

## **Certificate of Analysis for NR-50512**

## Staphylococcus aureus, Strain SR220

## Catalog No. NR-50512

**Product Description:** Staphylococcus aureus (S. aureus), strain SR220 was isolated in 2011 from human sputum in Georgia, USA. S. aureus, strain SR220 is a heterogeneous vancomycinintermediate S. aureus (hVISA) strain.

Lot<sup>1</sup>: 70001344 Manufacturing Date: 13JAN2017

| TEST                                    | SPECIFICATIONS                              | RESULTS                                  |
|---|---|--|
| Phenotypic Analysis                     |   |  |
| Cellular morphology                     | Gram-positive cocci                         | Gram-positive cocci                      |
| Colony morphology <sup>2</sup>          | Report results                              | Circular, low convex, entire, smooth     |
| colony melphology                       | Troport rooms                               | and white (Figure 1)                     |
| Motility (wet mount)                    | Report results                              | Non-motile                               |
| Hemolysis <sup>2</sup>                  | Report results                              | β-hemolytic                              |
| Biochemical Characterization            | Troport rooms                               | p nomely ac                              |
| Catalase                                | Positive                                    | Positive                                 |
| VITEK® 2 Compact (GP card)              | ≥ 90% probability of being <i>S. aureus</i> | S. aureus (96% probability) <sup>3</sup> |
| Antibiotic Susceptibility Profile       |   |  |
| VITEK® (AST-GP71 card) <sup>4</sup>     |   |  |
| Beta-lactamase <sup>5</sup>             | Report results                              | Negative                                 |
| Cefoxitin screen                        | Report results                              | Positive                                 |
| Benzylpenicillin                        | Report results                              | Resistant (≥ 0.5 µg/mL)                  |
| Oxacillin                               | Resistant                                   | Resistant (≥ 4 µg/mL)                    |
| Gentamicin                              | Report results                              | Sensitive (≤ 0.5 µg/mL)                  |
| Ciprofloxacin                           | Report results                              | Resistant (≥ 8 µg/mL)                    |
| Levofloxacin                            | Resistant                                   | Resistant (≥ 8 µg/mL)                    |
| Moxifloxacin                            | Report results                              | Resistant (= 4 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 (= 4 µg/mL)                    |
| Daptomycin                              | Sensitive                                   | Sensitive (≤ 0.5 µg/mL)                  |
| Vancomycin                              | Report results                              | Sensitive (= 1 $\mu$ g/mL) <sup>6</sup>  |
| Minocycline                             | Report results                              | Sensitive (≤ 0.5 µg/mL)                  |
| Tetracycline                            | Sensitive                                   | Sensitive (= 2 µg/mL)                    |
| Tigecycline                             | Report results                              | Sensitive (= $0.25 \mu \text{g/mL})^7$   |
| Nitrofurantoin                          | Report results                              | Sensitive (≤ 16 µg/mL)                   |
| Rifampicin                              | Resistant                                   | Resistant (≥ 32 µg/mL)                   |
| Trimethoprim/sulfamethoxazole           | Sensitive                                   | Sensitive (≤ 10 µg/mL)                   |
| Etest® antibiotic test strips8          | Conditive                                   | σοποιανό (= το μg/πε)                    |
| Teicoplanin <sup>9</sup>                | Report results                              | Sensitive (= 1-1.5 µg/ml)                |
| Genotypic Analysis                      |   |  |
| Sequencing of 16S ribosomal RNA gene    | ≥ 99% sequence identity to                  | 100% sequence identity to                |
| (~ 830 base pairs)                      | S. aureus type strain                       | S. aureus type strain                    |
| , | (GenBank: L37597)                           | (GenBank: L37597)                        |
| Purity (post-freeze) <sup>10</sup>      | Consistent with expected colony             | Consistent with expected colony          |
|   | morphology                                  | morphology                               |
| Viability (post-freeze) <sup>2</sup>    | Growth                                      | Growth                                   |

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SUPPORTING INFECTIOUS DISEASE RESEARCH

<sup>1</sup>NR-50512 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.

<sup>2</sup>1 day at 37°C in an aerobic atmosphere on Tryptic Soy agar with 5% defibrinated sheep blood

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.

<sup>4</sup>Minimum Inhibitory Concentration (MIC); MIC Interpretation Guideline: CLSI M100-S22 (2012)

<sup>5</sup>The production of beta-lactamase was detected using a Cefinase™ Paper Disc (BBL™ 231650).

<sup>6</sup>S. aureus, strain SR220 was deposited as a heterogeneous vancomycin-intermediate S. aureus (hVISA) strain as determined by population analysis profiling with area under the curve (PAP-AUC) and Etest® GRD (glycopeptide resistance detection) methods. Antibiotic susceptibility testing using the VITEK® AST-GP71 card failed to detect vancomycin resistant subpopulations. Confirmatory vancomycin susceptibility testing is recommended. For additional information, please refer to Richter, S. S., et al. "Detection of *Staphylococcus aureus* Isolates with Heterogeneous Intermediate-Level Resistance to Vancomycin in the United States." <u>J. Clin. Microbiol.</u> 49 (2011): 4203-4207. PubMed: 21976769.

7MIC Interpretation Guideline: EUCAST Version 4.0 (2014)

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

<sup>9</sup>For teicoplanin (bioMérieux Etest<sup>®</sup> 412459), a MIC ≤ 8 μg/mL is sensitive, a MIC = 16 μg/mL is intermediate, and a MIC ≥ 32 μg/mL is resistant.

<sup>10</sup>Purity of this lot was assessed for 7 days at 37°C in an aerobic atmosphere with 5% CO<sub>2</sub> on Tryptic Soy agar with 5% defibrinated sheep blood.





**Date: 24 MAR 2017** Signature:

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