

***Pseudomonas aeruginosa*, Strain MRSN 7014**

Catalog No. NR-51554

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Product Description:

Pseudomonas aeruginosa (*P. aeruginosa*), strain MRSN 7014 was isolated in 2012 from a human respiratory sample in the United States as part of a global surveillance program. *P. aeruginosa*, strain MRSN 7014 was deposited as multi-locus sequence type (MLST) 1129, sensitive to amikacin and tobramycin, intermediately resistant to ciprofloxacin and gentamicin and resistant to aztreonam, ceftazidime, cefepime, imipenem, levofloxacin, meropenem and piperacillin/tazobactam. NR-51554 was produced by inoculation of BEI Resources seed lot 70024985 into Tryptic Soy broth and grown for 1 day at 37°C in an aerobic atmosphere. Broth inoculum was added to Tryptic Soy agar kolles, which were grown for 1 day at 37°C in an aerobic atmosphere to produce this lot. Quality control testing was completed under propagation conditions unless otherwise noted.

Lot: 70064789

Manufacturing Date: 15NOV2023

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TEST	SPECIFICATIONS	RESULTS
Phenotypic Analysis Cellular morphology Colony morphology Motility (wet mount) VITEK® MS (MALDI-TOF)	Gram-negative rods Report results Report results <i>P. aeruginosa</i>	Gram-negative rods Circular, convex, entire, smooth and cream (Figure 1) Motile <i>P. aeruginosa</i> (99.9%)
Antibiotic Susceptibility Profile^{1,2} Amikacin Amoxicillin/clavulanic acid Ampicillin Cefazolin Cefepime Cefoxitin Ceftazidime Ceftriaxone Ciprofloxacin Gentamicin Levofloxacin Meropenem Nitrofurantoin Piperacillin/tazobactam Tetracycline Tobramycin Trimethoprim/sulfamethoxazole	Sensitive Resistant Resistant Resistant Resistant Resistant Resistant Resistant Resistant Sensitive Intermediate Intermediate Intermediate Resistant Resistant Resistant Sensitive Report results	Sensitive (16 µg/mL) Resistant (≥ 32 µg/mL) Resistant (≥ 32 µg/mL) Resistant (≥ 64 µg/mL) Resistant (32 µg/mL) Resistant (≥ 64 µg/mL) Resistant (≥ 64 µg/mL) Resistant (≥ 64 µg/mL) Resistant (≥ 64 µg/mL) Sensitive (1 µg/mL) ³ Intermediate (8 µg/mL) Intermediate (4 µg/mL) ⁴ Intermediate (4 µg/mL) ⁵ Resistant (≥ 512 µg/mL) Resistant (> 256 µg/mL) Resistant (≥ 16 µg/mL) Sensitive (≤ 1 µg/mL) 80 µg/mL ⁶
Genotypic Analysis Sequencing of 16S ribosomal RNA gene (~ 1440 base pairs)	≥ 99% sequence identity to <i>P. aeruginosa</i> , strain MRSN 7014 (GenBank: RXTH01000036.1)	99.9% sequence identity to <i>P. aeruginosa</i> , strain MRSN 7014 (GenBank: RXTH01000036.1)
Purity 7 days at 37°C in an aerobic atmosphere with and without 5% CO ₂ on Tryptic Soy agar	Growth consistent with expected colony morphology	Growth consistent with expected colony morphology

TEST	SPECIFICATIONS	RESULTS
Viability	Growth	Growth

¹Minimum Inhibitory Concentration (MIC); MIC interpretation was determined using VITEK® 2 software version 07.01 combined with the bioMérieux Advanced Expert System™ (AES) software using the interpretation standard CLSI M100-S28 (2018) and the interpretation guideline “Natural Resistance.” For more information, please refer to Sanders, C. C., et al. “Potential Impact of the VITEK® 2 System and the Advanced Expert System on the Clinical Laboratory of a University-Based Hospital.” *J. Clin. Microbiol.* 39 (2001): 2379-2385. PubMed: 11427542.

²Antibiotic susceptibility was tested using a combination of bioMérieux VITEK® 2 GN81 and ETEST®.

³*P. aeruginosa*, strain MRSN 7014 was deposited as intermediately resistant to ciprofloxacin but showed a MIC of 1 µg/mL (interpreted as sensitive) for lot 70024984 during QC testing.

⁴*P. aeruginosa*, strain MRSN 7014 was deposited as resistant to levofloxacin but showed a MIC of 4 µg/mL (interpreted as intermediately resistant) for lot 70024984 during QC testing.

⁵*P. aeruginosa*, strain MRSN 7014 was deposited as resistant to meropenem, but showed a MIC of 4 µg/mL (interpreted as intermediately resistant) for lot 70024984 during QC testing.

⁶Trimethoprim/sulfamethoxazole MIC interpretive standards are not available for *P. aeruginosa*, however most clinical isolates are resistant to trimethoprim/sulfamethoxazole. For more information, please refer to Köhler, T., et al. “Multidrug Efflux in Intrinsic Resistance to Trimethoprim and Sulfamethoxazole in *Pseudomonas aeruginosa*.” *Antimicrob. Agents Chemother.* 40 (1996): 2288-2290. PubMed: 9036831.

Figure 1: Colony Morphology



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