
Product Data Sheet

Product Name: Streptonigrin (Bruneomycin)

Cat. No.: GC32303

Chemical Properties

Cas. No. 3930-19-6

SMILES O=C(C1=NC(C2=NC3=C(C(C(OC)=C(N)C3=O)=O)C=C2)=C(N)C(C4=CC=C(OC)C(OC)=C4O)=C1C)OFormula C₂₅H₂₂N₄O₈

M.Wt

506.46

Solubility Chloroform:Methanol (1:1): 2 mg/ml

Storage

Store at -20°C

General For obtaining a higher solubility, please warm the tube at 37 °C and shake it in the ultrasonic bath for a while. Stock solution can be stored below -20°C for several months.

Shipping Evaluation sample solution : ship with blue ice All other available size: ship with RT, or blue ice Condition upon request.

Structure **Background**

Streptonigrin is a phenylpyridylquinoline originally isolated from *S. flocculus* with diverse biological activities.^{1,2,3,4,5,6} Streptonigrin (2.5-12.5 μM) induces DNA cleavage by calf thymus topoisomerase II in a concentration-dependent manner.¹ It induces phage production in *S. typhimurium* when used at concentrations ranging from 1 to 10 μg/ml.² Streptonigrin (10 μg/ml) inhibits DNA synthesis in and reduces survival of *S. typhimurium* bacteria. Streptonigrin is bactericidal against *E. coli* in an iron-dependent manner, an effect that is blocked by the iron chelators deferoxamine and orthophenanthroline.³ Streptonigrin (40 nM) is cytotoxic to human HT-29 colon carcinoma cells but not to BE colon carcinoma cells in which NAD(P)H:quinone oxidoreductase is not expressed.⁴ Streptonigrin (0.001-0.1 μg/ml) inhibits mitosis and induces chromatin breaks in human leukocytes in a concentration-dependent manner.⁵ *In vivo*, streptonigrin (0.05 mg/kg, i.p.) increases the mean survival time in rats infected with Rauscher virus.⁶

1. Yamashita, Y., Kawada, S., Fujii, N., et al. Induction of mammalian DNA topoisomerase II dependent DNA cleavage by antitumor antibiotic streptonigrin *Cancer Res.* 50(18)5841-5844(1990) 2. Levine, M., and Borthwick, M. The action of streptonigrin on bacterial DNA metabolism and on induction of phage production in lysogenic bacteria *Virology* 21(4)568-574(1963) 3. Yeowell, H.N., and White, J.R. Iron requirement in the bactericidal mechanism of streptonigrin *Antimicrob. Agents Chemother.* 22(6)961-968(1982) 4. Beall, H.D., Liu, Y., Siegel, D., et al. Role of NAD(P)H:quinone oxidoreductase (DT-diaphorase) in cytotoxicity and induction of DNA damage by streptonigrin *Biochem. Pharmacol.* 51(5)645-652(1996) 5. Cohen, M.M., Shaw, M.W., and Craig, A.P. The effects of streptonigrin on cultured human leukocytes *Proc. Natl. Acad. Sci. USA* 50(1)16-24(1963) 6. McBride, T.J., Oleson, J.J., and Woolf, D. The activity of streptonigrin against the Rauscher murine leukemia virus *in vivo* *Cancer Res.* 26(4)727-732(1966)

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

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