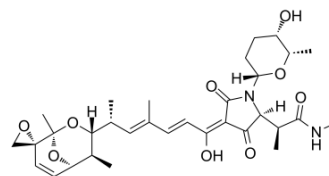


Streptolydigin

Cat. No.:	HY-122337
CAS No.:	7229-50-7
Molecular Formula:	C ₃₂ H ₄₄ N ₂ O ₉
Molecular Weight:	600.7
Target:	DNA/RNA Synthesis; Bacterial
Pathway:	Cell Cycle/DNA Damage; Anti-infection
Storage:	Please store the product under the recommended conditions in the Certificate of Analysis.



BIOLOGICAL ACTIVITY

Description	Streptolydigin (Portamycin) is a 3-acetyltetramic acid antibiotic and a potent bacterial RNA polymerase inhibitor with a K _i of 18 μM and a K _d of 15 μM. Streptolydigin inhibits RNA synthesis by binding to RNA polymerase and does not inhibit eukaryotic RNA polymerases ^{[1][2][3]} . Streptolydigin possess potent antibacterial activity, particularly against anaerobes and some Gram-positive aerobes ^[4] .
IC₅₀ & Target	Ki: 18 μM (Bacterial RNA polymerase) ^[3] Kd: 15 μM (Bacterial RNA polymerase) ^[3]
In Vitro	<p>The antibiotic Streptolydigin (Stl) is a derivative of 3-acetyltetramic acid. Binding of Streptolydigin to RNA polymerase strictly depends on a noncatalytic magnesium ion which is likely chelated by the aspartate of the bridge helix of the active center^[1].</p> <p>Streptolydigin inhibits <i>T. thermophilus</i> RNA polymerase with a K_i of 1.8 μM^[3].</p> <p>Streptolydigin (Stl) inhibits initiation, elongation, and pyrophosphorolysis by bacterial RNA polymerase. Streptolydigin interacts with three structural elements within RNAP: the Stl pocket, the bridge helix, and the trigger-loop region. The Streptolydigin streptolol moiety interacts with the Streptolydigin pocket and bridge helix, and the Streptolydigin tetramic-acid moiety interacts with the trigger-loop region^[3].</p> <p>MCE has not independently confirmed the accuracy of these methods. They are for reference only.</p>

REFERENCES

- [1]. Zorov S, et al. Antibiotic streptolydigin requires noncatalytic Mg²⁺ for binding to RNA polymerase. *Antimicrob Agents Chemother.* 2014;58(3):1420-4.
- [2]. Temiakov D, et al. Structural basis of transcription inhibition by antibiotic streptolydigin. *Mol Cell.* 2005 Sep 2;19(5):655-66.
- [3]. Tuske S, et al. Inhibition of bacterial RNA polymerase by streptolydigin: stabilization of a straight-bridge-helix active-center conformation. *Cell.* 2005 Aug 26;122(4):541-52.
- [4]. Rosen T, et al. Aromatic dienoyl tetramic acids. Novel antibacterial agents with activity against anaerobes and staphylococci. *J Med Chem.* 1989 May;32(5):1062-9.

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

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