Certificate of Analysis for NR-48559

Klebsiella pneumoniae, Strain UCI 19

Catalog No. NR-48559

Product Description: *Klebsiella pneumoniae* (*K. pneumoniae*), strain UCI 19 was isolated in 2013 from the urine of an ICU human patient in Irvine, California, USA. *K. pneumoniae*, strain UCI 19 was deposited as a carbapenem-resistant strain and is part of a Carbapenem Resistant Enterobacteriaceae (CRE) Sequencing Project at the Broad Institute. Strain UCI 19 was also deposited as resistant to meropenem, ampicillin, ampicillin/sulbactam, cefazolin, ceftazidime, ceftriaxone, cefepime, ertapenem, imipenem, ciprofloxacin, levofloxacin, nitrofurantoin and tigecycline, intermediately susceptible to amikacin and susceptible to gentamicin and trimethoprim/ sulfamethoxazole.

Lot[1]: 70006295 **Manufacturing Date: 22JUN2017**

TEST	SPECIFICATIONS	RESULTS
Phenotypic Analysis		
Cellular morphology	Gram-negative rods	Gram-negative rods
Colony morphology[2]	Report results	Circular, convex, entire, smooth and cream (Figure 1)
Motility (wet mount)	Report results	Non-motile
VITEK® 2 Compact (GN card)	≥ 90% probability of being *K. pneumoniae*	*K. pneumoniae* (99% probability)[3]
Antibiotic Susceptibility Profile		
VITEK® (AST-GN69)[4]		
ESBL[5,6]	Report results	Negative
Ampicillin	Resistant	Resistant (≥ 32 µg/mL)
Amoxicillin/clavulanic Acid	Report results	Resistant (≥ 32 µg/mL)
Ampicillin/sulbactam	Resistant	Resistant (≥ 32 µg/mL)
Piperacillin/tazobactam	Report results	Resistant (≥ 128 µg/mL)
Cefazolin	Resistant	Resistant (≥ 64 µg/mL)
Ceftazidime	Resistant	Resistant (≥ 64 µg/mL)
Ceftriaxone	Resistant	Resistant (≥ 64 µg/mL)
Cefepime	Resistant	Resistant (≥ 64 µg/mL)
Ertapenem	Resistant	Resistant (≥ 8 µg/mL)
Imipenem	Resistant	Resistant (≥ 16 µg/mL)
Gentamicin	Sensitive	Sensitive (≤ 1 µg/mL)
Tobramycin	Report results	Resistant (≥ 16 µg/mL)
Ciprofloxacin	Resistant	Resistant (≥ 4 µg/mL)
Levofloxacin	Resistant	Resistant (≥ 8 µg/mL)
Nitrofurantoin	Resistant	Resistant (= 256 µg/mL)
Trimethoprim/sulfamethoxazole	Sensitive	Sensitive (≤ 20 µg/mL)
Genotypic Analysis		
Sequencing of 16S ribosomal RNA gene (~ 760 base pairs)	≥ 99% sequence identity to *K. pneumoniae*, strain UCI 19 (GenBank: JCMK01000003.1)	99.3% sequence identity to *K. pneumoniae*, strain UCI 19 (GenBank: JCMK01000003.1)
Purity (post-freeze)[7]	Growth consistent with expected colony morphology	Growth consistent with expected colony morphology
Viability (post-freeze)[2]	Growth	Growth

[1]NR-48559 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.
[2]1 day at 37°C in an aerobic atmosphere on Tryptic Soy agar
[3]Percent probabilities above 90% indicate a close match to the typical biochemical pattern for the given organism, with a percent probability of 99% being a perfect match between the test reaction pattern and the unique biochemical pattern of the given organism or organism group. For additional information, please refer to O'Hara, C. M. and J. M. Miller. "Evaluation of the VITEK 2 ID-GNB Assay for Identification of Members of the Family

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Enterobacteriaceae and Other Nonenteric Gram-Negative Bacilli and Comparison with the VITEK GNI+ Card." J. Clin. Microbiol. 41 (2003): 2096-2101. PubMed: 12734254.

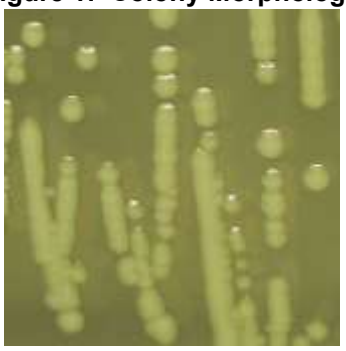
[4]Minimum Inhibitory Concentration (MIC); MIC Interpretation Guideline: CLSI M100-S22 (2012)

[5]The VITEK® 2 ESBL Test is a confirmatory test for Extended-Spectrum Beta-Lactamases (ESBLs) inhibited by clavulanic acid and utilizes cefepime, cefotaxime and ceftazidime, with and without clavulanic acid, to determine a positive or negative result.

[6]A negative ESBL test does not rule out the presence of an ESBL, as there are many types of ESBL that may not be covered with this card. Furthermore, the ESBL phenotype may be masked by an AmpC β-lactamase. For more information, refer to Gniadkowski, M. "Evolution and Epidemiology of Extended-Spectrum β-Lactamases (ESBLs) and ESBL-Producing Microorganisms." Clin. Microbiol. Infect. 7 (2001): 597-608. PubMed: 11737084.

[7]Purity of this lot was assessed for 7 days at 37°C in an aerobic atmosphere with 5% CO_2 on Tryptic Soy agar.

Figure 1: Colony Morphology



Date: 11 OCT 2017 **Signature:**

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