

Staphylococcus aureus, Strain AJUL2

Catalog No. NR-55216

Product Description:

Staphylococcus aureus (*S. aureus*), strain AJUL2 is deposited as a gentamycin, kanamycin and tobramycin-resistant strain derived from *S. aureus*, strain SH1000 through introduction of plasmid pSK5487M containing the gene *aacA-aphD* (encoding aminoglycoside N-acetyltransferase) and a chloramphenicol resistance gene (*cat*) for selection. NR-55216 was produced by resuspension of a lyophilized vial of deposited material in Tryptic Soy broth. Broth inoculum was added to Tryptic Soy broth containing 25 µg per mL chloramphenicol and grown for 1 day at 37°C in an aerobic atmosphere. The material from the initial growth was added to Tryptic Soy broth containing 25 µg per mL chloramphenicol, which was grown for 1 day at 37°C in an aerobic atmosphere to produce this lot. Quality control testing was completed using Tryptic Soy broth or agar containing 25 µg per mL chloramphenicol under propagation conditions unless otherwise noted.

Lot: 70052524

Manufacturing Date: 05MAY2022

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TEST	SPECIFICATIONS	RESULTS
Phenotypic Analysis Cellular morphology Colony morphology Motility (wet mount) Hemolysis Catalase VITEK® MS (MALDI-TOF)	Gram-positive cocci Report results Report results Report results Positive <i>S. aureus</i>	Gram-positive cocci Circular, convex, entire, smooth and cream (Figure 1) Non-motile β-hemolytic Positive <i>S. aureus</i> (99.9%)
Antibiotic Susceptibility Profile¹ Etest® antibiotic test strips 1 day at 35°C in an aerobic atmosphere on Mueller Hinton agar Gentamycin Kanamycin Tobramycin	Resistant Resistant Resistant	Resistant (8 µg per mL) ² Resistant (64 µg per mL) Resistant (6 µg per mL)
Genotypic Analysis Digital DNA-DNA hybridization (dDDH) ³ Next-Generation Sequencing (NGS) analysis for antimicrobial resistance genes ⁵ Gentamycin Kanamycin Tobramycin	≥ 70% for species identification Resistant Resistant Resistant	<i>S. aureus</i> (99.4%) ⁴ Resistant Resistant Resistant
Purity (post-freeze) 7 days at 37°C in an aerobic atmosphere with and without 5% CO ₂ on Tryptic Soy agar with 5% defibrinated sheep blood	Growth consistent with expected colony morphology	Growth consistent with expected colony morphology
Viability (post-freeze)	Growth	Growth

¹Minimum Inhibitory Concentration (MIC); Clinical & Laboratory Standards Institute (CLSI) M100-S28 (2018) or MIC Interpretation Guideline: European Committee on Antimicrobial Susceptibility Testing (EUCAST) (2023).

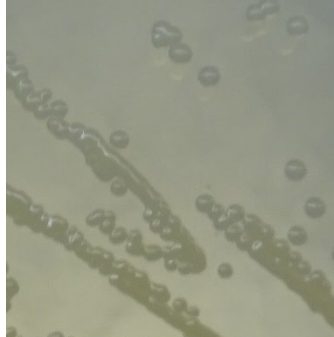
²The susceptibility result for this antibiotic is within one doubling dilution of specification, which is considered an equivalent result.

³Relatedness between bacterial strains has traditionally been determined using DDH. For additional information refer to Auch, A.F., et al. "Digital DNA-DNA Hybridization for Microbial Species Delineation by Means of Genome-to-Genome Sequence Comparison." *Stand. Genomic Sci.* 2 (2010): 117-134. PubMed: 21304684.

⁴The whole genome of *S. aureus*, strain AJUL2 (contig total length approximately 2.66 megabase pairs) was sequenced using the Illumina® MiSeq® system.

⁵*In silico* analysis of NGS data for antimicrobial resistance genes was performed using the Bacterial and Viral Bioinformatics Resource Center (BV-BRC), ResFinder and Pathogenwatch genome analysis tools.

Figure 1: Colony Morphology



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