Certificate of Analysis for NR-55539

Klebsiella pneumoniae, Strain MRSN 28183

Catalog No. NR-55539

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Product Description:

Klebsiella pneumoniae (K. pneumoniae), strain MRSN 28183 was isolated in 2008 from a human respiratory sample in North America as part of a global surveillance program. NR-55539 was deposited as an extensively drug-resistant strain, sensitive to amikacin, ceftazidime/avibactam, ertapenem, gentamicin, imipenem, meropenem and tigecycline, intermediately resistant to piperacillin/tazobactam and resistant to ampicillin/sulbactam, aztreonam, cefepime, ceftazidime, ceftolozane/tazobactam, ceftriaxone, ciprofloxacin, levofloxacin, tetracycline, tobramycin and trimethoprim/sulfamethoxazole. NR-55539 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: 70050375 **Manufacturing Date: 11FEB2022**

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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	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	Sensitive (≤ 1 µg/mL)[3]
Ceftazidime	Resistant	Resistant (≥ 64 µg/mL)
Ceftazidime/avibactam	Sensitive	Sensitive (0.25 µg/mL)
Ceftolozane/tazobactam	Resistant	Sensitive (0.19 µg/mL)[4]
Ceftriaxone	Resistant	Resistant (8 µg/mL)
Ciprofloxacin	Resistant	Resistant (≥ 32 µg/mL)
Ertapenem	Sensitive	Sensitive (≤ 0.5 µg/mL)
Gentamicin	Sensitive	Sensitive (≤ 1 µg/mL)
Imipenem	Sensitive	Sensitive (0.25 to 0.38 µg/mL)
Levofloxacin	Resistant	Resistant (≥ 8 µg/mL)
Meropenem	Sensitive	Sensitive (≤ 0.25 µg/mL)
Piperacillin/tazobactam	Intermediate	Intermediate (24 µg/mL)
Tetracycline	Resistant	Resistant (≥ 16 µg/mL)
Tigecycline	Sensitive	Resistant (2 µg/mL)[5,6]
Tobramycin	Resistant	Inconclusive (4 to 6 µg/mL)[7]
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 28183 (GenBank: JAGYDU010000101.1)	99.5% sequence identity to *K. pneumoniae*, strain MRSN 28183 (GenBank: JAGYDU010000101.1)[8]

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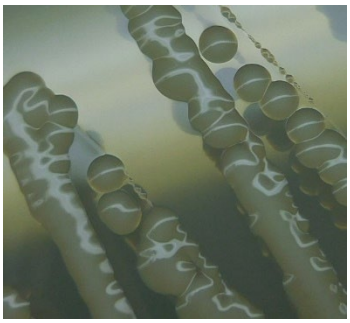
TEST	SPECIFICATIONS	RESULTS
Purity 7 days at 37°C in an aerobic atmosphere with and without 5% CO_2 on Tryptic Soy agar	Growth consistent with expected colony morphology	Growth consistent with expected colony morphology
Viability	Growth	Growth

[1]Minimum Inhibitory Concentration (MIC); MIC Interpretation Guideline: CLSI M100-S28 (2018)
[2]Antibiotic susceptibility was tested using a combination of bioMérieux VITEK®2 GN74 and ETEST®.
[3]*K. pneumoniae*, strain MRSN 28183 was deposited as resistant to cefepime, but showed a MIC of ≤ 1 µg per mL (interpreted as sensitive) for this antibiotic during QC testing. Testing was performed in duplicate.
[4]*K. pneumoniae*, strain MRSN 28183 was deposited as resistant to ceftolozane/tazobactam, but showed a MIC of 0.19 µg per mL (interpreted as sensitive) for this antibiotic during QC testing. Testing was performed in duplicate.
[5]MIC Interpretation Guideline: EUCAST Version 8.0 (2018)
[6]The susceptibility result for this antibiotic is within one doubling dilution of specification, which is considered an equivalent result.
[7]*K. pneumoniae*, strain MRSN 28183 was deposited as resistant to tobramycin, but showed a MIC of 4 µg per mL and 6 µg per mL (interpreted as sensitive and intermediate, respectively) for this antibiotic during QC testing. Testing was performed in duplicate.
[8]Also consistent with other *Klebsiella* species

Figure 1: Colony Morphology



/Sonia Bjorum Brower/
Sonia Bjorum Brower 30 JUL 2022
Lead Technical Writer or designee, ATCC Federal Solutions

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Support Provided by NIAID

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