

Product Data Sheet

Product Name: Virginiamycin S1

Cat. No.: GC11623

Chemical Properties

Cas. No. 23152-29-6

Chemical Name N-((6R,9S,10R,13S,15aS,22S,24aS)-22-benzyl-6-ethyl-10,23-dimethyl-5,8,12,15,17,21,24-hepta-oxo-13-phenyldocosahydro-12H-pyrido[2,1-f]pyrrolo[2,1-l][1]oxa[4,7,10,13,16]pentaazacyclononadecin-9-yl)-3-hydroxypicolinamide

SMILES O=C1C[C@](C(N[C@@H](C2=CC=CC=C2)C(O[C@H](C)[C@H](NC(C3=C(O)C=CC=N3)=O)C4=O)=O)=O)([H])N(C([C@@](CC5=CC=CC=C5)([H])N(C)C([C@]6([H])CCCN6([C@H](N4)CC)=O)=O)=O)CC1

Formula C₄₃H₄₉N₇O₁₀

M.Wt 823.9

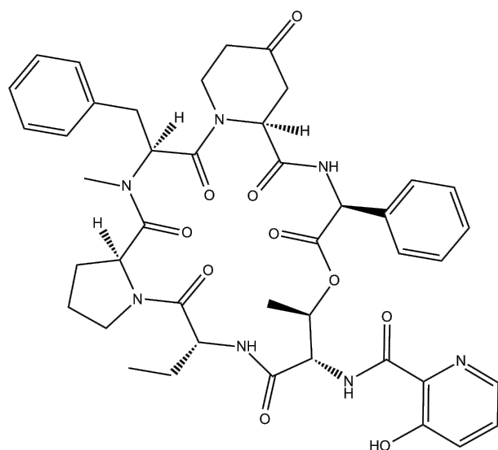
Solubility Soluble in ethanol; methanol; DMSO; dimethyl formamide

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



Background

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

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Virginiamycin S1 is a macrolide antibiotic that reversibly inhibits protein synthesis [1][2][3].

Virginiamycin complex contains two antibiotics, virginiamycin M1 and virginiamycin S1.

Streptogramins are divided into class A and class B based on their structures. Virginiamycin S1 is a member of the streptogramin B group of antibiotics, which bind the peptide exit tunnel to inhibit the elongation stage of translation. They show good bactericidal activity against methicillin-resistant *S. aureus* (MRSA), although resistance in MRSA is conferred by the *cfr* gene. Virginiamycin M1 has activity against gram-positive and in select cases gram-negative bacteria. Combination of group A and B streptogramins exhibit bactericidal activity [1]. Virginiamycin S1 acted synergistically with virginiamycin M1 to irreversibly inhibit protein synthesis in bacteria. In cell-free systems, Virginiamycin M1 and virginiamycin S1 bound to the large ribosomal subunit, and the affinity of ribosomes for VS is increased by VM [2][3].

References:

- [1]. Fair RJ, Tor Y. Antibiotics and bacterial resistance in the 21st century. *Perspect Medicin Chem.* 2014 Aug 28;6:25-64.
- [2]. Kehrenberg C, Cuny C, Strommenger B, et al. Methicillin-resistant and -susceptible *Staphylococcus aureus* strains of clonal lineages ST398 and ST9 from swine carry the multidrug resistance gene *cfr*. *Antimicrob Agents Chemother.* 2009 Feb;53(2):779-81.
- [3]. Parfait R, Cocito C. Lasting damage to bacterial ribosomes by reversibly bound virginiamycin M. *Proc Natl Acad Sci U S A.* 1980 Sep;77(9):5492-6.

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