b|e|i RESOURCES
SUPPORTING INFECTIOUS DISEASE RESEARCH

Certificate of Analysis for NR-45936

Staphylococcus aureus, Strain RN0027

Catalog No. NR-45936

Product Description: *Staphylococcus aureus* (*S. aureus*), strain RN0027 is lysogenic for phages Φ13 and 80α and was derived from *S. aureus*, strain RN0025. In turn, strain RN0025 was derived from UV treatment of *S. aureus*, strain RN1 (NCTC8325). *S. aureus*, strain RN0027 is a methicillin-sensitive *S. aureus* (MSSA) strain.

Lot[1]: 62436012 **Manufacturing Date: 20MAR2014**

TEST	SPECIFICATIONS	RESULTS
Phenotypic Analysis		
Cellular morphology	Gram-positive cocci	Gram-positive cocci
Colony morphology[2]	Report results	Circular, low convex, entire, smooth and cream (Figure 1)
Motility (wet mount)	Report results	Non-motile
Hemolysis[2]	Report results	β-hemolytic[3]
Biochemical characterization		
Catalase	Positive	Positive
Coagulase[4]	Report results	Positive
VITEK® 2 Compact (GP card)	≥ 90% probability of being *S. aureus*	*S. aureus* (99% probability)[5]
VITEK® MS (MALDI-TOF)	Consistent with *S. aureus*	*S. aureus* (99.9%)
Antibiotic Susceptibility Profile		
VITEK® (AST-GP71 card)[6]		
Beta-lactamase[7]	Report results	Negative
Cefoxitin screen	Report results	Negative
Benzylpenicillin	Report results	Sensitive (= 0.06 µg/mL)
Oxacillin	Sensitive	Sensitive (≤ 0.25 µg/mL)
Gentamicin	Sensitive	Sensitive (≤ 0.5 µg/mL)
Ciprofloxacin	Sensitive	Sensitive (≤ 0.5 µg/mL)
Levofloxacin	Report results	Sensitive (≤ 0.12 µg/mL)
Moxifloxacin	Report results	Sensitive (≤ 0.25 µg/mL)
Clindamycin (inducible resistance)	Report results	Negative
Erythromycin	Sensitive	Sensitive (≤ 0.25 µg/mL)
Clindamycin	Sensitive	Sensitive (≤ 0.25 µg/mL)
Quinupristin/dalfopristin	Sensitive	Sensitive (≤ 0.25 µg/mL)
Linezolid	Sensitive	Sensitive (= 2 µg/mL)
Daptomycin	Report results	Sensitive (= 1 µg/mL)
Vancomycin	Sensitive	Sensitive (= 1 µg/mL)
Minocycline	Report results	Sensitive (≤ 0.5 µg/mL)
Tetracycline	Report results	Sensitive (≤ 1 µg/mL)
Tigecycline	Report results	Sensitive (≤ 0.12 µg/mL)[8]
Nitrofurantoin	Report results	Sensitive (≤ 16 µg/mL)
Rifampicin	Report results	Sensitive (≤ 0.5 µg/mL)
Trimethoprim/sulfamethoxazole	Sensitive	Sensitive (≤ 10 µg/mL)
Etest® antibiotic test strips[9]		
Chloramphenicol[10]	Report results	Sensitive (= 2.0 µg/mL)
Teicoplanin[10]	Sensitive	Sensitive (= 1.5 µg/mL)
Genotypic Analysis		
Sequencing of 16S ribosomal RNA gene (~ 1490 base pairs)	≥ 99% sequence identity to *S. aureus* type strain (GenBank: L37597)	99.9% sequence identity to *S. aureus* type strain (GenBank: L37597)

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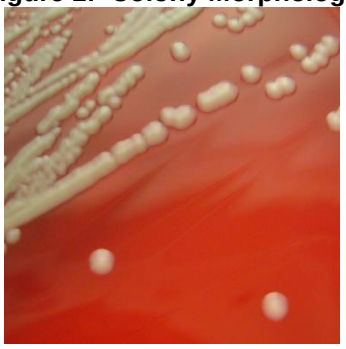
TEST	SPECIFICATIONS	RESULTS
Purity (post-freeze)[11]	Consistent with expected colony morphology	Consistent with expected colony morphology
Viability (post-freeze)[2]	Growth	Growth

[1]*S. aureus*, strain RN0027 was deposited to BEI Resources as part of the NARSA collection. NR-45936 was produced by inoculation of the deposited material into Tryptic Soy broth and grown 24 hours at 37°C in an aerobic atmosphere. Broth inoculum was added to Tryptic Soy agar with 5% defibrinated sheep blood kolles which were grown 24 hours at 37°C in an aerobic atmosphere to produce this lot.
[2]21 hours at 37°C in an aerobic atmosphere on Tryptic Soy agar with 5% defibrinated sheep blood
[3]*S. aureus*, strain RN0027 is reported to be non-β-hemolytic due to the integration of Φ13 in *hlb.* Hemolysis observations were performed in duplicate and determined strain RN20027 is β-hemolytic. For additional information, refer to Herbert, S., et al. "Repair of Global Regulators in *Staphylococcus aureus* 8325 and Comparative Analysis with Other Clinical Isolates." Infect. Immun. 78 (2010): 2877-2889. Pubmed: 20212089.
[4]4 hours at 37°C in rabbit serum with 0.15% EDTA (Coagulase Plasma BBL™ 240827)
[5]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.
[6]Minimum Inhibitory Concentration (MIC); MIC Interpretation Guideline: CLSI M100-S22 (2012)
[7]The production of beta-lactamase was detected using a Cefinase™ Paper Disc (BBL™ 231650).
[8]MIC Interpretation Guideline: EUCAST Version 4.0 (2014)
[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 7 days at 37°C in an aerobic atmosphere on Tryptic Soy agar with 5% defibrinated sheep blood.

Figure 1: Colony Morphology



Date: 01 SEP 2014

Signature:

BEI Resources Authentication

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