenylalanine synthesis. Moreover, the association constant for the binding of VS to these particles was equal to that incubated with a mixture of VM and VS [1].

In vivo: A radiochemical method was developed to estimate cholyltaurine hydrolase potentials and rates of cholyltaurine hydrolysis in chicken intestinal homogenates. This method was used to monitor the effects of antibiotic feed additives on cholyltaurine hydrolase activity. Results showed that virginiamycin could improve the rate of weight gain and feed conversion and decrease cholyltaurine hydrolase activity in ileal homogenates relative [2].

Clinical trial: So far, no clinical study has been conducted.

References:
1. Parfait, R., and Cocito, C. Lasting damage to bacterial ribosomes by reversibly bound virginiamycin M. Proceedings of the National Academy of Sciences of the United States of America 77(9), 5492-5496 (1980).
2. Feighner, S.D., and Dashkevicz, M.P. Subtherapeutic levels of antibiotics in poultry feeds and their effects on weight gain, feed efficiency, and bacterial cholyltaurine hydrolase activity. Applied and Environmental Microbiology 53(2), 331-336 (1987).

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