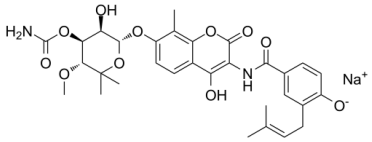
Data Sheet

Product Name:	Novobiocin (Sodium)
Cat. No.:	CS-2531
CAS No.:	1476-53-5
Molecular Formula:	C31H35N2NaO11
Molecular Weight:	634.61
Target:	Autophagy; Bacterial
Pathway:	Anti-infection; Autophagy
Solubility:	DMSO : ≥ 30 mg/mL (47.27 mM); H2O : 83.33 mg/mL (131.31 mM; Need ultrasonic)



BIOLOGICAL ACTIVITY:

Novobiocin Sodium is an antibiotic compound derived from Streptomyces niveus. Target: Antibacterial Novobiocin, also known as albamycin or cathomycin, is an aminocoumarin antibiotic that is produced by the actinomycete Streptomyces niveus, which has recently been identified as a subjective synonym for S. spheroides a member of the order Actinobacteria . Other aminocoumarin antibiotics include clorobiocin and coumermycin A1. The molecular basis of action of novobiocin, and other related drugs clorobiocin and coumermycin A1 has been examined. Aminocoumarins are very potent inhibitors of bacterial DNA gyrase and work by targeting the GyrB subunit of the enzyme involved in energy transduction. Novobiocin as well as the other aminocoumarin antibiotics act as competitive inhibitors of the ATPase reaction catalysed by GyrB. The potency of novobiocin is considerably higher than that of the fluoroquinolones that also target DNA gyrase, but at a different site on the enzyme. The GyrA subunit is involved in the DNA nicking and ligation activity [1-4].

References:

[1]. http://www.ncbi.nlm.nih.gov/pubmed/8231802

[2]. Maxwell, A., DNA gyrase as a drug target. Biochem Soc Trans, 1999. 27(2): p. 48-53.

[3]. Lewis, R.J., F.T. Tsai, and D.B. Wigley, Molecular mechanisms of drug inhibition of DNA gyrase. Bioessays, 1996. 18(8): p. 661-71.

[4]. Maxwell, A. and D.M. Lawson, The ATP-binding site of type II topoisomerases as a target for antibacterial drugs. Curr Top Med Chem, 2003. 3(3): p. 283-303.

CAIndexNames:

Benzamide, N-[7-[[3-O-(aminocarbonyl)-6-deoxy-5-C-methyl-4-O-methyl-α-L-lyxo-hexopyranosyl]oxy]-4-hydroxy-8-methyl-2-oxo-2H-1-benzopyran-3-yl]-4-hydroxy-3-(3-methyl-2-buten-1-yl)-, sodium salt (1:1)

SMILES:

CC1=C(OC2=O)C(C(O)=C2NC(C3=CC(C/C=C(C)/C)=C([O-])C=C3)=O)=CC=C1O[C@H](OC(C)(C)[C@H](OC)[C@H]4OC(N)=O)[C@@H]4O.[Na+]

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

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