

Certificate of Analysis for NR-55530

Klebsiella pneumoniae, Strain MRSN 22232

Catalog No. NR-55530

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

Product Description:

Klebsiella pneumoniae (K. pneumoniae), strain MRSN 22232 was isolated in 2013 from a human respiratory sample in South America as part of a global surveillance program. NR-55530 was deposited as an extensively drug-resistant strain, sensitive to amikacin, ceftazidime/avibactam, ertapenem, imipenem, levofloxacin, meropenem and tigecycline, intermediately resistant to ciprofloxacin and piperacillin/tazobactam, and resistant to ampicillin/sulbactam, aztreonam, cefepime, ceftazidime, ceftolozane/tazobactam, ceftriaxone, gentamicin, tetracycline, trimethoprim/sulfamethoxazole and tobramycin. NR-55530 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: 70050356 Manufacturing Date: 17FEB2022

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TEST	SPECIFICATIONS	RESULTS
Phenotypic Analysis		
Cellular morphology	Gram-negative rods	Gram-negative rods
Colony morphology	Report results	Circular, convex, entire, mucoid, smooth and cream (Figure 1)
Motility (wet mount)	Report results	Non-motile
VITEK® 2 (GN card)	K. pneumoniae (≥ 89%)	K. pneumoniae (99%)
Antibiotic Susceptibility Profile ^{1,2}		
Amikacin	Sensitive	Sensitive (≤ 2 μg/mL)
Ampicillin/sulbactam	Resistant	Resistant (≥ 32 µg/mL)
Aztreonam	Resistant	Resistant (≥ 64 µg/mL)
Cefepime	Resistant	Resistant (16 to 64 µg/mL)
Ceftazidime	Resistant	Resistant (16 µg/mL)
Ceftazidime/avibactam	Sensitive	Sensitive (0.25 µg/mL)
Ceftolozane/tazobactam	Resistant	Sensitive (0.38 µg/mL) ³
Ceftriaxone	Resistant	Resistant (≥ 64 µg/mL)
Ciprofloxacin	Intermediate	Intermediate (2 µg/mL)
Ertapenem	Sensitive	Sensitive (≤ 0.5 μg/mL)
Gentamicin	Resistant	Resistant (≥ 16 µg/mL)
Imipenem	Sensitive	Sensitive (0.25 µg/mL)
Levofloxacin	Sensitive	Sensitive (1 µg/mL)
Meropenem	Sensitive	Sensitive (≤ 0.25 μg/mL)
Piperacillin/tazobactam	Intermediate	Intermediate (64 to 96 µg/mL)
Tetracycline	Resistant	Resistant (≥ 16 µg/mL)
Tigecycline	Sensitive	Sensitive (1 µg/mL) ⁴
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 22232 (GenBank: JAGYEC010000097.1)	99.5% sequence identity to K. pneumoniae, strain MRSN 22232 (GenBank: JAGYEC010000097.1) ⁵

BEI Resources www.beiresources.org E-mail: contact@beiresources.org

Tel: 800-359-7370 Fax: 703-365-2898

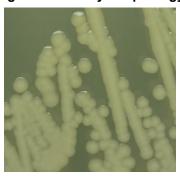


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TEST	SPECIFICATIONS	RESULTS
Purity 7 days at 37°C in an aerobic atmosphere with and without 5% CO ₂ on Tryptic Soy agar	<u> </u>	Growth consistent with expected colony morphology
Viability	Growth	Growth

¹Minimum Inhibitory Concentration (MIC); MIC Interpretation Guideline: CLSI M100-S28 (2018)

Figure 1: Colony Morphology



/Sonia Bjorum Brower/ Sonia Bjorum Brower

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Lead Technical Writer or designee, ATCC Federal Solutions

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BEI Resources www.beiresources.org E-mail: contact@beiresources.org
Tel: 800-359-7370

Fax: 703-365-2898

²Antibiotic susceptibility was tested using a combination of bioMérieux VITEK®2 GN74 and ETEST®.

³K. pneumoniae, strain MRSN 22232 was deposited as resistant to ceftolozane/tazobactam, but showed a MIC of 0.38 μg per mL (interpreted as sensitive) for this antibiotic during QC testing. Testing was performed in duplicate.

⁴MIC Interpretation Guideline: EUCAST Version 8.0 (2018)

⁵Also consistent with other *Klebsiella* species