

## Pseudomonas aeruginosa, Strain MRSN 1739

### Catalog No. NR-51530

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### Product Description:

*Pseudomonas aeruginosa* (*P. aeruginosa*), strain MRSN 1739 was isolated in 2010 from a human blood sample in the United States as part of a global surveillance program. *P. aeruginosa*, strain MRSN 1739 was deposited as multi-locus sequence type (MLST) ST 463, sensitive to amikacin, intermediately resistant to ceftazidime and piperacillin/tazobactam and resistant to aztreonam, cefepime, ciprofloxacin, gentamicin, imipenem, levofloxacin, meropenem and tobramycin. NR-51530 was produced by inoculation of BEI Resources seed lot 700214615 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: 70067440**

**Manufacturing Date: 29MAR2024**

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| TEST                                                                                                                                                                                                                                                                                                                                                        | SPECIFICATIONS                                                                                                                                                                                                                                                          | RESULTS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Phenotypic Analysis</b><br>Cellular morphology<br>Colony morphologies <sup>1</sup><br><br>Motility (wet mount)<br>VITEK® 2 (GN card)                                                                                                                                                                                                                     | Gram-negative rods<br>Report results<br><br>Report results<br><i>P. aeruginosa</i> (≥ 89%)                                                                                                                                                                              | Gram-negative rods<br>Colony Type 1: Circular, convex, entire, smooth and cream to green<br>Colony Type 2: Circular, slight peaked, undulate, smooth and cream to green<br>Motile<br><i>P. aeruginosa</i> (99%)                                                                                                                                                                                                                                                                        |
| <b>Antibiotic Susceptibility Profile<sup>2,3</sup></b><br>Amikacin<br>Amoxicillin/clavulanic acid<br>Ampicillin<br>Cefazolin<br>Cefepime<br>Cefoxitin<br>Ceftazidime<br>Ceftriaxone<br>Ciprofloxacin<br>Gentamicin<br>Levofloxacin<br>Meropenem<br>Nitrofurantoin<br>Piperacillin/tazobactam<br>Tetracycline<br>Tobramycin<br>Trimethoprim/sulfamethoxazole | Sensitive<br>Resistant<br>Resistant<br>Resistant<br>Report results<br>Resistant<br>Report results<br>Resistant<br>Resistant<br>Resistant<br>Resistant<br>Resistant<br>Resistant<br>Resistant<br>Resistant<br>Report results<br>Resistant<br>Resistant<br>Report results | Sensitive (4 µg/mL)<br>Resistant (≥ 32 µg/mL)<br>Resistant (≥ 32 µg/mL)<br>Resistant (≥ 64 µg/mL)<br>Sensitive (8 µg/mL) <sup>4</sup><br>Resistant (≥ 64 µg/mL)<br>Sensitive (8 µg/mL) <sup>5</sup><br>Resistant (≥ 64 µg/mL)<br>Resistant (≥ 4 µg/mL)<br>Resistant (≥ 16 µg/mL)<br>Resistant (≥ 8 µg/mL)<br>Resistant (≥ 16 µg/mL)<br>Resistant (≥ 512 µg/mL)<br>Intermediate (32 µg/mL) <sup>6</sup><br>Resistant (≥ 16 µg/mL)<br>Resistant (≥ 16 µg/mL)<br>≥ 320 µg/mL <sup>7</sup> |
| <b>Genotypic Analysis</b><br>Sequencing of 16S ribosomal RNA gene (~ 1470 base pairs)                                                                                                                                                                                                                                                                       | ≥ 99% sequence identity to<br><i>P. aeruginosa</i> , strain MRSN 1739<br>(GenBank: RXVL01000104.1)                                                                                                                                                                      | 100% sequence identity to<br><i>P. aeruginosa</i> , strain MRSN 1739<br>(GenBank: RXVL01000104.1)                                                                                                                                                                                                                                                                                                                                                                                      |

# Certificate of Analysis for NR-51530

| TEST                                                                                                                                  | SPECIFICATIONS                                    | RESULTS                                           |
|---------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------|---------------------------------------------------|
| <b>Purity</b><br>7 days at 37°C in an aerobic atmosphere with 5% CO <sub>2</sub> on Tryptic Soy agar with 5% defibrinated sheep blood | Growth consistent with expected colony morphology | Growth consistent with expected colony morphology |
| <b>Viability</b>                                                                                                                      | Growth                                            | Growth                                            |

<sup>1</sup>Two colony types were observed. VITEK® 2 (GN card) analysis identified cells from both colony types as *P. aeruginosa*.

<sup>2</sup>Minimum 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.

<sup>3</sup>Antibiotic susceptibility was tested using bioMérieux VITEK® 2 GN81.

<sup>4</sup>*P. aeruginosa*, strain MRSN 1739 was deposited as resistant to cefepime, but showed MICs of 4 µg/mL and 8 µg/mL (both interpreted as sensitive) and 16 µg/mL (interpreted as intermediately resistant) for lot 70024614 during QC testing, resulting in an inconclusive result.

<sup>5</sup>*P. aeruginosa*, strain MRSN 1739 was deposited as intermediately resistant to ceftazidime, but showed MICs of 4 µg/mL (interpreted as sensitive) and 16 µg/mL (interpreted as intermediately resistant) for lot 70024614 during QC testing, resulting in an inconclusive result.

<sup>6</sup>*P. aeruginosa*, strain MRSN 1739 was deposited as intermediately resistant to piperacillin/tazobactam, but showed MICs of 16 µg/mL (interpreted as sensitive) and 32 µg/mL (interpreted as intermediately resistant) for lot 70024614 during QC testing, resulting in an inconclusive result.

<sup>7</sup>Trimethoprim/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.

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