b|e|i RESOURCES

SUPPORTING INFECTIOUS DISEASE RESEARCH

Certificate of Analysis for NR-31041

Pseudomonas aeruginosa, Strain P179

Catalog No. NR-31041

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

Product Description:

Pseudomonas aeruginosa (P. aeruginosa), strain P179 was isolated in or before 1983 from a human subject in Cincinnati, Ohio, USA. NR-31041 was produced by inoculation of BEI Resources seed lot 70002170 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. Quality control testing was completed under propagation conditions unless otherwise noted.

Lot: 70044524 **Manufacturing Date: 21MAY2021**

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TEST	SPECIFICATIONS	RESULTS
Phenotypic Analysis		
Cellular morphology	Gram-negative rods	Gram-negative rods
Colony morphology	Report results	Circular, convex, entire, smooth and green (Figure 1)
Motility	Report results	Motile
VITEK® MS (MALDI-TOF)	*P. aeruginosa*	*P. aeruginosa* (99.9%)
Antibiotic Susceptibility Profile		
VITEK® (AST-GN81 Card)[1]		
Amikacin	Sensitive	Sensitive (4 µg/mL)
Amoxicillin/Clavulanic Acid	Resistant	Resistant (≥ 32 µg/mL)
Ampicillin	Resistant	Resistant (≥ 32 µg/mL)
Piperacillin/Tazobactam	Sensitive	Sensitive (8 µg/mL)
Cefazolin	Resistant	Resistant (≥ 64 µg/mL)
Cefoxitin	Resistant	Resistant (≥ 64 µg/mL)
Ceftazidime	Sensitive	Sensitive (4 µg/mL)
Ceftriaxone	Resistant	Resistant (≥ 64 µg/mL)
Ciprofloxacin	Sensitive	Sensitive (≤ 0.25 µg/mL)
Gentamicin	Resistant	Resistant (≥ 16 µg/mL)
Meropenem	Sensitive	Sensitive (1 µg/mL)
Levofloxacin	Sensitive	Sensitive (0.5 to 1 µg/mL)
Nitrofurantoin	Resistant	Resistant (≥ 512 µg/mL)
Trimethoprim/sulfamethoxazole	Resistant	Resistant (≥ 320 µg/mL)
Tobramycin	Sensitive	Sensitive (≤ 1 µg/mL)
Tetracycline	Resistant	Resistant (≥ 16 µg/mL)
Etest® antibiotic test strips[2]		
Cefepime	Sensitive	Sensitive (8 µg/mL)
Gentamicin[3]	Resistant	Resistant (> 256 µg/mL)
Ofloxacin[3]	Sensitive	Intermediate (3 µg/mL)[4]
Rifampin[5]	Sensitive	> 32 µg/mL
Streptomycin[6]	Resistant	> 1024 µg/mL
Trimethoprim/sulfamethoxazole[7]	Resistant	> 32 µg/mL[8]
Genotypic Analysis		
Sequencing of 16S ribosomal RNA gene (~ 1470 base pairs)	≥ 99% sequence identity to *P. aeruginosa,* strain P179 (GenBank: AQFO01000027.1)	100% sequence identity to *P. aeruginosa,* strain P179 (GenBank: AQFO01000027.1)

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TEST	SPECIFICATIONS	RESULTS
Purity 7 days at 37°C in an aerobic atmosphere with 5% CO_2 on Tryptic Soy agar with 5% defibrinated sheep blood	Growth consistent with expected colony morphology	Growth consistent with expected colony morphology
Viability	Growth	Growth

[1]Minimum Inhibitory Concentration (MIC); MIC interpretation was determined using VITEK® 2 software version 09.01 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.

[2]1 day at 37°C in an aerobic atmosphere on Mueller-Hinton agar

[3]Minimum Inhibitory Concentration (MIC); MIC Interpretation Guideline: CLSI M100-S28 (2018)

[4]The susceptibility result for this antibiotic is within one doubling dilution of specification, which is considered an equivalent result.

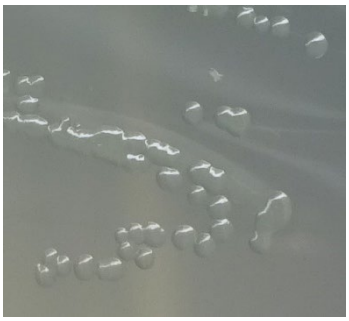
[5]Rifampin MIC interpretive standards are not available for *P. aeruginosa*. Strain P179 is reported to be rifampin-sensitive and does not grow in media containing rifampin at a concentration of 100 µg/mL. For more information, please refer to Jacoby, G. A., et. al. "Properties of IncP-2 Plasmids of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

[6]Streptomycin 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.

[7]Trimethoprim/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.

[8]MIC result is based on the trimethoprim component of the test strip.

Figure 1: Colony Morphology



/Sonia Bjorum Brower/
Sonia Bjorum Brower 08 FEB 2023
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.

Support Provided by NIAID

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