

Staphylococcus aureus, Strain NY-313
Catalog No. NR-46243

Product Description: *Staphylococcus aureus* (*S. aureus*), strain NY-313 was isolated in 2006 from the blood of a 33-year-old male with a bloodstream infection, osteomyelitis, and/or peptic ulcer in New York, USA. *S. aureus*, strain NY-313 is a clinically-associated methicillin-resistant *S. aureus* (MRSA) strain.

Lot¹: 64044910
Manufacturing Date: 18FEB2016

TEST	SPECIFICATIONS	RESULTS
Phenotypic Analysis Cellular morphology Colony morphology ² Motility (wet mount) Hemolysis ² Biochemical characterization Catalase Coagulase ³ VITEK [®] 2 Compact (GP card) VITEK [®] MS (MALDI-TOF)	Gram-positive cocci Report results Report results Report results Positive Report results ≥ 90% probability of being <i>S. aureus</i> Consistent with <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) ⁴ <i>S. aureus</i> (99.9%)
Antibiotic Susceptibility Profile VITEK [®] (AST-GP71 card) ⁵ Beta-lactamase ⁶ Cefoxitin screen Benzylpenicillin Oxacillin Gentamicin Ciprofloxacin Levofloxacin Moxifloxacin Clindamycin (inducible resistance) Erythromycin Clindamycin Quinupristin/dalfopristin Linezolid Daptomycin Vancomycin Minocycline Tetracycline Tigecycline Nitrofurantoin Rifampicin Trimethoprim/sulfamethoxazole Estest [®] antibiotic test strips ⁹ Chloramphenicol ¹⁰ Teicoplanin ¹⁰	Report results Report results Report results Resistant Sensitive Report results Sensitive Report results Report results Report results Report results Sensitive Sensitive Report results Sensitive Sensitive Report results Report results Sensitive Sensitive Sensitive Report results	Positive Positive Resistant (≥ 0.5 µg/mL) Resistant (≥ 4 µg/mL) Sensitive (≤ 0.5 µg/mL) Sensitive (≤ 0.5 µg/mL) Sensitive (= 0.25 µg/mL) Sensitive (≤ 0.25 µg/mL) Negative Sensitive (= 2 µg/mL) ⁷ Sensitive (≤ 0.25 µg/mL) Sensitive (≤ 0.25 µg/mL) Sensitive (= 2 µg/mL) Sensitive (= 0.5-1 µg/mL) Sensitive (= 1 µg/mL) Sensitive (≤ 0.5 µg/mL) Sensitive (≤ 1 µg/mL) Sensitive (≤ 0.12 µg/mL) ⁸ Sensitive (≤ 16 µg/mL) Sensitive (≤ 0.5 µg/mL) Sensitive (≤ 10 µg/mL) Sensitive (= 4 µg/mL) Sensitive (= 2 µg/mL)
Genotypic Analysis Sequencing of 16S ribosomal RNA gene (~ 1460 base pairs)	≥ 99% sequence identity to <i>S. aureus</i> type strain (GenBank: L37597)	100% sequence identity to <i>S. aureus</i> type strain (GenBank: L37597)

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 NY-313 was deposited to BEI Resources as part of the NARSA collection. NR-46243 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." J. Clin. Microbiol. 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).

⁷*S. aureus*, strain NY-313 was deposited as resistant to erythromycin (MIC = 8 µg/ml). Antibiotic susceptibility testing performed in duplicate determined the erythromycin MIC for *S. aureus*, strain NY-313 as 2 µg/ml, which is considered susceptible. Because the inducible clindamycin resistance screen was negative, the depositor reported erythromycin resistant maybe due to the presence of the *mrsA* gene. *mrsA* encodes for an efflux pump which produces a low level of erythromycin resistance. Confirmatory antibiotic susceptibility testing is recommended. For additional information please refer to Teodoro, C. R., et al. "Characterization of MLS(b) Resistance Among *Staphylococcus aureus* and *Staphylococcus epidermidis* Isolates Carrying Different SCCmec Types." Microbiol. Immunol. 56 (2012): 647-650. PubMed: 22672011.

⁸MIC Interpretation Guideline: EUCAST Version 4.0 (2014)

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

¹⁰For 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.

¹¹Purity 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: 31 MAR 2016

Signature:

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