PRODUCT INFORMATION

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

Item No. 30653

Formal Name: (2R,3S,4R,5R,8R,10R,11R,12S,13S,14R)-2-ethyl-3,4,10-trihydroxy-13-(((2R,4R,5S,6S)-5-hydroxy-4-methoxy-4,6-dimethyltetrahydro-2H-pyran-2-yl)oxy)-11-(((2S,3R,4S,6R)-3-hydroxy-6-methyl-4-(methyl(methyl-^{13}C-d$_3$)amino)tetrahydro-2H-pyran-2-yl)oxy)-3,5,6,8,10,12,14-heptamethyl-1-oxa-6-azacyclopentadecan-15-one

MF: $C_{37}[^{13}C]H_{69}D_3N_2O_{12}$

FW: 753.0

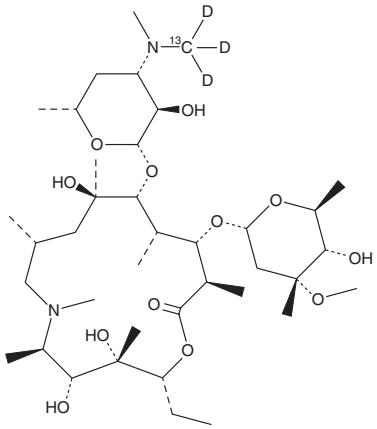
Chemical Purity: ≥98% (Azithromycin)

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

Azithromycin-^{13}C-d$_3$ is intended for use as an internal standard for the quantification of azithromycin (Item No. 15004) 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).

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

Description

Azithromycin-^{13}C-d$_3$ is intended for use as an internal standard for the quantification of azithromycin (Item No. 15004) by GC- or LC-MS. Azithromycin is a macrolide antibiotic.[1] It is active against *S. pneumoniae*, *S. aureus*, *N. gonorrhoeae*, *M. pneumoniae*, *H. pylori*, *C. trachomatis*, and *H. influenzae in vitro* (MIC_{90}s = <0.01-2 mg/L). Azithromycin increases survival in mouse models of intraperitoneal *S. pyogenes*, *S. pneumoniae*, *E. faecalis*, or *H. influenzae* infection (ED_{50}s = 0.78, 8.7, 12.7, and 30.3 mg/kg, respectively).[2] It inhibits replication of severe acute respiratory coronavirus 2 (SARS-CoV-2), but not Middle East respiratory syndrome CoV (MERS-CoV), when used at concentrations of 5 and 10 µM.[3] Azithromycin also decreases plasma levels of IL-6, TNF-α, and IL-1β and increases survival in a mouse model of LPS-induced sepsis when administered at a dose of 100 mg/kg.[4] Formulations containing azithromycin have been used in the treatment of a variety of bacterial infections.

References

1. Kanatani, M.S. and Guglielmo, B.J. *Western J. Med.* **160(1)**, 31-37 (1994).
2. Girard, D., Finegan, S.M., Dunne, M.W., *et al. J. Antimicrob. Chemother.* **56(2)**, 365-371 (2005).
3. Patel, A., Joseph, J., Periasamy, H., *et al. Antimicrob. Agents Chemother.* **62(9)**, e00752-18 (2018).
4. Wahl, R.C., Pulvino, T.A., Mathiowetz, A.M., *et al. Bioorg. Med. Chem. Lett.* **5(4)**, 349-352 (1995).

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