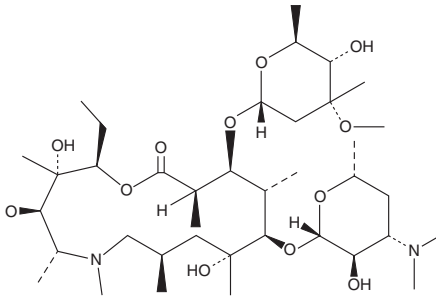
PRODUCT INFORMATION

Azithromycin

Item No. 15004

CAS Registry No.: 83905-01-5
Formal Name: (2R,3S,4R,5R,8R,10R,11R,12S,13S,14R)-13-[(2,6-dideoxy-3-C-methyl-3-O-methyl-α-L-ribo-hexopyranosyl)oxy]-2-ethyl-3,4,10-trihydroxy-3,5,6,8,10,12,14-heptamethyl-11-[[3,4,6-trideoxy-3-(dimethylamino)-β-D-xylo-hexopyranosyl]oxy]-1-oxa-6-azacyclopentadecan-15-one
Synonym: CP 62,993
MF: $C_{38}H_{72}N_2O_{12}$
FW: 749.0
Purity: ≥98%
Supplied as: A crystalline 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 is supplied as a crystalline solid. A stock solution may be made by dissolving the azithromycin in the solvent of choice, which should be purged with an inert gas. Azithromycin is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide (DMF). The solubility of azithromycin in ethanol and DMF is approximately 16 mg/ml and approximately 5 mg/ml in DMSO.

Azithromycin is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, azithromycin should first be dissolved in ethanol and then diluted with the aqueous buffer of choice. Azithromycin has a solubility of approximately 0.50 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

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 also decreases plasma levels of IL-6, TNF-α, and IL-1β and increases survival in mouse model of LPS-induced sepsis when administered at a dose of 100 mg/kg.[3] Formulations containing azithromycin have been used in the treatment of a variety of bacterial infections.

References

1. Kanatani, M.S. and Guglielmo, B.J. The new macrolides. Azithromycin and clarithromycin. *Western J. Med.* **160(1)**, 31-37 (1994).
2. Girard, D., Finegan, S.M., Dunne, M.W., *et al.* Enhanced efficacy of single-dose versus multi-dose azithromycin regimens in preclinical infection models. *J. Antimicrob. Chemother.* **56(2)**, 365-371 (2005).
3. Patel, A., Joseph, J., Periasamy, H., *et al.* Azithromycin in combination with ceftriaxone reduces systemic inflammation and provides survival benefit in a murine model of polymicrobial sepsis. *Antimicrob. Agents Chemother.* **62(9)**, e00752-18 (2018).

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