

***Staphylococcus epidermidis*, Strain 12333**

Catalog No. NR-45861

Product Description:

Staphylococcus epidermidis (*S. epidermidis*), strain 12333 was isolated in November 1999 in California, USA. Strain 12333 is a vancomycin-intermediate *S. epidermidis* strain and was deposited as resistant to penicillin, oxacillin, clindamycin, erythromycin and gentamicin and sensitive to quinupristin/dalfopristin, chloramphenicol, rifampin and tetracycline. NR-45861 lot 70036693 was produced by inoculation of seed material into Tryptic Soy broth and grown for 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 for 1 day at 37°C in an aerobic atmosphere. Quality control testing was completed under propagation conditions unless otherwise noted.

Lot: 70036693

Manufacturing Date: 24JUN2020

TEST	SPECIFICATIONS	RESULTS
Phenotypic Analysis Colony morphology Cellular morphology Motility (wet mount) Hemolysis Biochemical characterization Catalase Coagulase VITEK® 2 Compact GP card Oxidase Urease Raffinose Voges Proskauer (VP) VITEK® MS (MALDI-TOF)	Report results Gram-positive cocci Report results Report results Positive Negative <i>S. epidermidis</i> Negative Positive Negative Positive <i>S. epidermidis</i>	Circular, convex, entire, smooth and white (Figure 1) Gram-positive cocci Non-motile Non-hemolytic Positive Negative <i>S. lentus</i> (91%) ¹ Negative ^{1,2} Positive ^{1,2} Negative ^{1,2} Positive ¹ <i>S. epidermidis</i> (99.9%)
Antibiotic Susceptibility Profile³ Cefinase™ Paper Disc Beta-lactamase Etest® antibiotic test strips 2 days at 37°C in an aerobic atmosphere on Mueller Hinton agar Teicoplanin Quinupristin/dalfopristin Ciprofloxacin VITEK® AST-GP78 card Cefoxitin screen Benzylpenicillin Oxacillin Gentamicin Ciprofloxacin Levofloxacin Moxifloxacin Clindamycin (inducible resistance) Erythromycin Clindamycin Linezolid Daptomycin Vancomycin Minocycline	Positive Intermediate Sensitive Resistant Report results Resistant Resistant Resistant Resistant Resistant Resistant Intermediate Negative Resistant Resistant Sensitive Non-susceptible Intermediate Sensitive	Positive Intermediate (24 µg/mL) Resistant (38 µg/mL) ⁴ Resistant (6 µg/mL) Inconclusive ⁵ Resistant (≥ 0.5 µg/mL) Resistant (0.5 µg/mL) Resistant (≥ 16 µg/mL) Resistant (2 to 4 µg/mL) Resistant (4 µg/mL) Intermediate (1 µg/mL) Negative Resistant (≥ 8 µg/mL) Resistant (≥ 4 µg/mL) Sensitive (2 µg/mL) Non-susceptible (2 µg/mL) Intermediate (8 µg/mL) Sensitive (≤ 0.5 µg/mL)

TEST	SPECIFICATIONS	RESULTS
VITEK® AST-GP78 card (continued) Tetracycline Tigecycline Nitrofurantoin Rifampicin Trimethoprim/sulfamethoxazole	Sensitive Sensitive Sensitive Sensitive Resistant	Sensitive (≤ 1 µg/mL) Sensitive (≤ 0.12 µg/mL) Sensitive (≤ 16 µg/mL) Sensitive (≤ 0.5 µg/mL) Resistant (80 to 160 µg/mL)
Genotypic Analysis Sequencing of 16S ribosomal RNA gene (~ 1470 base pairs)	≥ 99% sequence identity to <i>S. epidermidis</i> type strain (GenBank: L37605)	99.9% sequence identity to <i>S. epidermidis</i> type strain (GenBank: L37605)
Purity (post-freeze) 7 days at 37°C in an aerobic atmosphere with 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

¹The VITEK® 2 Compact (GP card) identified NR-45861 as *S. lentus*. Additional individual biochemical testing was completed and was consistent with *S. epidermidis*. For additional information on the differentiating characteristics of *S. epidermidis* and *S. lentus*, please refer to Schleifer, K. H. and J. A. Bell. "Family VIII. *Staphylococcaceae* fam. nov." In De Vos, P., et al. (Ed.) *Bergey's® Manual of Systematic Bacteriology, 2nd Edition, Volume 3*. (2009) New York: Springer-Verlag.

²*S. epidermidis* is expected to be positive for urease and negative for oxidase and raffinose utilization. *S. lentus* is expected to be negative for urease and positive for oxidase and raffinose utilization.

³Minimum Inhibitory Concentration (MIC); MIC Interpretation Guideline: CLSI M100-S28 (2018)

⁴*S. epidermidis*, strain 12333 was deposited as sensitive to quinupristin/dalfopristin and was found to be sensitive in the previous lot but showed an MIC of 38 µg/mL (interpreted as resistant) for quinupristin/dalfopristin during QC testing. Testing was performed in duplicate.

⁵The cefoxitin screen was performed in duplicate and resulted in a negative result and a positive result. The previous lot of NR-45861 had a negative cefoxitin screen. However, for coagulase-negative *Staphylococcal* (CoNS) species, it has been reported that VITEK cards can fail to detect cefoxitin resistance in *mecA* positive strains. For addition information about detection of methicillin-resistant CoNS strains, please refer to Johnson, K. N., K. Andreacchio and P. H. Edelstein. "Detection of Methicillin-Resistant Coagulase-Negative *Staphylococci* by the VITEK® 2 System." *J. Clin. Microbiol.* 52 (2014): 3196-3199. PubMed: 1500504.

Figure 1: Colony Morphology



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04 DEC 2020

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