

# Pseudomonas aeruginosa, Strain MRSN 2108

## Catalog No. NR-51538

This reagent is the tangible property of the U.S. Government.

## Product Description:

*Pseudomonas aeruginosa* (*P. aeruginosa*), strain MRSN 2108 was isolated in 2011 from a human tissue sample in the United States as part of a global surveillance program. *P. aeruginosa*, strain MRSN 2108 was deposited as multi-locus sequence type (MLST) ST 3037, sensitive to amikacin, gentamicin and tobramycin, intermediately resistant to ceftazidime and piperacillin/tazobactam and resistant to aztreonam, cefepime, ciprofloxacin, imipenem, levofloxacin and meropenem. NR-51538 was produced by inoculation of BEI Resources seed lot 70024948 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: 70072056

Manufacturing Date: 09OCT2024

BEI Resources is committed to ensuring digital accessibility for people with disabilities. This Certificate of Analysis contains complex tables and may not be fully accessible. Please let us know if you encounter accessibility barriers and a fully accessible document will be provided: E-mail: [Contact@BEIResources.org](mailto:Contact@BEIResources.org). We try to respond to feedback within 24 hours.

| TEST                                                                                                                                                                                                               | SPECIFICATIONS                                                                                                                                 | RESULTS                                                                                                                                                                                                                                                                                                 |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Phenotypic Analysis</b><br>Cellular morphology<br>Colony morphologies <sup>1</sup><br><br>Motility (wet mount)<br>VITEK® MS (MALDI-TOF)                                                                         | Gram-negative rods<br>Report results<br><br>Report results<br><i>P. aeruginosa</i>                                                             | Gram-negative rods<br>Colony type 1: Circular, low convex, entire, smooth and cream<br>Colony type 2: Irregular, flat, undulate and opaque<br>Motile<br><i>P. aeruginosa</i> (99.9%)                                                                                                                    |
| <b>Antibiotic Susceptibility Profile</b> <sup>2,3,4</sup><br>Amikacin<br>Cefazolin<br>Cefepime<br>Ceftazidime<br>Ciprofloxacin<br>Gentamicin<br>Levofloxacin<br>Meropenem<br>Piperacillin/tazobactam<br>Tobramycin | Sensitive<br>Resistant<br>Intermediate<br>Report results<br>Report results<br>Sensitive<br>Resistant<br>Resistant<br>Intermediate<br>Sensitive | Sensitive (≤ 2 µg/mL)<br>Resistant (≥ 64 µg/mL)<br>Intermediate (16 µg/mL) <sup>5</sup><br>Intermediate (16 µg/mL) <sup>6</sup><br>Resistant (≥ 4 µg/mL) <sup>7</sup><br>Sensitive (≤ 1 µg/mL)<br>Resistant (≥ 8 µg/mL)<br>Resistant (≥ 16 µg/mL)<br>Inconclusive <sup>8</sup><br>Sensitive (≤ 1 µg/mL) |
| <b>Genotypic Analysis</b><br>Sequencing of 16S ribosomal RNA gene (~ 1460 base pairs)                                                                                                                              | ≥ 99% sequence identity to <i>P. aeruginosa</i> , strain MRSN 2108 (GenBank: RXUS01000042.1)                                                   | 100% sequence identity to <i>P. aeruginosa</i> , strain MRSN 2108 (GenBank: RXUS01000042.1)                                                                                                                                                                                                             |
| <b>Purity</b><br>7 days at 37°C in an aerobic atmosphere with and without 5% CO <sub>2</sub> on Tryptic Soy agar                                                                                                   | 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. Plating of the individual colony types showed that they reverted to the mixed colony type. VITEK® MS (MALDI-TOF) 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 09.02 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 a combination of bioMérieux VITEK® 2 GN81 and ETEST®.

<sup>4</sup>*P. aeruginosa* and other nonfermentative gram-negative bacteria are intrinsically resistant to penicillin, cephalosporins I, cephalosporin II, cephamycins, clindamycin, daptomycin, fusidic acid, glycopeptides, linezolid, macrolides, quinupristin-dalfopristin, and rifampin. These antibiotics were removed from the VITEK® 2 GN81 card and are no longer tested: ampicillin, amoxicillin, amoxicillin/clavulanic acid, ceftriaxone, cefuroxime, ertapenem, tetracycline, tigecycline, trimethoprim/sulfamethoxazole, chloramphenicol and nitrofurantoin.

<sup>5</sup>*P. aeruginosa*, strain MRSN 2108 was deposited as resistant to cefepime, but showed a MIC of 16 µg/mL (interpreted as intermediately resistant) for lot 70024948 during QC testing.

<sup>6</sup>*P. aeruginosa*, strain MRSN 2108 was deposited as intermediately resistant to ceftazidime but showed MICs of 16 µg/mL (interpreted as intermediately resistant) and 32 µg/mL (interpreted as resistant) for lot 70024948 during QC testing, resulting in an inconclusive result.

<sup>7</sup>*P. aeruginosa*, strain MRSN 2108 was deposited as resistant to ciprofloxacin but showed MICs of ≤ 1 µg/mL (interpreted as sensitive), 2 µg/mL (interpreted as intermediately resistant) and 4 µg/mL (interpreted as resistant) for lot 70024948 during QC testing, resulting in an inconclusive result. QC testing of lot 70072056 showed MICs of 64 µg/mL (interpreted as intermediately resistant) and 128 µg/mL (interpreted as resistant), resulting in an inconclusive result. Testing was performed in duplicate.

<sup>8</sup>*P. aeruginosa*, strain MRSN 2108 was deposited as intermediately resistant to piperacillin/tazobactam but showed MICs of 64 µg/mL (interpreted as intermediately resistant) and 128 µg/mL (interpreted as resistant) for lot 70072056 during QC testing, resulting in an inconclusive result. Testing was performed in duplicate.

/Sonia Bjorum Brower/

Sonia Bjorum Brower

19 MAY 2025

Technical Manager or designee, ATCC Federal Solutions

ATCC®, on behalf of BEI Resources, hereby represents and warrants that the material provided under this certificate has been subjected to the tests and procedures specified and that the results described, along with any other data provided in this certificate, are true and accurate to the best of ATCC®'s knowledge.

ATCC® is a trademark of the American Type Culture Collection.

You are authorized to use this product for research use only. It is not intended for human use.

