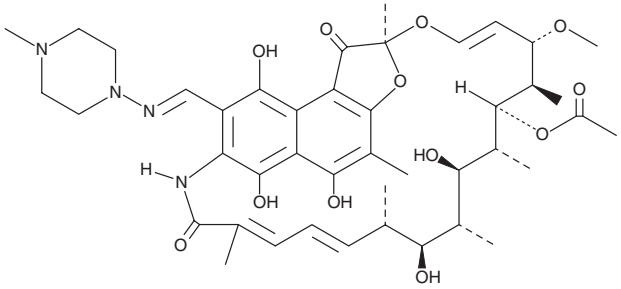
PRODUCT INFORMATION

Rifampicin

Item No. 14423

CAS Registry No.:	13292-46-1
Formal Name:	3-[[(4-methyl-1-piperazinyl)imino] methyl]-rifamycin
Synonyms:	NIH 10782, NSC 113926, Rifampin
MF:	$C_{43}H_{58}N_4O_{12}$
FW:	823.0
Purity:	≥90%
UV/Vis.:	λ_{max}: 236, 339, 479 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

Rifampicin is supplied as a crystalline solid. A stock solution may be made by dissolving the rifampicin in the solvent of choice, which should be purged with an inert gas. Rifampicin is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide (DMF). The solubility of rifampicin in these solvents is approximately 0.12, 3.3, and 20 mg/ml, respectively.

Rifampicin is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, rifampicin should first be dissolved in DMF and then diluted with the aqueous buffer of choice. Rifampicin has a solubility of approximately 0.5 mg/ml in a 1:1 solution of DMF:PBS (pH 7.2) using this method. We do not recommend storing the aqueous solution for more than one day.

Description

Rifampicin is a rifamycin antibiotic and inhibitor of bacterial RNA polymerase (IC_{50} = 0.01 µg/ml for the *E. coli* enzyme).[1] It inhibits the growth of *M. tuberculosis* H37Rv in mouse peritoneal macrophages (MIC = 0.8 µg/ml) as well as clinical isolates of various species of *Staphylococcus*, *Streptococcus*, *Haemophilus*, and *Neisseria* (MICs = 0.009-1.4 µg/ml).[2,3] Rifampicin increases survival in a mouse model of tuberculosis infection.[3] It is also an agonist of the human pregnane X receptor (PXR; EC_{50} = ~2 µM).[4] Formulations containing rifampicin have been used in the treatment of tuberculosis and meningococcal carriers.

References

1. Wehrli, W. Rifampin: Mechanisms of action and resistance. *Rev. Infect. Dis.* **5(3)**, S407-S411 (1983).
2. Jhamb, S.S., Goyal, A., and Singh, P.P. Determination of the activity of standard anti-tuberculosis drugs against intramacrophage *Mycobacterium tuberculosis*, *in vitro*: MGIT 960 as a viable alternative for BACTEC 460. *Braz. J. Infect. Dis.* **18(3)**, 336-340 (2014).
3. Arioli, V., Berti, M., Carniti, G., *et al.* Antibacterial activity of DL 473, a new semisynthetic rifamycin derivative. *J. Antibiot. (Tokyo)* **34(8)**, 1026-1032 (1981).
4. Gill, S.K., Xu, H., Kirchhoff, P.D., *et al.* Structure-based design of novel benzoxazinorifamycins with potent binding affinity to wild-type and rifampin-resistant mutant *Mycobacterium tuberculosis* RNA polymerases. *J. Med. Chem.* **55(8)**, 3814-3826 (2012).

CAYMAN CHEMICAL
1180 EAST ELLSWORTH RD
ANN ARBOR, MI 48108 · USA
PHONE: [800] 364-9897
[734] 971-3335
FAX: [734] 971-3640
CUSTSERV@CAYMANCHEM.COM
WWW.**CAYMANCHEM**.COM