

## Product Data Sheet

Product Name: Dalfopristin (mesylate)

Cat. No.: GC14837

### Chemical Properties

Cas. No.

Chemical Name (3R,4R,5E,10E,12E,14S,26R,26aS)-26-[[2-(diethylamino)ethyl]sulfonyl]-8,9,14,15,24,25,26,26a-octahydro-14-hydroxy-4,12-dimethyl-3-(1-methylethyl)-3H-21,18-nitrilo-1H,22H-pyrrolo[2,1-c][1,8,4,19]dioxadiazacyclotetracosine-1,7,16,22(4H,17H)-tetrone, monometh

SMILES O=C(/C=C/[C@@H](C)[C@@H](C(C)C)OC(C1N(CC[C@H]1S(CC[NH+](CC)CC)(=O)=O)C(C2=COC(C3)=N2)=O)=O)NC/C=C\C(C)=C\C[C@@H](O)CC3=O.CS([O-])(=O)=O

Formula  $C_{34}H_{51}N_4O_9S \cdot CH_3SO_3$

M.Wt 787.0

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

Dalfopristin (mesylate) is a streptogramin antibiotic and a 50S ribosome inhibitor [1][2].

Streptogramins are produced by a variety of Streptomyces sp as a mixture (ratio of 7:3) of two chemically unrelated compounds, type A and B. Dalfopristin, the type A Streptogramin, is often combined with type B streptogramin antibiotic, quinupristin, to produce Quinupristin-Dalfopristin Complex, known commercially as Synercid. Synercid is used to treat skin infections, and is also active against some Gram-negative and anaerobic bacteria [2][3].

The ribosome is composed of two ribonucleoprotein subunits, the 50S and 30S. The 50S

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ribosome inhibitors inhibited protein synthesis [2].

Dalfopristin is a cyclic polyunsaturated macrolactone that interferes with binding of tRNA substrates to both A- and P-sites [2]. Dalfopristin blocked the access of peptidyl-tRNAs to the ribosome and peptidyltransferase elongation reaction in bacteria [1]. quinupristin and dalfopristin acted synergistically to kill Gram-positive bacteria, as well as some Gram-negative and anaerobic bacteria [2][3]. Dalfopristin hydrolyzed rapidly to virginiamycin M under physiological conditions.

### References:

- [1]. Kohanski MA, Dwyer DJ, Collins JJ. How antibiotics kill bacteria: from targets to networks. *Nat Rev Microbiol.* 2010 Jun;8(6):423-35.
- [2]. Wilson DN. The A-Z of bacterial translation inhibitors. *Crit Rev Biochem Mol Biol.* 2009 Nov-Dec;44(6):393-433.
- [3]. Noeske J, Huang J, Olivier NB, et al. Synergy of streptogramin antibiotics occurs independently of their effects on translation. *Antimicrob Agents Chemother.* 2014 Sep;58(9):5269-79.

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