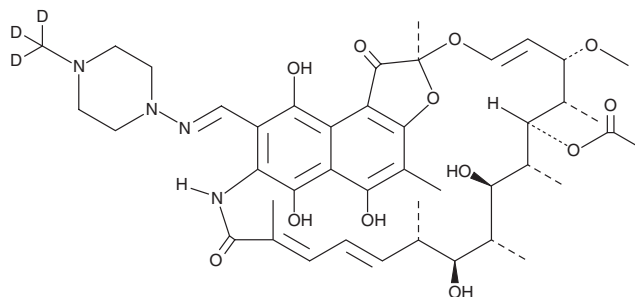


PRODUCT INFORMATION



Rifampicin-d₃ Item No. 27848

CAS Registry No.: 1262052-36-7
Formal Name: 3-[[[4-(methyl-d₃)-1-piperazinyl]imino]methyl]-rifampicin
Synonym: Rifampin-d₃
MF: C₄₃H₅₅D₃N₄O₁₂
FW: 826.0
Chemical Purity: ≥98% (Rifampicin)
Deuterium Incorporation: ≥99% deuterated forms (d₁-d₃); ≤1% d₀
Supplied as: A 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-d₃ is intended for use as an internal standard for the quantification of rifampicin (Item No. 14423) by GC- or LC-MS. The accuracy of the sample weight in this vial is between 5% over and 2% under the amount shown on the vial. If better precision is required, the deuterated standard should be quantitated against a more precisely weighed unlabeled standard by constructing a standard curve of peak intensity ratios (deuterated versus unlabeled).

Rifampicin-d₃ is supplied as a solid. A stock solution may be made by dissolving the rifampicin-d₃ in the solvent of choice, which should be purged with an inert gas. Rifampicin-d₃ is slightly soluble in chloroform and methanol.

Description

Rifampicin is a rifamycin antibiotic and inhibitor of bacterial RNA polymerase (IC₅₀ = 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; EC₅₀ = ~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).

WARNING

THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

SAFETY DATA

This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the complete Safety Data Sheet, which has been sent via email to your institution.

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