

***Pseudomonas aeruginosa*, Strain P179**

Catalog No. NR-31041

Product Description: *Pseudomonas aeruginosa* (*P. aeruginosa*), strain P179 was isolated in or before 1983 from a human subject in Cincinnati, Ohio, USA.

Lot¹: 70002169

Manufacturing Date: 03FEB2017

TEST	SPECIFICATIONS	RESULTS
Phenotypic Analysis Cellular morphology Colony morphology ² 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 green (Figure 1) Motile <i>P. aeruginosa</i> (99.9%)
Antibiotic Susceptibility Profile VITEK® (AST-GN81 Card) ³ Ampicillin Amoxicillin/Clavulanic Acid Piperacillin/Tazobactam Cefazolin Cefoxitin Ceftazidime Ceftriaxone Cefepime Meropenem Amikacin Gentamicin Tobramycin Ciprofloxacin Levofloxacin Tetracycline Nitrofurantoin Trimethoprim/Sulfamethoxazole Etest® antibiotic test strips ⁴ Gentamicin ⁵ Ofloxacin ⁵ Rifampicin ⁶ Streptomycin ⁷ Trimethoprim/sulfamethoxazole ⁸	Report results Report results Report results Report results Report results Report results Report results Report results Report results Report results Report results Report results Resistant Report results Report results Report results Report results Report results Resistant Resistant Report results Sensitive Resistant Resistant	Resistant (≥ 32 µg/mL) Resistant (≥ 32 µg/mL) Sensitive (= 8 µg/mL) Resistant (≥ 64 µg/mL) Resistant (≥ 64 µg/mL) Sensitive (= 4 µg/mL) Resistant (≥ 64 µg/mL) Sensitive (= 8 µg/mL) Sensitive (= 1 µg/mL) Sensitive (= 8 µg/mL) Resistant (≥ 16 µg/mL) Sensitive (≤ 1 µg/mL) Sensitive (≤ 0.25 µg/mL) Sensitive (= 1 µg/mL) Resistant (≥ 16 µg/mL) Resistant (≥ 512 µg/mL) Resistant (≥ 320 µg/mL) Resistant (= 256 µg/mL) Sensitive (= 1.5 µg/mL) 32 µg/mL 1024 µg/mL 32 µg/mL ⁹
Genotypic Analysis Sequencing of 16S ribosomal RNA gene (~ 1530 base pairs) Digital DNA-DNA hybridization (dDDH) ¹⁰	≥ 99% sequence identity to <i>P. aeruginosa</i> , strain P179 (GenBank: AQFO01000027.1) ≥ 70% for species identification	100% sequence identity to <i>P. aeruginosa</i> , strain P179 (GenBank: AQFO01000027.1) <i>P. aeruginosa</i> (93.5%) ¹¹
Purity (post-freeze)¹²	Growth consistent with expected colony morphology	Growth consistent with expected colony morphology
Viability (post-freeze)²	Growth	Growth

¹NR-31041 was produced by inoculation of the deposited material into Nutrient broth and grown for 1 day at 37°C in an aerobic atmosphere. Broth inoculum was added to Nutrient agar kolles, which were grown for 1 day at 37°C in an aerobic atmosphere to produce this lot.

²1 day at 37°C in an aerobic atmosphere on Nutrient agar

³Minimum 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-S22 (2012) 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.

⁴1 day at 37°C in an aerobic atmosphere on Mueller Hinton agar

⁵Minimum Inhibitory Concentration (MIC); MIC interpretation guidelines CLSI M100-S22 (2012)

⁶Rifampicin MIC interpretive standards are not available for *P. aeruginosa*. Strain P179 is reported to be rifampicin-sensitive and does not grow in media containing rifampicin at a concentration of 100 µg/mL. For more information, please refer to Jacoby, G. A., et. al. "Properties of IncP-2 Plasmids of *Pseudomonas* spp." *Antimicrob. Agents Chemother.* 24 (1983): 168-175. PubMed: 6638986.

⁷Streptomycin MIC interpretive standards are not available for *P. aeruginosa*. Strain P179 contains IncP-2 plasmid pMG43, which confers resistance toward gentamicin, streptomycin and sulfonamides. Although strain P179 can grow in the presence of a high level of streptomycin, BEI Resources did not confirm the presence of pMG43 by molecular methods. For more information, please refer to Jacoby, G. A., et. al. "Properties of IncP-2 Plasmids of *Pseudomonas* spp." *Antimicrob. Agents Chemother.* 24 (1983): 168-175. PubMed: 6638986.

⁸Trimethoprim/sulfamethoxazole MIC interpretive standards are not available for *P. aeruginosa*; however most clinical isolates are resistant to trimethoprim/sulfamethoxazole. Strain P179 contains IncP-2 plasmid pMG43, which confers resistance toward gentamicin, streptomycin and sulfonamides. Although strain P179 can grow in the presence of a high level of trimethoprim/sulfamethoxazole, BEI Resources did not confirm the presence of pMG43 by molecular methods. For more information, please refer to Jacoby, G. A., et. al. "Properties of IncP-2 Plasmids of *Pseudomonas* spp." *Antimicrob. Agents Chemother.* 24 (1983): 168-175. PubMed: 6638986 and 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.

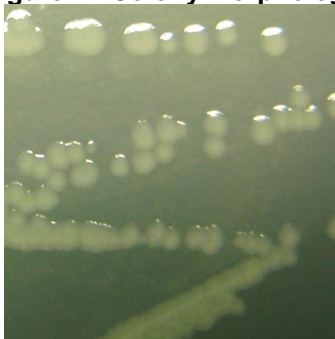
⁹MIC result is based on the trimethoprim component of the test strip.

¹⁰Relatedness between bacterial strains has traditionally been determined using DDH. For additional information, please refer to Auch, A.F., et al. "Digital DNA-DNA Hybridization for Microbial Species Delineation by Means of Genome-to-Genome Sequence Comparison." *Stand. Genomic Sci.* 2 (2010): 117-134. PubMed: 21304684.

¹¹The whole genome of *P. aeruginosa*, strain P179 (Contig Total Length ~ 6.7 megabase pairs) was sequenced using the Illumina® MiSeq® system and was assembled and analyzed with CLC Genomics Workbench Version 7.0.2.

¹²Purity of this lot was assessed for 7 days on Nutrient agar at 37°C in an aerobic atmosphere with 5% CO₂.

Figure 1: Colony Morphology



Date: 28 SEP 2017

Signature:

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