

**Staphylococcus aureus, Strain AIS2006032**

**Catalog No. NR-46416**

**Product Description:** *Staphylococcus aureus* (*S. aureus*), strain AIS2006032 was isolated in 2005 in Michigan, USA from infected non-healing plantar ulcers of a 48-year-old male who had a history of long-term vancomycin therapy. *S. aureus*, strain AIS2006032 is a vancomycin-resistant *S. aureus* (VRSA) strain.

**Lot<sup>1</sup>: 62471639**

**Manufacturing Date: 03APR2014**

TEST	SPECIFICATIONS	RESULTS
<b>Phenotypic Analysis</b> Cellular morphology Colony morphology <sup>2</sup>  Motility (wet mount) Hemolysis <sup>3</sup> Biochemical Characterization Catalase Coagulase <sup>4</sup> VITEK <sup>®</sup> 2 Compact (GP card)	Gram-positive cocci Report results  Report results Report results  Positive Report results ≥ 90% probability of being <i>S. aureus</i>	Gram-positive cocci Circular, convex, entire, smooth and cream (Figure 1) Non-motile β-hemolytic  Positive Positive <i>S. aureus</i> (99% probability) <sup>5</sup>
<b>Antibiotic Susceptibility Profile</b> VITEK <sup>®</sup> (AST-GP71 card) <sup>6</sup> Beta-lactamase <sup>7</sup> Cefoxitin screen Gentamicin Ciprofloxacin Levofloxacin Moxifloxacin Clindamycin (inducible resistance) Erythromycin Clindamycin Quinupristin/dalfopristin Linezolid Daptomycin Vancomycin Minocycline Tetracycline Tigecycline Nitrofurantoin Rifampicin Trimethoprim/sulfamethoxazole Etest <sup>®</sup> antibiotic test strips <sup>9</sup> Chloramphenicol <sup>10</sup> Teicoplanin <sup>10</sup> Benzylpenicillin <sup>10</sup>	Report results Report results Sensitive Resistant Report results Report results Report results Report results Resistant Resistant Sensitive Sensitive Report results Resistant Report results Report results Report results Report results Report results Sensitive  Report results Resistant Report results	Positive Negative Sensitive (≤ 0.5 µg/mL) Resistant (≥ 8 µg/mL) Resistant (≥ 8 µg/mL) Resistant (= 4 µg/mL) Negative Resistant (≥ 8 µg/mL) Resistant (≥ 8 µg/mL) Sensitive (≤ 0.5 µg/mL) Sensitive (= 2 µg/mL) Sensitive (= 0.25 µg/mL) Resistant (≥ 32 µg/mL) Sensitive (≤ 0.5 µg/mL) Sensitive (= 2 µg/mL) Sensitive (≤ 0.12 µg/mL) <sup>8</sup> Sensitive (≤ 16 µg/mL) Sensitive (≤ 0.5 µg/mL) Sensitive (≤ 10 µg/mL)  Sensitive (= 1.5 µg/mL) Resistant (= 32 µg/mL) Resistant (= 0.38 µg/mL)
<b>Genotypic Analysis</b> Sequencing of 16S ribosomal RNA gene (~ 1500 base pairs)	≥ 99% sequence identity to <i>S. aureus</i> type strain (GenBank: L37597)	99.9% sequence identity to <i>S. aureus</i> type strain (GenBank: L37597)
<b>Presence of <i>mecA</i> by PCR Amplification of Extracted DNA<sup>11</sup></b>	~ 310 base pair amplicon	~ 310 base pair amplicon

TEST	SPECIFICATIONS	RESULTS
Purity (post-freeze) <sup>12</sup>	Consistent with expected colony morphology	Consistent with expected colony morphology
Viability (post-freeze) <sup>2</sup>	Growth	Growth

<sup>1</sup>*S. aureus*, strain AIS2006032 was deposited to BEI Resources as part of the NARSA collection. NR-46416 was produced by inoculation of the deposited material into Brain Heart Infusion broth with 6 µg/mL vancomycin and grown 28 hours at 37°C in an aerobic atmosphere. Broth inoculum was added to Brain Heart Infusion agar with 6 µg/mL vancomycin kolles which were grown 21 hours at 37°C in an aerobic atmosphere to produce this lot.

<sup>2</sup>24 hours at 37°C in an aerobic atmosphere on Brain Heart Infusion agar with 6 µg/mL vancomycin

<sup>3</sup>24 hours at 37°C in an aerobic atmosphere on Tryptic Soy agar with 5% defibrinated sheep blood

<sup>4</sup>4 hours at 37°C in rabbit serum with 0.15% EDTA (Coagulase Plasma BBL™ 240827)

<sup>5</sup>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 *Enterobacteriaceae* and Other Nonenteric Gram-Negative Bacilli and Comparison with the Vitek GNI+ Card." *J. Clin. Microbiol.* 41 (2003): 2096-2101. PubMed: 12734254.

<sup>6</sup>Minimum Inhibitory Concentration (MIC); MIC Interpretation Guideline: CLSI M100-S22 (2012)

<sup>7</sup>The production of beta-lactamase was detected using a Cefinase™ Paper Disc (BBL™ 231650).

<sup>8</sup>MIC Interpretation Guideline: EUCAST Version 4.0 (2014)

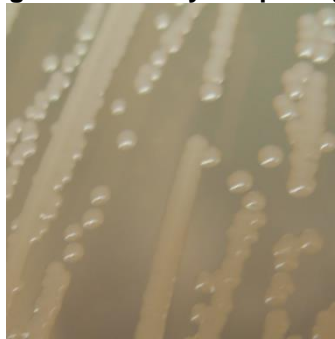
<sup>9</sup>24 hours at 37°C in an aerobic atmosphere on Mueller Hinton agar

<sup>10</sup>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. For benzylpenicillin (bioMérieux Etest® 412262), a MIC ≤ 0.12 µg/mL is sensitive and a MIC ≥ 0.25 µg/mL is resistant.

<sup>11</sup>NR-46416 was deposited as being resistant to oxacillin and positive for *mecA*. Initial susceptibility testing with VITEK® (AST-GP71 card) and E® test antibiotic test strips (bioMérieux Etest® 412262) identified NR-46416 as susceptible to oxacillin. Additional testing using Oxacillin Screen agar (BBL™ 221952) found NR-46416 to be resistant to oxacillin. PCR amplification was used to determine the presence of *mecA*.

<sup>12</sup>Purity of this lot was assessed for 7 days at 37°C in an aerobic atmosphere on Tryptic Soy agar with 5% defibrinated sheep blood.

Figure 1: Colony Morphology



Date: 22 AUG 2014

Signature:

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