

Staphylococcus aureus, Strain P1V44

Catalog No. NR-46063

Product Description: *Staphylococcus aureus* (*S. aureus*), strain P1V44 was isolated in Belgium in 1999 from a sputum sample of an 18-year-old female cystic fibrosis patient with a history of methicillin-resistant *S. aureus* (MRSA) colonization and pulmonary exacerbations due to MRSA and *Pseudomonas aeruginosa*. *S. aureus*, strain P1V44 is a borderline MRSA, vancomycin-intermediate *S. aureus* (VISA) strain and was deposited as resistant to penicillin, erythromycin and amikacin.

Lot¹: 63007603

Manufacturing Date: 24OCT2014

TEST	SPECIFICATIONS	RESULTS
Phenotypic Analysis Cellular morphology Colony morphology ² Motility (wet mount) Hemolysis ² Biochemical Characterization Catalase Coagulase ³ VITEK [®] 2 Compact (GP card)	Gram-positive cocci Report results Report results Report results Positive Report results Consistent with <i>S. aureus</i>	Gram-positive cocci Circular, convex, entire, smooth and gray (Figure 1) Non-motile β-hemolytic Positive Positive Consistent with <i>S. aureus</i>
Antibiotic Susceptibility Profile VITEK [®] (AST-GP71 card) ⁴ Benzylpenicillin Oxacillin Gentamicin Ciprofloxacin Levofloxacin Moxifloxacin Clindamycin (inducible resistance) Erythromycin Quinupristin/dalfopristin Linezolid Daptomycin Vancomycin Minocycline Tetracycline Tigecycline Nitrofurantoin Rifampicin Trimethoprim/sulfamethoxazole Etest [®] antibiotic test strips ⁹ Chloramphenicol ¹⁰ Teicoplanin ¹⁰	Report results Resistant Report results Report results Report results Report results Report results Resistant Sensitive Sensitive Non-susceptible Intermediate Report results Report results Report results Report results Report results Sensitive Report results Report results	Inconclusive ⁵ Inconclusive ⁶ Sensitive (= 2 µg/mL) ⁷ Intermediate (= 2 µg/mL) Resistant (= 4 µg/mL) Intermediate (= 1 µg/mL) Inconclusive ⁸ Resistant (≥ 8 µg/mL) Sensitive (≤ 0.25 µg/mL) Sensitive (= 2 µg/mL) Non-susceptible (= 2 µg/mL) Intermediate (= 8 µg/mL) Sensitive (≤ 0.5 µg/mL) Sensitive (= 2 µg/mL) Sensitive (≤ 0.12 µg/mL) Sensitive (≤ 32 µg/mL) Sensitive (≥ 32 µg/mL) Sensitive (≤ 10 µg/mL) Sensitive (= 6 µg/ml) Sensitive (= 6-8 µg/ml)
Genotypic Analysis Sequencing of 16S ribosomal RNA gene (~ 830 base pairs)	Consistent with <i>S. aureus</i>	Consistent with <i>S. aureus</i>
Purity (post-freeze)¹¹	Growth consistent with <i>S. aureus</i>	Growth consistent with <i>S. aureus</i>
Viability (post-freeze)²	Growth	Growth

- ¹ *S. aureus*, strain P1V44 was deposited to BEI Resources as part of the NARSA collection. NR-46063 was produced by inoculation of the deposited material into Tryptic Soy broth and grown 23 hours at 37°C in an aerobic atmosphere. Broth inoculum was added to Tryptic Soy agar with 5% defibrinated sheep blood which were grown 24 hours at 37°C in an aerobic atmosphere to produce this lot.
- ² 24 hours at 37°C in an aerobic atmosphere on Tryptic Soy agar with 5% defibrinated sheep blood
- ³ 4 hours at 37°C in rabbit serum with 0.15% EDTA (Coagulase Plasma BBL™ 240827)
- ⁴ Minimum Inhibitory Concentration (MIC); MIC Interpretation Guideline: CLSI M100-S22 (2012)
- ⁵ *S. aureus*, strain P1V44 was deposited as resistant to penicillin. Antibiotic susceptibility testing performed in duplicate determined the penicillin MIC for *S. aureus*, strain P1V44 as ≤ 0.12 µg/ml, which is considered susceptible; however, this strain tested positive for beta-lactamase production (Cefinase™ Paper Disc BBL™ 231650). While rare, other beta-lactamase producing, penicillin-sensitive *S. aureus* strains have been reported. For addition information, refer to Gill, V. J., C. B. Manning and C. M. Ingalls. "Correlation of Penicillin Minimum Inhibitory Concentrations and Penicillin Zone Edge Appearance with Staphylococcal Beta-Lactamase Production." *J. Clin. Microbiol.* 14 (1981): 437-440. PubMed: 6974738.
- ⁶ *S. aureus*, strain P1V44 was deposited as being borderline susceptible to oxacillin (MIC 2-4 µg/mL) but positive for *mecA* by PCR. Antibiotic susceptibility testing performed in duplicate determined the oxacillin MIC for *S. aureus*, strain P1V44 to be 1-2 µg/ml, which is considered susceptible according to CLSI M100-S22 (2012) MIC Interpretation Guidelines. For addition information, refer to Denis O., et al. "Emergence of Vancomycin-Intermediate *Staphylococcus aureus* in a Belgian Hospital: Microbiological and Clinical Features." *J. Antimicrob. Chemother.* 50 (2002): 383-391. PubMed: 12205063.
- ⁷ *S. aureus*, strain P1V44 was deposited as being resistant to gentamicin. Antibiotic susceptibility testing performed in duplicate identified *S. aureus*, strain P1V44 as being susceptible to gentamicin.
- ⁸ The VITEK® AST-GP71 card tests for both clindamycin resistance and inducible clindamycin resistance (ICR). A positive ICR test is indicative of inducible MLS_B resistance, which confers resistance to macrolides, lincosamides, and type B streptogramin and the isolate should be considered resistant to clindamycin. Antibiotic susceptibility testing performed in duplicate was inconclusive; therefore, the susceptibility of *S. aureus*, strain P1V44 to clindamycin could not be determined.
- ⁹ 24 hours at 37°C in an aerobic atmosphere on Mueller Hinton agar
- ¹⁰ For both chloramphenicol (bioMérieux Etest® 412308) and teicoplanin (bioMérieux Etest® 412459), a MIC ≤ 8 µg/mL is sensitive, a MIC = 16 µg/mL is intermediate, and a MIC ≥ 32 µg/mL is resistant.
- ¹¹ Purity of this lot was assessed for 8 days on Tryptic Soy agar with 5% defibrinated sheep blood at 37°C in an aerobic atmosphere.

Figure 1



Date: 12 FEB 2015

Signature: 

Title: Technical Manager, BEI Authentication or designee

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