Certificate of Analysis for NR-51563

Pseudomonas aeruginosa, Strain MRSN 9873

Catalog No. NR-51563

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

Product Description:

Pseudomonas aeruginosa (P. aeruginosa), strain MRSN 9873 was isolated in 2012 from a human urine sample in the United States as part of a global surveillance program. *P. aeruginosa*, strain MRSN 9873, was deposited as multi-locus sequence type (MLST) ST 3045, sensitive to amikacin, aztreonam, ciprofloxacin, levofloxacin and piperacillin/tazobactam and resistant to cefepime, ceftazidime, gentamicin, imipenem, meropenem and tobramycin. NR-51563 was produced by inoculation of BEI Resources seed lot 70025004 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: 70064245 **Manufacturing Date: 01NOV2023**

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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 cream (Figure 1)
Motility (wet mount)	Report results	Motile
VITEK® 2 (GN card)	*P. aeruginosa* (≥ 89%)	*P. aeruginosa* (99%)
Antibiotic Susceptibility Profile[1,2]		
Amikacin	Sensitive	Sensitive (4 µg/mL)
Amoxicillin/clavulanic acid	Resistant	Resistant (≥ 32 µg/mL)
Ampicillin	Resistant	Resistant (≥ 32 µg/mL)
Cefazolin	Resistant	Resistant (≥ 64 µg/mL)
Cefepime	Intermediate	Intermediate (16 µg/mL)[3]
Cefoxitin	Resistant	Resistant (≥ 64 µg/mL)
Ceftazidime	Resistant	Resistant (≥ 64 µg/mL)
Ceftriaxone	Resistant	Resistant (≥ 64 µg/mL)
Ciprofloxacin	Sensitive	Sensitive (≤ 0.25 µg/mL)
Gentamicin	Resistant	Resistant (≥ 16 µg/mL)
Levofloxacin	Sensitive	Sensitive (2 µg/mL)
Meropenem	Resistant	Resistant (≥ 16 µg/mL)
Nitrofurantoin	Resistant	Resistant (≥ 512 µg/mL)
Piperacillin/tazobactam	Sensitive	Sensitive (8 µg/mL)
Tetracycline	Resistant	Resistant (≥ 16 µg/mL)
Tobramycin	Resistant	Resistant (≥ 16 µg/mL)
Trimethoprim/sulfamethoxazole	Report results	≥ 320 µg/mL[4]
Genotypic Analysis		
Sequencing of 16S ribosomal RNA gene (~ 1430 base pairs)	≥ 99% sequence identity to *P. aeruginosa*, strain MRSN 9873 (GenBank: RXSY01000129.1)	100% sequence identity to *P. aeruginosa*, strain MRSN 9873 (GenBank: RXSY01000129.1)
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

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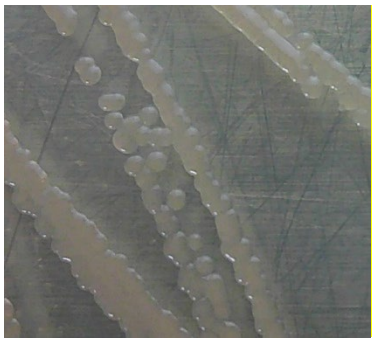
TEST	SPECIFICATIONS	RESULTS
Viability	Growth	Growth

[1]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.
[2]Antibiotic susceptibility was tested using bioMérieux VITEK® 2 GN81.
[3]*P. aeruginosa*, strain MRSN 9873 was deposited as resistant to cefepime, but showed a MIC of 16 µg/mL (interpreted as intermediately resistant) for lot 70025003 during QC testing.
[4]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.

Figure 1: Colony Morphology



/Sonia Bjorum Brower/
Sonia Bjorum Brower 19 FEB 2024
Technical Manager or designee, ATCC Federal Solutions

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Support Provided by NIAID

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