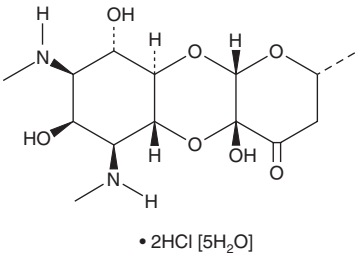
PRODUCT INFORMATION

Spectinomycin (hydrochloride hydrate)

Item No. 14324

CAS Registry No.: 22189-32-8
Formal Name: (5aR,9aR,10aS)-decahydro-4aR,7S,9S-trihydroxy-2R-methyl-6S,8R-*bis*(methylamino)-4H-pyrano[3-b][1,4]benzodioxin-4-one, dihydrochloride pentahydrate
MF: $C_{14}H_{24}N_2O_7 \bullet 2HCl\ [5H_2O]$
FW: 495.4
Supplied as: A crystalline solid
Storage: -20°C
Stability: ≥4 years



Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Laboratory Procedures

Spectinomycin (hydrochloride hydrate) is supplied as a crystalline solid. A stock solution may be made by dissolving the spectinomycin (hydrochloride hydrate) in the solvent of choice, which should be purged with an inert gas. Spectinomycin (hydrochloride hydrate) is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide. The solubility of spectinomycin (hydrochloride hydrate) in these solvents is approximately 0.3, 11, and 2 mg/ml, respectively.

Further dilutions of the stock solution into aqueous buffers or isotonic saline should be made prior to performing biological experiments. Ensure that the residual amount of organic solvent is insignificant, since organic solvents may have physiological effects at low concentrations. Organic solvent-free aqueous solutions of spectinomycin (hydrochloride hydrate) can be prepared by directly dissolving the crystalline solid in aqueous buffers. The solubility of spectinomycin (hydrochloride hydrate) in PBS (pH 7.2) is approximately 10 mg/ml. We do not recommend storing the aqueous solution for more than one day.

Description

Spectinomycin is an aminocyclitol antibiotic produced by *S. spectabilis* that is active against Gram-negative and Gram-positive bacteria. Spectinomycin inhibits protein synthesis by binding to the 30S ribosomal subunit and interfering with peptidyl tRNA translocation.[1] Mutations in the gene for ribosomal protein S5 prevents binding of spectinomycin and contributes to bacterial resistance.[2]

References

1. Zimmerman, J.M. and Maher, L.J.I. *In vivo* selection of spectinomycin-binding RNAs. *Nucleic Acids Res.* **30(24)**, 5425-5435 (2002).
2. Kehrenberg, C. and Schwarz, S. Mutations in 16S rRNA and ribosomal protein S5 associated with high-level spectinomycin resistance in *Pasteurella multocida*. *Antimicrob. Agents Chemother.* **51(6)**, 2244-2246 (2007).

WARNING
THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

SAFETY DATA
This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the complete Safety Data Sheet, which has been sent *via* email to your institution.

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