

**Staphylococcus epidermidis, Strain HIP4680**

**Catalog No. NR-45862**

**Product Description:** *Staphylococcus epidermidis* (*S. epidermidis*), strain HIP4680 was isolated in 1996 in Virginia, USA from the blood of a 49-year-old female cancer patient with a bloodstream infection who had received an extended course of vancomycin therapy. *S. epidermidis*, strain HIP4680 is a vancomycin-intermediate *S. epidermidis* (VISE) strain.

**Lot<sup>1</sup>: 62471647**

**Manufacturing Date: 03APR2014**

TEST	SPECIFICATIONS	RESULTS
<b>Phenotypic Analysis</b> Cellular morphology Colony morphologies <sup>2,3</sup>  Motility (wet mount) Hemolysis <sup>2</sup> Biochemical characterization Catalase Coagulase <sup>4</sup> VITEK <sup>®</sup> 2 Compact (GP card) VITEK <sup>®</sup> MS (MALDI-TOF)	Gram-positive cocci Report results  Report results Report results  Positive Report results ≥ 90% probability of being <i>S. epidermidis</i> Consistent with <i>S. epidermidis</i>	Gram-positive cocci Colony type 1: Circular, low convex, entire, smooth and white (Figure 1) Colony type 2: Circular, low convex, entire, smooth and gray (Figure 1) Non-motile β-hemolytic  Positive Negative <i>S. epidermidis</i> (99% probability) <sup>5</sup> <i>S. epidermidis</i> (99.9%)
<b>Antibiotic Susceptibility Profile</b> VITEK <sup>®</sup> (AST-GP71card) <sup>6</sup> Beta-lactamase <sup>7</sup> Cefoxitin screen Benzylpenicillin Oxacillin Gentamicin Ciprofloxacin Levofloxacin Moxifloxacin Clindamycin (inducible resistance) Erythromycin Clindamycin Quinupristin/dalfopristin Linezolid Daptomycin Vancomycin Minocycline Tetracycline Tigecycline Nitrofurantoin Rifampicin Trimethoprim/sulfamethoxazole Etest <sup>®</sup> antibiotic test strips <sup>9</sup> Chloramphenicol <sup>10</sup> Teicoplanin <sup>10</sup>	Report results Report results Report results Resistant Resistant Resistant Resistant Report results Report results Report results Report results Report results Report results Sensitive Report results Report results Intermediate Report results Sensitive Report results Report results Report results Resistant  Report results Intermediate	Positive Positive Resistant (≥ 0.5 µg/mL) Resistant (≥ 4 µg/mL) Resistant (≥ 16 µg/mL) Resistant (≥ 8 µg/mL) Resistant (≥ 8 µg/mL) Resistant (= 4 µg/mL) Negative Resistant (≥ 8 µg/mL) Resistant (≥ 8 µg/mL) Sensitive (≤ 0.25 µg/mL) Sensitive (= 2 µg/mL) Non-susceptible (= 2 µg/mL) Intermediate (= 8 µg/mL) Sensitive (≤ 0.5 µg/mL) Sensitive (≤ 1 µg/mL) Sensitive (≤ 0.12 µg/mL) <sup>8</sup> Sensitive (≤ 16 µg/mL) Sensitive (≤ 0.5 µg/mL) Resistant (= 80 µg/mL)  Sensitive (= 8 µg/mL) Intermediate (= 12 µg/mL)
<b>Genotypic Analysis</b> Sequencing of 16S ribosomal RNA gene (~ 1490 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)

TEST	SPECIFICATIONS	RESULTS
Purity (post-freeze) <sup>11</sup>	Consistent with expected colony morphology	Consistent with expected colony morphology
Viability (post-freeze) <sup>2</sup>	Growth	Growth

<sup>1</sup>*S. epidermidis*, strain HIP4680 was deposited to BEI Resources as part of the NARSA collection. NR-45862 was produced by inoculation of the deposited material into Tryptic Soy broth and grown 28 hours at 37°C in an aerobic atmosphere. Broth inoculum was added to Tryptic Soy agar with 5% defibrinated sheep blood kolles which were grown 22 hours at 37°C in an aerobic atmosphere to produce this lot.

<sup>2</sup>21 hours at 37°C in an aerobic atmosphere on Tryptic Soy agar with 5% defibrinated sheep blood

<sup>3</sup>Two colony types were observed. Plating of the individual colony types showed reversion to colony type 1 after 24 hours but mixed colony types after 7 days. The 16S ribosomal RNA gene of each colony type was sequenced and found to be consistent with the other colony type and with *S. epidermidis*. The observation of mixed colonies sizes has been reported previously for *S. epidermidis*. See Wu, M. et al. "Vancomycin and Daptomycin Pharmacodynamics Differ against a Site-Directed *Staphylococcus epidermidis* Mutant Displaying the Small-Colony-Variant Phenotype." *Antimicrob. Agents Chemother.* 53 (2009): 3992-3995. PubMed: 19564372.

<sup>4</sup>4 hours at 37°C in rabbit serum with 0.15% EDTA (Coagulase Plasma BBL™ 240827)

<sup>5</sup>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>6</sup>Minimum Inhibitory Concentration (MIC); MIC Interpretation Guideline: CLSI M100-S22 (2012)

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

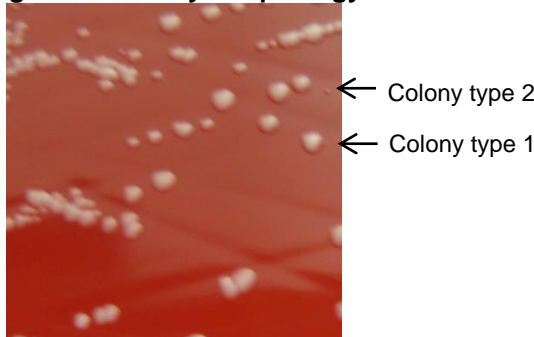
<sup>8</sup>MIC Interpretation Guideline: EUCAST Version 4.0 (2014)

<sup>9</sup>24 hours at 37°C in an aerobic atmosphere on Mueller Hinton agar

<sup>10</sup>For both chloramphenicol (bioMérieux Etest® 412308) and teicoplanin (bioMérieux Etest® 412459), a MIC ≤ 8 µg/mL is sensitive, a MIC = 16 µg/mL is intermediate, and a MIC ≥ 32 µg/mL is resistant.

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

Figure 1: Colony Morphology



Date: 16 SEP 2014

Signature:

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