SUPPORTING INFECTIOUS DISEASE RESEARCH

Staphylococcus aureus, Strain 917 (BR-VSSA)

Catalog No. NR-49121

Product Description: *Staphylococcus aureus* (*S. aureus*), strain 917 (BR-VSSA) was isolated in 2012 in Sao Paulo, Brazil, from the blood of a 35-year-old male patient with recurrent skin and soft tissue infections (SSTI), which were treated with numerous antibiotics, including vancomycin and teicoplanin. The patient had a history of mycosis fungoides, cocaine addiction and diabetes mellitus. Strain 917 (BR-VSSA) was co-isolated with vancomycin-resistant *S. aureus* (VRSA), strain 880 (BR-VRSA) and vancomycin-resistant *Enterococcus faecalis* (VREF), strain 918. *S. aureus*, strain 917 (BR-VSSA) is a methicillin-resistant *S. aureus* (MRSA), vancomycin-sensitive *S. aureus* (VSSA) strain. <u>Note:</u> The strain designation on the vial label for lot 63885494 is incorrect. The correct strain designation is Strain 917 (BR-VSSA).

Lot¹: 63885494

Manufacturing Date: 25NOV2015

TEST	SPECIFICATIONS	RESULTS
Phenotypic Analysis		
Cellular morphology	Gram-positive cocci	Gram-positive cocci
Colony morphologies ^{2,3}	Report results	Colony Type 1: Circular, convex, entire, smooth and gray (Figure 1) Colony Type 2: Circular, convex, entire, smooth and tan (Figure 1)
Motility (wet mount)	Report results	Non-motile
Hemolysis ²	Report results	β-hemolytic
Biochemical Characterization		
Catalase	Positive	Positive
VITEK [®] 2 Compact (GP card)	≥ 90% probability of being <i>S. aureus</i>	S. aureus (99% probability) ⁴
VITEK [®] MS (MALDI-TOF)	S. aureus	S. aureus (99.9%)
Antibiotic Susceptibility Profile ⁵ VITEK [®] (AST-GP71 card) ⁶		
Beta-lactamase ⁷	Report results	Positive
Cefoxitin screen	Report results	Positive
Benzylpenicillin	Report results	Resistant (≥ 0.5 µg/mL)
Oxacillin	Resistant	Resistant (≥ 4 µg/mL)
Gentamicin	Sensitive	Sensitive (≤ 0.5 µg/mL)
Ciprofloxacin	Report results	Resistant (≥ 8 µg/mL)
Levofloxacin	Report results	Resistant (= $4 \mu g/mL$)
Moxifloxacin	Report results	Resistant (= 2 µg/mL)
Clindamycin (inducible resistance)	Report results	Negative
Erythromycin	Report results	Resistant (≥ 8 µg/mL) Resistant (≥ 8 µg/mL)
Clindamycin	Report results	Sensitive ($\leq 0.25 \ \mu g/mL$)
Quinupristin/dalfopristin	Report results	Sensitive ($\leq 0.25 \ \mu g/mL$)
Linezolid	Report results	Susceptible (= $2 \mu g/mL$)
Daptomycin	Report results	Susceptible (= $0.3 - 1 \mu g/mL$) Sensitive ($\leq 0.5 \mu g/mL$)
Vancomycin	Sensitive	Sensitive ($\leq 0.5 \ \mu g/mL$)
Minocycline	Report results	Sensitive ($\leq 1 \mu g/mL$)
Tetracycline	Report results	Sensitive ($\leq 0.12 \ \mu g/mL$) ⁸
Tigecycline	Report results	Sensitive ($\leq 16 \ \mu g/mL$)
Nitrofurantoin	Report results	Sensitive ($\leq 0.5 \mu$ g/mL)
Rifampicin	Report results	Resistant ($\geq 320 \ \mu g/mL$)
Trimethoprim/sulfamethoxazole	Report results	

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TEST	SPECIFICATIONS	RESULTS
Genotypic Analysis Sequencing of 16S ribosomal RNA gene (~1500 base pairs)	≥ 99% sequence identity to <i>S. aureus,</i> strain 917 (BR-VSSA) (GenBank: JXBU01000101.1)	99.9% sequence identity to <i>S. aureus,</i> strain 917 (BR-VSSA) (GenBank: JXBU01000101.1)
Purity (post-freeze) ⁹	Consistent with expected colony morphology	Consistent with expected colony morphology
Viability (post-freeze) ²	Growth	Growth

¹NR-49121 was produced by inoculation of the deposited material into Tryptic Soy broth and grown 1 day at 37°C in an aerobic atmosphere. Broth inoculum was added to Tryptic Soy agar with 5% defibrinated sheep blood kolles, which were grown 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

³Two colony types were observed. Plating of the individual colony types showed that they did not revert to the mixed colony type. VITEK[®] MS (MALDI-TOF) analysis identified cells from both colony types as *S. aureus*. The 16S ribosomal RNA gene of each colony type was sequenced and found to have 99.9% sequence identity to the other colony type.

⁴Percent 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.

Figure 1: Colony Morphology

⁵Antibiotic susceptibility testing was performed using a mixed colony suspension

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

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

⁸MIC Interpretation Guideline: EUCAST Version 4.0 (2014)

⁹The 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.

Colony type 1

Date: 15 JUN 2016

Signature:

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