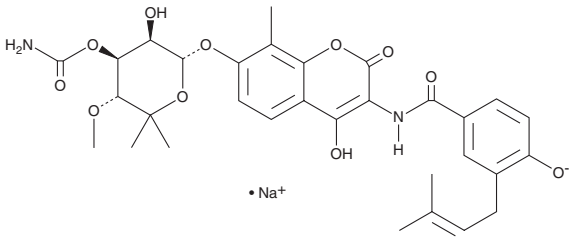
PRODUCT INFORMATION

Novobiocin (sodium salt)

Item No. 18457

CAS Registry No.: 1476-53-5
Formal Name: 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-benzamide, monosodium salt
Synonym: NSC 2382
MF: $C_{31}H_{35}N_2O_{11}$ • Na
FW: 634.6
Purity: ≥95%
UV/Vis.: λ_{max}: 212, 249, 307 nm
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

Novobiocin (sodium salt) is supplied as a crystalline solid. A stock solution may be made by dissolving the novobiocin (sodium salt) in water. The solubility of novobiocin (sodium salt) in water is approximately 100 mg/ml. We do not recommend storing the aqueous solution for more than one day.

Description

Novobiocin is a coumarin antibiotic, first isolated from Streptomyces species, that inhibits the ATPase activity of DNA gyrase.[1] Its antibacterial activity arises from competitive inhibition of the ATPase reaction catalyzed by the GyrB subunit.[1] In addition to permitting relaxation of negative supercoils, novobiocin has been used to generate positively supercoiled DNA.[2] It also inhibits the chaperone activity of Hsp90 (IC_{50} = 700 mM).[3,4]

References

1. Collin, F., Karkare, S., and Maxwell, A. Exploiting bacterial DNA gyrase as a drug target: Current state and perspectives. *Appl. Microbiol. Biotechnol.* **92(3)**, 479-497 (2011).
2. Lockshon, D. and Morris, D.R. Positively supercoiled plasmid DNA is produced by treatment of *Escherichia coli* with DNA gyrase inhibitors. *Nucleic Acids Res.* **11(10)**, 2999-3017 (1983).
3. Allan, R.K., Mok, D., Ward, B.K., *et al.* Modulation of chaperone function and cochaperone interaction by novobiocin in the C-terminal domain of Hsp90: Evidence that coumarin antibiotics disrupt Hsp90 dimerization. *J. Biol. Chem.* **281(11)**, 7161-7171 (2006).
4. Hall, J.A., Seedarala, S., Zhao, H., *et al.* Novobiocin Analogues That Inhibit the MAPK Pathway. *J. Med. Chem.* **59(3)**, 925-933 (2016).

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