

# **Certificate of Analysis for NR-55575**

## Klebsiella pneumoniae, Strain MRSN 581745

### Catalog No. NR-55575

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

## **Product Description:**

Klebsiella pneumoniae (K. pneumoniae), strain MRSN 581745 was isolated in 2018 from a human urine sample in Asia as part of a global surveillance program. NR-55575 was deposited as an extensively drug-resistant strain (XDR), sensitive to amikacin and gentamicin, intermediately resistant to levofloxacin and meropenem, and resistant to ampicillin/sulbactam, aztreonam, cefepime, ceftazidime, ceftazidime/avibactam, ceftolozane/tazobactam, ceftriaxone, ciprofloxacin, ertapenem, imipenem, piperacillin/tazobactam, tetracycline, tigecycline, tobramycin and trimethoprim/sulfamethoxazole. NR-55575 was produced by inoculation of the deposited material 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: 70051120 Manufacturing Date: 18MAR2022

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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, mucoid and cream (Figure 1)
Motility (wet mount)	Report results	Non-motile
VITEK <sup>®</sup> 2 (GN card)	K. pneumoniae (≥ 89%)	K. pneumoniae (95%)
VITEK® MS (MALDI-TOF)	K. pneumoniae	K. pneumoniae (99.9%)
Antibiotic Susceptibility Profile <sup>1,2</sup>		
Amikacin	Sensitive	Sensitive (≤ 2 µg/mL)
Ampicillin/sulbactam	Resistant	Resistant (≥ 32 µg/mL)
Aztreonam	Resistant	Resistant (≥ 64 µg/mL)
Cefepime	Resistant	Resistant (≥ 64 µg/mL)
Ceftazidime	Resistant	Resistant (≥ 64 µg/mL)
Ceftazidime/avibactam	Resistant	Resistant (> 256 µg/mL)
Ceftolozane/tazobactam	Resistant	Resistant (> 256 µg/mL)
Ceftriaxone	Resistant	Resistant (≥ 64 µg/mL)
Ciprofloxacin	Resistant	Resistant (> 32 µg/mL)
Ertapenem	Resistant	Resistant (≥ 8 μg/mL)
Gentamicin	Sensitive	Sensitive (≤ 1 µg/mL)
Imipenem	Resistant	Resistant (> 32 µg/mL)
Levofloxacin	Intermediate	Intermediate (4 µg/mL)
Meropenem	Intermediate	Resistant (> 32 µg/mL) <sup>3</sup>
Piperacillin/tazobactam	Resistant	Resistant ≥ 128 μg/mL)
Tetracycline	Resistant	Resistant (≥ 16 µg/mL)
Tigecycline	Resistant	Resistant (≥ 8 μg/mL) <sup>4</sup>
Tobramycin	Resistant	Resistant (≥ 16 µg/mL)
Trimethoprim/sulfamethoxazole	Resistant	Resistant (≥ 320 µg/mL)
Genotypic Analysis		
Sequencing of 16S ribosomal RNA gene (~ 1470 base pairs)	≥ 99% sequence identity to  K. pneumoniae, strain MRSN 581745 (GenBank: JAGYCK010000159.1)	99.6% sequence identity to  K. pneumoniae, strain MRSN 581745 (GenBank: JAGYCK010000159.1) <sup>5</sup>

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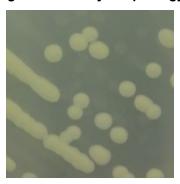


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TEST	SPECIFICATIONS	RESULTS
Purity 7 days at 37°C in an aerobic atmosphere with and without 5% CO <sub>2</sub> on Tryptic Soy agar		Growth consistent with expected colony morphology
Viability	Growth	Growth

<sup>&</sup>lt;sup>1</sup>Minimum Inhibitory Concentration (MIC); MIC Interpretation Guideline: CLSI M100-S28 (2018)

Figure 1: Colony Morphology



/Heather Couch/

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Program Manager or designee, ATCC Federal Solutions

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<sup>&</sup>lt;sup>2</sup>Antibiotic susceptibility was tested using a combination of bioMérieux VITEK®2 GN74 and ETÉST®.

<sup>&</sup>lt;sup>3</sup>K. pneumoniae, strain MRSN 581745 was deposited as intermediately resistant to meropenem, but showed a MIC of >32 μg per mL (interpreted as resistant) for this antibiotic during QC testing. Testing was performed in duplicate.

<sup>&</sup>lt;sup>4</sup>MIC Interpretation Guideline: EUCAST Version 8.0 (2018)

<sup>&</sup>lt;sup>5</sup>Also consistent with other Klebsiella species