SUPPORTING INFECTIOUS DISEASE RESEARCH

Staphylococcus aureus, Strain NRS63SH

Catalog No. NR-50109

Product Description: Staphylococcus aureus (S. aureus), strain NRS63SH was originally deposited as part of the NARSA collection, strain NRS63. The phenotypic characteristics obtained during quality control testing did not match the reported phenotype of the deposited item; subsequently, this novel strain was deposited as NRS63SH. *S. aureus*, strain NRS63SH is a vancomycin-resistant *S. aureus* (VRSA) strain.

Lot¹: 63622031

Manufacturing Date: 22JUL2015

TEST	SPECIFICATIONS	RESULTS
Phenotypic Analysis		
Cellular morphology	Gram-positive cocci	Gram-positive cocci
Colony morphology ²	Report results	Circular, convex, entire, smooth,
colony morphology		opaque and white (Figure 1)
Motility (wet mount)	Report results	Non-motile
Hemolysis ²	Report results	β-hemolytic
Biochemical Characterization		P
Catalase	Positive	Positive
Coagulase ³	Report results	Positive
VITEK [®] 2 Compact (GP card)	\geq 90% probability of being <i>S. aureus</i>	<i>S. aureus</i> (99% probability) ⁴
Antibiotic Susceptibility Profile		
VITEK [®] (AST-GP71 card) ⁵		
Beta-lactamase ⁶	Report results	Positive
Cefoxitin screen	Report results	Positive
Benzylpenicillin	Report results	Resistant (≥ 0.5 µg/mL)
Oxacillin	Report results	Resistant (≥ 4 µg/mL)
Gentamicin	Report results	Resistant (≥ 16 µg/mL)
Ciprofloxacin	Report results	Resistant (≥ 8 µg/mL)
Levofloxacin	Report results	Resistant (≥ 8 µg/mL)
Moxifloxacin	Report results	Resistant (4 µg/mL)
Clindamycin (inducible resistance)	Report results	Negative
Erythromycin	Report results	Resistant (≥ 8 µg/mL)
Clindamycin	Report results	Resistant ($\geq 8 \mu g/mL$)
Quinupristin/dalfopristin	Report results	Sensitive (≤ 0.25 µg/mL)
Linezolid	Report results	Sensitive (1 µg/mL)
Daptomycin	Report results	Susceptible (0.25 µg/mL)
Minocycline	Report results	Sensitive (≤ 0.5 µg/mL)
Tetracycline	Report results	Sensitive (≤ 1 µg/mL)
Tigecycline	Report results	Sensitive ($\leq 0.12 \mu g/mL$) ⁷
Nitrofurantoin	Report results	Sensitive (≤ 16 µg/mL)
Rifampicin	Report results	Resistant (\geq 32 µg/mL)
Trimethoprim/sulfamethoxazole	Report results	Resistant (80 µg/mL)
Etest [®] antibiotic test strips ⁸		(°° µ9,)
Chloramphenicol ⁹	Report results	Sensitive (3-4 µg/ml)
Teicoplanin ⁹	Report results	Inconclusive (24-64 µg/ml) ¹⁰
Vancomycin ⁹	Report results	Resistant ($\geq 256 \ \mu g/mL$)
Genotypic Analysis		
Sequencing of 16S ribosomal RNA gene	≥ 99% sequence identity to S. aureus	100% sequence identity to S. aureus
(~ 1490 base pairs)	type strain (GenBank: L37597)	type strain (GenBank: L37597)

E-mail: <u>contact@beiresources.org</u> Tel: 800-359-7370 Fax: 703-365-2898 **b**|**e**|**i** resources

Certificate of Analysis for NR-50109

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TEST	SPECIFICATIONS	RESULTS
Purity (post-freeze) ¹¹	Consistent with expected colony morphology	Consistent with expected colony morphology
Viability (post-freeze) ²	Growth	Growth

¹NR-50109 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

³4 hours at 37°C in rabbit serum with 0.15% EDTA (Coagulase Plasma BBL™ 240827)

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." <u>J. Clin. Microbiol.</u> 41 (2003): 2096-2101. PubMed: 12734254.

⁵Minimum Inhibitory Concentration (MIC); MIC Interpretation Guideline: CLSI M100-S22 (2012)

⁶The production of beta-lactamase was detected using a Cefinase[™] Paper Disc (BBL[™] 231650).

⁷MIC Interpretation Guideline: EUCAST Version 4.0 (2014)

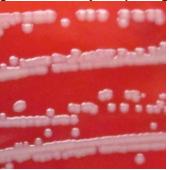
⁸1 day at 37°C in an aerobic atmosphere on Mueller Hinton agar

⁹For 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 vancomycin (bioMérieux Etest[®] 412486), a MIC ≤ 2 µg/mL is sensitive, a MIC = 4 to 8 µg/mL is intermediate, and a MIC ≥ 16 µg/mL is resistant.

¹⁰Antibiotic susceptibility testing performed in duplicate determined the teicoplanin MICs for strain NRS63SH to be 24 µg/mL and 64 µg/mL, which are interpreted as intermediate and resistant, respectively.

¹¹Purity of this lot was assessed for 8 days at 37°C in an aerobic atmosphere on Tryptic Soy agar with 5% defibrinated sheep blood.

Figure 1: Colony Morphology



Date: 27 MAY 2016

Signature:

BEI Resources Authentication

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