Rifampicin Solution (10mg/mL in water), sterile filtered
PRODUCT DATA SHEET

issue date 01/06/2020

Product Name:	Rifampicin Solution (10mg/mL in water), sterile filtered
Product Number:	R041
CAS Number:	13292-46-1
Molecular Formula:	$C_{43}H_{58}N_4O_{12}$
Molecular Weight:	822.94
Form:	Liquid (in water with starch as a solubilizer)
Appearance:	Brownish-red crystalline powder
Source:	Semi-synthetic: Amycolatopsis Rifamycinica
pH:	4.5-6.5
Density:	10mg/ml
Storage Conditions:	Protect from light at 20°C.
Description:	Rifampicin Solution is fully soluble in water, our pre-made stock solutions are easier to handle and safer then the methanol or DMSO solution alternatives. This aqueous formulation is easy to use simply add 1ml to 3ml per liter of desired media. Rifampicin is a broad-spectrum antibiotic, it is not soluble in water and is mostly sold in powder forms. Weighting small amounts of Rifampicin is a tedious job and it can be difficult to avoid human inhalation. Normally, a stock solution of Rifampicin is prepared by dissolving it in methanol which is toxic to many plant cells as well as other cells. Our aqueous solution of Rifampicin is much more user-friendly and non-toxic to these cells. For Rifampicin powder CLICK HERE For Rifampicin Sodium CLICK HERE
Mechanism of Action:	Rifampicin targets prokaryotic DNA dependent RNA polymerases which prevent subsequent RNA transcription and protein translation.

Spectrum:

Rifampicin is a broad-spectrum antibiotic with a wide range of activity including:

- Gram-positive aerobic bacteria, particularly *Staphylococcus spp* and *Rhodococcus equi*
- Brucella and some other fastidious organisms are susceptible but Gram-negative bacteria more generally are resistant
- Gram-positive and Gram-negative anaerobic bacteria are inhibited at low concentrations, including *Bacteroides fragilis*
- *Chlamydophila* and *Rickettsia* are susceptible
- *Mycobacterium tuberculosis*: activity is high against this organism but most other mycobacteria are resistant
- Some protozoa
- Some fungi and poxviruses

Microbiology Applications

Rifampicin is commonly used in bacterial recombinant protein expression to inhibit bacterial RNA polymerase activity and synthesis of host bacterial proteins. Rifampicin can also be used as a selective agent to isolate Campylobacter jejuni.

Rose et al. used rifampicin from TOKU-E in methacrylate-based copolymer films and studied its effects on biofilm formation: "Prevention of Biofilm Formation by Methacrylate-Based Copolymer Films Loaded With Rifampin, Clarithromycin, Doxycycline Alone or in Combination."

Plant Biology Applications

Rifampicin has been tested in Jerusalem artichoke tuber explants by adding 10 to 50 µg/ml to the tissue culture medium. At 50 µg/ml no bacterial infection was detectable, without affecting cell division rates, cytodifferentiation and DNA synthesis. As a result, Rifampicin was used as antibacterial in the following experiments of this university department (Philips, 1981).

References:

"Rifampin: Mechanisms of Action and Resistance." *Oxford Journals* (1983): n. pag. *Clinical Infectious Diseases*. Web. 21 Aug. 2012.

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Bassi, L., Berardino, L., Arioli, V., Silvestri, L., & Lignière, E. (1973). Conditions for Immunosuppression by Rifampicin. *The Journal of Infectious Diseases, 128*(6), 736-744.