



Roxithromycin PRODUCT DATA SHEET

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Product Name:	Roxithromycin
Product Number:	R005
CAS Number:	80214-83-1
Molecular Formula:	$C_{41}H_{76}N_2O_{15}$
Molecular Weight:	837.05
Form:	Powder
Appearance:	White crystalline powder
Solubility:	Water: 18.9 µg/mg
Source:	Semi-synthetic
Water Content (Karl Fischer):	≤3.0%
Melting Point:	111-118°C
Optical Rotation:	-93.0° to -96.0°
Storage Conditions:	2-8°C
Description:	Roxithromycin is a semisynthetic macrolide antibiotic and is sparingly soluble in aqueous solution (0.019 mg/mL).
Mechanism of Action:	Macrolide antibiotics inhibit bacterial growth by targeting the 50S ribosomal subunit preventing peptide bond formation and translocation during protein synthesis. Resistance to roxithromycin is commonly attributed to mutations in 50S rRNA preventing roxithromycin binding allowing the cell to synthesize proteins free of error.
Spectrum:	Roxithromycin is a broad spectrum antibiotic targeting a wide range of gram positive and gram negative bacteria especially those which cause respiratory and urinary tract infections.
Microbiology Applications	Roxithromycin is commonly used in clinical <i>in vitro</i> microbiological antimicrobial susceptibility tests (panels, discs, and MIC strips) against gram positive and gram negative microbial isolates. Medical microbiologists use AST results to recommend antibiotic treatment options for infected patients. Representative MIC values include: <ul style="list-style-type: none">• <i>Streptococcus agalactiae</i> 0.06 µg/mL – 0.1 µg/mL• <i>Streptococcus pneumoniae</i> 0.125 µg/mL - 2 µg/mL• For a complete list of roxithromycin MIC values, click here.

References:

Lovmar, Martin, and Tanel Tenson. "The Mechanism of Action of Macrolides, Lincosamides and Streptogramin B Reveals the Nascent Peptide Exit Path in the Ribosome." *Journal of Molecular Microbiology* 330.5 (2003): 1005-014.

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