

**Staphylococcus aureus, Strain AJUL4**

**Catalog No. NR-55218**

**Product Description:**

*Staphylococcus aureus* (*S. aureus*), strain AJUL4 is deposited as a spectinomycin-resistant strain derived from *S. aureus*, strain SH1000 through introduction of plasmid pSK5487M containing the gene *ant(9)-Ia* (encoding aminoglycoside nucleotidyltransferase) and a chloramphenicol resistance gene (*cat*) for selection. NR-55218 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: 70052528**

**Manufacturing Date: 05MAY2022**

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TEST	SPECIFICATIONS	RESULTS
<b>Phenotypic Analysis</b> 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 Non-motile β-hemolytic Positive <i>S. aureus</i> (99.9%)
<b>Antibiotic Susceptibility Profile<sup>1</sup></b> Etest® antibiotic test strips 1 day at 35°C in an aerobic atmosphere on Mueller Hinton agar Spectinomycin	Resistant	48 µg per mL <sup>2</sup>
<b>Genotypic Analysis</b> Digital DNA-DNA hybridization (dDDH) <sup>3</sup> Next-Generation Sequencing (NGS) analysis for antimicrobial resistance genes <sup>5</sup> Spectinomycin	≥ 70% for species identification  Resistant	<i>S. aureus</i> (99.4%) <sup>4</sup>  Resistant
<b>Purity (post-freeze)</b> 8 days at 37°C in an aerobic atmosphere with and without 5% CO <sub>2</sub> on Tryptic Soy agar with 5% defibrinated sheep blood	Growth consistent with expected colony morphology	Growth consistent with expected colony morphology
<b>Viability (post-freeze)</b>	Growth	Growth

<sup>1</sup>Minimum Inhibitory Concentration (MIC); MIC Interpretation Guideline: Clinical & Laboratory Standards Institute (CLSI) M100-S28 (2018) or European Committee on Antimicrobial Susceptibility Testing (EUCAST) Version 13.0 (2023)

<sup>2</sup>No CLSI or EUCAST interpretations of this antibiotic for *S. aureus* are currently available.

<sup>3</sup>Relatedness 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.

<sup>4</sup>The whole genome of *S. aureus*, strain AJUL4 (contig total length approximately 2.66 megabase pairs) was sequenced using the Illumina® MiSeq® system.

<sup>5</sup>*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.

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12 DEC 2023

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