PRODUCT INFORMATION

Clarithromycin-^{13}C-d$_3$

Item No. 26678

Formal Name: (3R,4S,5S,6R,7R,9R,11R,12R,13S,14R)-14-ethyl-12,13-dihydroxy-4-(((2R,4R,5S,6S)-5-hydroxy-4-methoxy-4,6-dimethyltetrahydro-2H-pyran-2-yl)oxy)-6-(((2S,3R,4S,6R)-3-hydroxy-6-methyl-4-(methyl(methyl-^{13}C-d$_3$)amino)tetrahydro-2H-pyran-2-yl)oxy)-7-methoxy-3,5,7,9,11,13-hexamethyloxacyclotetradecane-2,10-dione

MF: $C_{37}[^{13}C]H_{66}D_3NO_{13}$

FW: 752.0

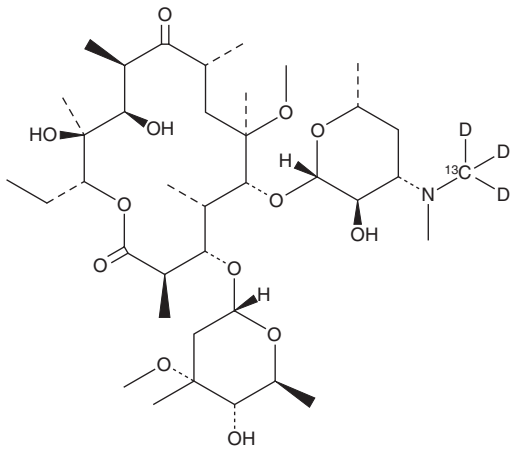
Chemical Purity: ≥98% (Clarithromycin)

Deuterium Incorporation: ≥99% deuterated forms (d_1-d_3); ≤1% d_0

Supplied as: A solid

Storage: -20°C

Stability: ≥2 years



Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Laboratory Procedures

Clarithromycin-^{13}C-d$_3$ is intended for use as an internal standard for the quantification of clarithromycin (Item No. 19455) 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).

Clarithromycin-^{13}C-d$_3$ is supplied as a solid. A stock solution may be made by dissolving the clarithromycin-^{13}C-d$_3$ in the solvent of choice, which should be purged with an inert gas. Clarithromycin-^{13}C-d$_3$ is soluble in DMSO.

Description

Clarithromycin is a polyketide synthase-derived semisynthetic macrolide antibiotic.[1-3] It is active against methicillin-susceptible, but not methicillin-resistant, *S. aureus* (MIC_{50}s = 0.06 and >128 µg/ml), *S. pyogenes*, *L. monocytogenes*, and *B. pertussis* (MIC_{50} = 0.015, 0.25, and ≤0.008 µg/ml, respectively), among others.[1] Clarithromycin (25 mg/kg) decreases the number of colony-forming units (CFUs) in the spleen in a mouse model of *M. avium* infection.[4] Formulations containing clarithromycin have been used in the treatment of bacterial infections and, when used in combination with other antibiotics, in the treatment of *H. pylori*.

References

1. Hardy, D.J., Hensey, D.M., Beyer, J.M., *et al.* Comparative *in vitro* activities of new 14-, 15-, and 16-membered macrolides. *Antimicrob. Agents Chemother.* **32(11)**, 1710-1719 (1988).
2. Wilson, D.N. The A-Z of bacterial translation inhibitors. *Crit. Rev. Biochem. Mol. Biol.* **44(6)**, 393-433 (2009).
3. Wu, J., Kinoshita, K., Khosla, C., *et al.* Biochemical analysis of the substrate specificity of the β-ketoacyl-acyl carrier protein synthase domain of module 2 of the erythromycin polyketide synthase. *Biochemistry* **43(51)**, 16301-16310 (2004).
4. Fernandes, P.B., Hardy, D.J., McDaniel, D., *et al.* In vitro and in vivo activities of clarithromycin against *Mycobacterium avium*. *Antimicrob. Agents Chemother.* **33(9)**, 1531-1534 (1989).

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