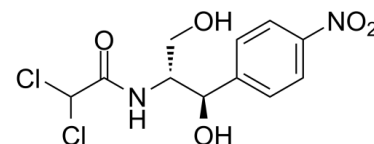


Data Sheet

Product Name:	Chloramphenicol
Cat. No.:	CS-2207
CAS No.:	56-75-7
Molecular Formula:	C ₁₁ H ₁₂ Cl ₂ N ₂ O ₅
Molecular Weight:	323.13
Target:	Bacterial
Pathway:	Anti-infection
Solubility:	DMSO : ≥ 150 mg/mL (464.21 mM)



BIOLOGICAL ACTIVITY:

Chloramphenicol is a broad-spectrum antibiotic. Target: Antibacterial Chloramphenicol is a bacteriostatic drug that stops bacterial growth by inhibiting protein synthesis. Chloramphenicol prevents protein chain elongation by inhibiting the peptidyl transferase activity of the bacterial ribosome. It specifically binds to A2451 and A2452 residues in the 23S rRNA of the 50S ribosomal subunit, preventing peptide bond formation. While chloramphenicol and the macrolide class of antibiotics both interact with ribosomes, chloramphenicol is not a macrolide. It directly interferes with substrate binding, whereas macrolides sterically block the progression of the growing peptide [1, 2].

References:

- [1]. Jardetzky, O., Studies on the mechanism of action of chloramphenicol. I. The conformation of chloramphenicol in solution. J Biol Chem, 1963. 238: p. 2498-508.
- [2]. Wolfe, A.D. and F.E. Hahn, Mode of Action of Chloramphenicol. Ix. Effects of Chloramphenicol Upon a Ribosomal Amino Acid Polymerization System and Its Binding to Bacterial Ribosome. Biochim Biophys Acta, 1965. 95: p. 146-55.

CAIndexNames:

Acetamide, 2,2-dichloro-N-[(1R,2R)-2-hydroxy-1-(hydroxymethyl)-2-(4-nitrophenyl)ethyl]-

SMILES:

O=C(N[C@H](CO)[C@H](O)C1=CC=C([N+])([O-])=O)C=C1)C(Cl)Cl

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

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