

PRODUCT INFORMATION



Erythromycin-¹³C-d₃ Item No. 25310

CAS Registry No.: 2378755-50-9
Formal Name: (3R,4S,5S,6R,7R,9R,11R,12R,13S,14R)-14-ethyl-7,12,13-trihydroxy-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-¹³C-d₃)amino)tetrahydro-2H-pyran-2-yl)oxy)-3,5,7,9,11,13-hexamethyloxacyclotetradecane-2,10-dione

MF: C₃₆[¹³C]H₆₄D₃NO₁₃
FW: 738.0

Chemical Purity: ≥98% (Erythromycin)

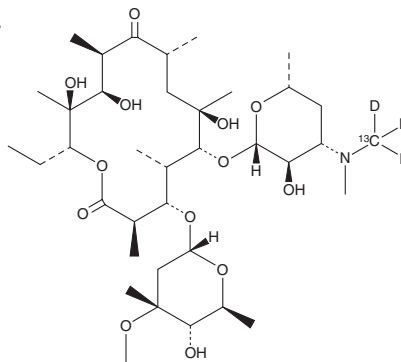
Deuterium

Incorporation: ≥99% deuterated forms (d₁-d₃); ≤1% d₀

Supplied as: A 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

Erythromycin-¹³C-d₃ is intended for use as an internal standard for the quantification of erythromycin (Item No. 16486) 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).

Erythromycin-¹³C-d₃ is supplied as a solid. A stock solution may be made by dissolving the erythromycin-¹³C-d₃ in the solvent of choice, which should be purged with an inert gas. Erythromycin-¹³C-d₃ is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide (DMF). The solubility of erythromycin-¹³C-d₃ in ethanol is approximately 30 mg/ml and approximately 15 mg/ml in DMSO and DMF.

Description

Erythromycin is a macrolide antibiotic that inhibits bacterial protein synthesis by targeting the 50S ribosomal subunit, blocking the progression of nascent polypeptide chains.¹ It is active against a host of bacterial genera, including *Streptococcus*, *Staphylococcus*, and *Haemophilus* (MIC_{90S} = 0.015-2.0 mg/l).² Erythromycin (10-40 mg/kg) dose-dependently inhibits the growth of *S. aureus* in a mouse model of thigh infection.³ It also inhibits the cytochrome P450 (CYP450) isoform CYP3A4 *in vitro* with IC₅₀ values of 33 and 27.3 μM for α-hydroxytriazolam and 4-hydroxytriazolam formation, respectively, following administration of triazolam, which is known to be metabolized primarily by CYP3A4.^{4,5} Formulations containing erythromycin have been used in the treatment of bacterial respiratory and skin infections, pertussis, and a variety of other bacterial infections.

References

1. Wilson, D.N. *Crit. Rev. Biochem. Mol. Biol.* **44**(6), 393-433 (2009).
2. Kanatani, M.S. and Guglielmo, B.J. *Western J. Med.* **160**(1), 31-37 (1994).
3. Hoogeterp, J.J., Mattie, H., and van Furth, R. *Scand. J. Infect. Dis.* **25**(1), 123-132 (1993).
4. Westphal, J.F. *Br. J. Clin. Pharmacol.* **50**(4), 285-295 (2000).
5. Greenblatt, D.J., von Moltke, L.L., Harmatz, J.S., et al. *Clin. Pharmacol. Ther.* **64**(3), 278-285 (1998).

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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