Certificate of Analysis for NR-46256

Staphylococcus aureus, Strain OR-283

Catalog No. NR-46256

Product Description: *Staphylococcus aureus (S. aureus*), strain OR-283 is of unknown origin. *S. aureus*, strain OR-283 is a clinically-associated methicillin-resistant *S. aureus* (MRSA) strain.

Lot[1]: 2127 **Manufacturing Date: 26OCT2016**

TEST	SPECIFICATIONS	RESULTS
Phenotypic Analysis		
Cellular morphology	Gram-positive cocci	Gram-positive cocci
Colony morphology[2,3]	Report results	Circular, low convex, entire, smooth and cream (Figure 1)
Motility (wet mount)	Report results	Non-motile
Hemolysis[4]	Report results	β-hemolytic
Biochemical characterization		
Catalase	Positive	Positive
Coagulase[5]	Report results	Positive
VITEK® 2 Compact (GP card)	≥ 90% probability of being *S. aureus*	*S. aureus* (99% probability)[6]
Antibiotic Susceptibility Profile		
VITEK® (AST-GP71 card)[7]		
Beta-lactamase[8]	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	Resistant	Resistant (≥ 8 µg/mL)
Moxifloxacin	Report results	Resistant (≥ 8 µg/mL)
Clindamycin (inducible resistance)	Report results	Negative
Erythromycin	Resistant	Resistant (≥ 8 µg/mL)
Clindamycin	Resistant	Resistant (≥ 8 µg/mL)
Quinupristin/dalfopristin	Report results	Sensitive (≤ 0.25 µg/mL)
Linezolid	Sensitive	Sensitive (= 2 µg/mL)
Daptomycin	Sensitive	Sensitive (= 0.25 µg/mL)
Vancomycin	Sensitive	Sensitive (= 1 µg/mL)
Minocycline	Report results	Sensitive (≤ 0.5 µg/mL)
Tetracycline	Sensitive	Sensitive (≤ 1 µg/mL)
Tigecycline	Report results	Sensitive (≤ 0.12 µg/mL)[9]
Nitrofurantoin	Report results	Sensitive (≤ 16 µg/mL)
Rifampicin	Sensitive	Sensitive (≤ 0.5 µg/mL)
Trimethoprim/sulfamethoxazole	Sensitive	Sensitive (≤ 10 µg/mL)
Etest® antibiotic test strips[10]		
Chloramphenicol[11]	Report results	Sensitive (= 2 - 4 µg/mL)[12]
Teicoplanin[11]	Report results	Sensitive (= 1.5 µg/mL)
Genotypic Analysis		
Sequencing of 16S ribosomal RNA gene (~ 1460 base pairs)	≥ 99% sequence identity to *S. aureus* type strain (GenBank: L37597)	100% sequence identity to *S. aureus* type strain (GenBank: L37597)
Purity (post-freeze)[13]	Consistent with expected colony morphology	Consistent with expected colony morphology
Viability (post-freeze)[2]	Growth	Growth

BEI Resources
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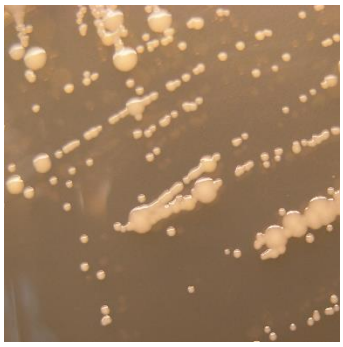
[1]*S. aureus*, strain OR-283 was deposited to BEI Resources as part of the NARSA collection. NR-46256 was produced by inoculation of the deposited material into Tryptic Soy broth and grown 1 day at 37°C in an aerobic atmosphere. Broth inoculum was added to Tryptic Soy agar kolles which were grown 1 day at 37°C in an aerobic atmosphere to produce this lot.
[2]1 day at 37°C in an aerobic atmosphere on Tryptic Soy agar
[3]Two colony sizes were observed. Plating of the individual colony sizes showed that they did not revert to the mixed colony sizes. VITEK® MS (MALDI-TOF) analysis identified cells from both colony sizes as *S. aureus*. The 16S ribosomal RNA gene of each colony size was sequenced and found to have 100% sequence identity with the other colony size and with the *S. aureus* type strain (GenBank: L37597).
[4]1 day at 37°C in an aerobic atmosphere on Tryptic Soy agar with 5% defibrinated sheep blood
[5]4 hours at 37°C in rabbit serum with 0.15% EDTA (Coagulase Plasma BBL™ 240827)
[6]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.
[7]Minimum Inhibitory Concentration (MIC); MIC Interpretation Guideline: CLSI M100-S22 (2012)
[8]The production of beta-lactamase was detected using a Cefinase™ Paper Disc (BBL™ 231650).
[9]MIC Interpretation Guideline: EUCAST Version 4.0 (2014)
[10]1 day at 37°C in an aerobic atmosphere on Mueller Hinton agar
[11]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.
[12]*S. aureus*, strain OR-283 was deposited as having an intermediate susceptibility to chloramphenicol. Antibiotic susceptibility testing performed in duplicate determined that strain OR-283 is sensitive to chloramphenicol.
[13]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: 21 FEB 2017 **Signature:**

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