

Staphylococcus aureus, Strain LY-1999 0620-02

Catalog No. NR-45894

Product Description: *Staphylococcus aureus* (*S. aureus*), strain LY-1999 0620-02 was isolated in Oman in 1998 from blood of a 50-year-old female patient with septicemia who had a history of diabetes mellitus, chronic renal failure, renal transplant with subsequent rejection, wound and catheter infections and extended treatment with glycopeptides. *S. aureus*, strain LY-1999 0620-02 is a glycopeptide-sensitive *S. aureus* (GSSA) strain.

Lot¹: 70005180

Manufacturing Date: 03MAY2017

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) Voges Proskauer (VP)	Gram-positive cocci Report results Report results Report results Positive Report results ≥ 90% probability of being <i>S. aureus</i> Positive	Gram-positive cocci Circular, convex, entire, smooth and cream (Figure 1) Non-motile β-hemolytic Positive Positive Inconclusive ⁴ Positive ⁵
Antibiotic Susceptibility Profile⁶ VITEK [®] (AST-GP71 card) Beta-lactamase ⁷ Cefoxitin screen Benzylpenicillin Oxacillin Gentamicin Ciprofloxacin Levofloxacin Moxifloxacin Clindamycin (inducible resistance) Erythromycin Quinupristin/dalfopristin Linezolid Daptomycin Minocycline Tetracycline Tigecycline Nitrofurantoin Rifampicin Trimethoprim/sulfamethoxazole Etest [®] antibiotic test strips ¹⁰ Chloramphenicol Teicoplanin Vancomycin	Report results Report results Report results Resistant Resistant Resistant Resistant Report results Report results Report results Report results Resistant Sensitive Sensitive Susceptible Report results Report results Report results Report results Report results Resistant Report results Report results Sensitive	Positive Positive Resistant (≥ 0.5 µg/mL) Resistant (≥ 4 µg/mL) Resistant (≥ 16 µg/mL) Resistant (= 4 µg/mL) Resistant (= 4 µg/mL) Intermediate (= 1 µg/mL) Positive ⁸ Resistant (≥ 8 µg/mL) Sensitive (≤ 0.25 µg/mL) Sensitive (= 1 µg/mL) Susceptible (= 0.25 µg/mL) Intermediate (= 8 µg/mL) Resistant (≥ 16 µg/mL) Sensitive (= 0.25 µg/mL) ⁹ Sensitive (≤ 16 µg/mL) Sensitive (≤ 0.5 µg/mL) Resistant (≥ 320 µg/mL) Resistant (= 96-128 µg/ml) Sensitive (= 2 µg/ml) Sensitive (= 2 µg/mL)
Genotypic Analysis Sequencing of 16S ribosomal RNA gene (~ 770 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 LY-1999 0620-02 was deposited to BEI Resources as part of the NARSA collection. NR-45894 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)

⁴The VITEK® 2 Compact (GP card) could not distinguish between *S. aureus* and *S. chromogenes* due to discrepant results. Additional individual biochemical testing was completed and was consistent with *S. aureus*. For additional information on the differentiating characteristics of *S. aureus* and *S. chromogenes*, please refer to Hajek, V., et al. "Elevation of *Staphylococcus hyicus* subsp. *chromogenes* (Devriese et al., 1978) to Species Status: *Staphylococcus chromogenes* (Devriese et al., 1978) comb." *Syst. Appl. Microbiol.* 8 (1986): 169–173.

⁵*S. aureus* is expected to have a positive result for Voges Proskauer and is β-hemolytic. *S. chromogenes* is expected to have a negative result for Voges Proskauer and is non-hemolytic.

⁶Minimum Inhibitory Concentration (MIC); MIC Interpretation Guideline: CLSI M100-S22 (2012)

⁷The production of beta-lactamase was detected using a Cefinase™ Paper Disc (BBL™ 231650).

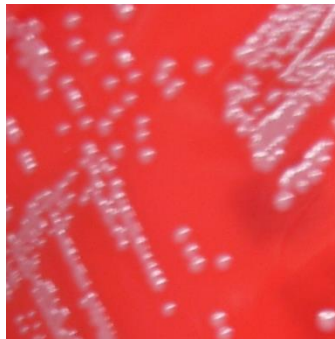
⁸*S. aureus*, strain LY-1999 0620-02 was deposited as being sensitive to clindamycin. Antibiotic susceptibility testing performed in duplicate determined clindamycin MIC for *S. aureus*, strain LY-1999 0620-02 as ≤ 0.25 µg/ml, which is considered susceptible; however, this strain tested positive for inducible clindamycin resistance (ICR). A positive ICR test is indicative of inducible MLS_B resistance, which confers resistance to macrolides, lincosamides, and type B streptogramin, suggesting that this strain is resistant to clindamycin. Confirmatory antibiotic susceptibility testing is recommended. For additional information, please refer to Mahesh, C. B., B. K. Ramakant and V. S. Jagadeesh. "The Prevalence of Inducible and Constitutive Clindamycin Resistance Among the Nasal Isolates of Staphylococci." *J. Clin. Diagn. Res.* 7 (2013): 1620-1622. PubMed: 24086856.

⁹MIC Interpretation Guideline: EUCAST Version 4.0 (2014)

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

¹¹Purity of this lot was assessed for 7 days at 37°C in an aerobic atmosphere with 5% CO₂ on Tryptic Soy agar with 5% defibrinated sheep blood.

Figure 1: Colony Morphology



Date: 21 AUG 2017

Signature:

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