

***Klebsiella pneumoniae*, Strain VA360**

Catalog No. NR-48977

Product Description: *K. pneumoniae*, strain VA360 was deposited as a multidrug resistant (MDR) strain with resistance to ampicillin, amoxicillin/clavulanic acid, aztreonam, cefazolin, cephalothin, chloramphenicol, gentamicin, ciprofloxacin, cefotaxime, ceftazidime, ceftriaxone, cefuroxime, cefepime, ceftoxitin, doripenem, ertapenem, imipenem, levofloxacin, piperacillin, meropenem, nalidixic acid and trimethorpin/sulfamethoxadole. Strain VA360 was also deposited as positive for the β-lactamase genes TEM-1, KPC-2, SHV-11, SHV-12 and the *K. pneumoniae* carbapenemase (KPC) gene.

Lot¹: 70010080

Manufacturing Date: 10NOV2017

TEST	SPECIFICATIONS	RESULTS
Phenotypic Analysis Cellular morphology Colony morphology ² Motility (wet mount) Biochemical characterization VITEK [®] 2 Compact (GN card)	Gram-negative bacilli Report results Report results <i>K. pneumoniae</i> (≥ 89%)	Gram-negative bacilli Circular, convex, entire, smooth and cream (Figure 1) Non-motile <i>K. pneumonia</i> (99%) ³
Antibiotic Susceptibility Profile VITEK [®] (AST-GN69) ⁴ ESBL ^{5,6} Ampicillin Amoxicillin/clavulanic Acid Ampicillin/sulbactam Piperacillin/tazobactam Cefazolin Ceftazidime Ceftriaxone Cefepime Ertapenem Imipenem Gentamicin Tobramycin Ciprofloxacin Levofloxacin Nitrofurantoin Trimethoprim/sulfamethoxazole VITEK [®] (AST-XN06) ⁷ Amikacin Aztreonam Cefalotin Cefuroxime Cefuroxime Axetil Cefotetan Ceftoxitin Cefpodoxime Cefotaxime Ceftizoxime Doripenem Meropenem Moxifloxacin	Negative Resistant Intermediate Resistant Resistant Resistant Resistant Resistant Resistant Resistant Resistant Resistant Resistant Resistant Resistant Resistant Resistant Resistant Resistant Resistant Resistant	Negative Resistant (≥ 32 µg/mL) Resistant (≥ 32 µg/mL) Resistant (≥ 32 µg/mL) Resistant (≥ 128 µg/mL) Resistant (≥ 64 µg/mL) Resistant (≥ 64 µg/mL) Resistant (≥ 64 µg/mL) Resistant (≥ 64 µg/mL) Resistant (= 8 µg/mL) Resistant (≥ 16 µg/mL) Resistant (≥ 16 µg/mL) Resistant (≥ 16 µg/mL) Resistant (≥ 4 µg/mL) Resistant (≥ 8 µg/mL) Resistant (= 256 µg/mL) Resistant (≥ 320 µg/mL) Intermediate (= 32 µg/mL) Resistant (≥ 64 µg/mL) Resistant (≥ 64 µg/mL) Resistant (≥ 64 µg/mL) Resistant (≥ 64 µg/mL) Resistant (≥ 64 µg/mL) Resistant (≥ 64 µg/mL) Resistant (≥ 64 µg/mL) Resistant (≥ 8 µg/mL) Resistant (≥ 64 µg/mL) Resistant (≥ 64 µg/mL) Resistant (≥ 8 µg/mL) Resistant (≥ 64 µg/mL) Resistant (≥ 8 µg/mL) Resistant (≥ 16 µg/mL) Resistant (≥ 16 µg/mL) Resistant (≥ 8 µg/mL)

TEST	SPECIFICATIONS	RESULTS
Antibiotic Susceptibility Profile (continued) VITEK® (AST-XN06) ⁷ Nalidixic Acid Norfloxacin Piperacillin Tetracycline Ticarcillin Tigecycline Etest® antibiotic test strips ⁸ Chloramphenicol ⁴	Resistant Resistant Resistant Sensitive Resistant Sensitive Resistant	Resistant (≥ 32µg/mL) Resistant (≥ 16 µg/mL) Resistant (≥ 128 µg/mL) Sensitive (= 4 µg/mL) Resistant (≥ 128 µg/mL) Sensitive (= 2 µg/mL) Resistant (> 256 µg/mL)
Genotypic Analysis Sequencing of 16S ribosomal RNA gene (~ 740 base pairs)	≥ 99% sequence identity to <i>K. pneumonia</i> , strain VA360 (GenBank: ANGI02000011.1)	99.2% sequence identity to <i>K. pneumonia</i> , strain VA360 (GenBank: ANGI02000011.1) ⁹
Purity (post-freeze)¹⁰	Growth consistent with expected colony morphology	Growth consistent with expected colony morphology
Viability (post-freeze)²	Growth	Growth

¹NR-48977 was produced by inoculation of BEI Resources NRS-48977 lot 63431905 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.

²1 day at 37°C in an aerobic atmosphere on Tryptic Soy agar with 5% defibrinated sheep blood

³Percent probabilities above 89% 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 Enterobacteriaceae and Other Nonenteric Gram-Negative Bacilli and Comparison with the VITEK GNI+ Card." *J. Clin. Microbiol.* 41 (2003): 2096-2101. PubMed: 12734254.

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

⁵The 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.

⁶A 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.

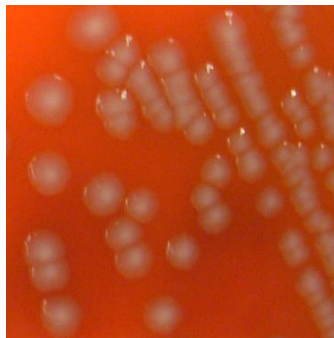
⁷MIC interpretation was determined using VITEK® 2 software version 07.01 combined with the bioMérieux Advanced Expert System™ (AES) software using the interpretation standard CLSI M100-S22 (2012) and the interpretation guideline "Natural Resistance." For more information, please refer to Sanders, C. 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.

⁸1 day at 37°C in an aerobic atmosphere on Mueller Hinton agar

⁹Also consistent with other organisms

¹⁰Purity of this lot was assessed for 7 days at 37°C in an aerobic atmosphere with 5% CO₂ on Tryptic Soy agar with 5% defibrinated sheep blood.

Figure 1: Colony Morphology



Date: 26 JAN 2018

Signature:



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