

PRODUCT INFORMATION



Rifaximin

Item No. 16131

CAS Registry No.: 80621-81-4
Formal Name: (2S,18E,28E)-25S-(acetyloxy)-5,6,21S,23R-tetrahydroxy-27S-methoxy-2,4,11,16Z,20S,22R,24R,26R-octamethyl-2,7-(epoxypentadeca[1,11,13]trienimino)benzofuro[4,5-e]pyrido[1,2-a]benzimidazole-1,15(2H)-dione

Synonyms: L 105SV, Rifamycin L 105

MF: C₄₃H₅₁N₃O₁₁

FW: 785.9

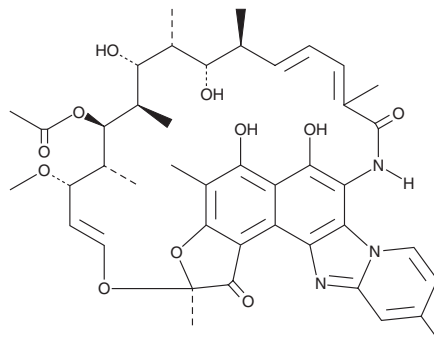
Purity: ≥98%

UV/Vis.: λ_{max}: 219, 238, 294, 373, 458 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

Rifaximin is supplied as a crystalline solid. A stock solution may be made by dissolving the rifaximin in the solvent of choice, which should be purged with an inert gas. Rifaximin is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide (DMF). The solubility of rifaximin in ethanol and DMF is approximately 30 mg/ml and approximately 10 mg/ml in DMSO.

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

Description

Rifaximin is an antibiotic derived from rifamycin SV (Item No. 21441) that inhibits the growth of a variety of Gram-positive and Gram-negative bacteria *in vitro*, including *Staphylococcus*, *Streptococcus*, *Enterococcus*, *H. influenzae*, and *N. gonorrhoeae* (MIC₅₀s = ≤0.015, <0.12, 0.25-2, 0.25, and 0.25 µg/mL, respectively).¹ It is a pregnane X receptor (PXR) agonist (EC₅₀ = ~20 µM) that reduces colonic damage, rectal bleeding, and diarrhea in PXR-humanized, but not wild-type or *Pxr*-null, mice with inflammatory bowel disease (IBD) induced by dextran sulfate sodium (DSS; Item No. 23250).^{2,3} Rifaximin exhibits minimal intestinal absorption after oral administration and is, therefore, effective in eliminating bacteria in the gastrointestinal system.^{4,5} Formulations containing rifaximin have been used in the treatment travelers' diarrhea caused by noninvasive *E. coli*, irritable bowel syndrome with diarrhea (IBS-D), and to reduce the risk of recurrence of overt hepatic encephalopathy.

References

1. Hoover, W.W., Gerlach, E.H., Hoban, D.J., et al. *Diagn. Microbiol. Infect. Dis.* **16(2)**, 111-118 (1993).
2. Ma, X., Shah, Y.M., Guo, G.J., et al. *J. Pharmacol. Exp. Ther.* **322(1)**, 391-398 (2007).
3. Cheng, J., Shah, Y.M., Ma, X., et al. *J. Pharmacol. Exp. Ther.* **335(1)**, 32-41 (2010).
4. Alajbegovic, S., Sanders, J.W., Atherly, D.E., et al. *Syst.Rev.* **1:39** (2012).
5. Song, M., and Ang, T.L. *World J. Gastroenterol.* **20(6)**, 1517-1528 (2014).

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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