

## Staphylococcus epidermidis, Strain 01-004-2919

### Catalog No. NR-45888

**For research use only. Not for use in humans.**

#### Contributor:

Network on Antimicrobial Resistance in *Staphylococcus aureus* (NARSA), NIAID, NIH, USA

#### Manufacturer:

BEI Resources

#### Product Description:

Bacteria Classification: *Staphylococcaceae*, *Staphylococcus*

Species: *Staphylococcus epidermidis*

Strain: 01-004-2919

NARSA Catalog Number: NRS53

Original Source: *Staphylococcus epidermidis* (*S. epidermidis*), strain 01-004-2919 was isolated in January 2001 from peritoneal fluid of a 31-year-old male in Pennsylvania, USA.<sup>1</sup>

Comments: *S. epidermidis*, strain 01-004-2919 is a vancomycin-intermediate *S. epidermidis* (VISE) strain and was deposited as positive for *mec* and negative for *vanA*, *vanB*, *vanC*, *vanD* and *vanE*.

*S. epidermidis* is a Gram-positive, cluster-forming, coagulase-negative coccus which is part of the normal flora of the skin and nostrils. Recently, it has become a common cause of hospital-acquired infections, particularly infections on implanted medical devices.<sup>2</sup> A number of factors, such as biofilm formation, small colony variants and a reduced susceptibility to a number of antibiotics, contribute to its success as a cause of nosocomial infections.<sup>3,4,5,6,7</sup> Approximately 75 to 90% of hospital isolates are methicillin-resistant *S. epidermidis* (MRSE) and an increasing number of isolates have reduced susceptibility to vancomycin.<sup>2</sup> Similar to *S. aureus*, methicillin resistance is conferred by the *mecA* gene, whereas the reduced susceptibility to vancomycin is due to cell wall alterations including altered cross-linking and thickening of the wall.<sup>8,9,10</sup> It is believed that *S. epidermidis* can serve as a reservoir for antibiotic resistant genes and other genomic islands for *S. aureus* which can acquire the genes through uni-directional horizontal gene transfer.<sup>2</sup>

#### Material Provided:

Each vial contains approximately 0.5 mL of bacterial culture in Tryptic Soy broth supplemented with 10% glycerol.

Note: If homogeneity is required for your intended use, please purify prior to initiating work.

#### Packaging/Storage:

NR-45888 was packaged aseptically in cryovials. The product is provided frozen and should be stored at -60°C or colder

immediately upon arrival. For long-term storage, the vapor phase of a liquid nitrogen freezer is recommended. Freeze-thaw cycles should be avoided.

#### Growth Conditions:

##### Media:

Brain Heart Infusion broth or Tryptic Soy broth or equivalent Brain Heart Infusion agar or Tryptic Soy agar or Tryptic Soy agar with 5% defibrinated sheep blood or equivalent

##### Incubation:

Temperature: 37°C

Atmosphere: Aerobic

##### Propagation:

1. Keep vial frozen until ready for use, then thaw.
2. Transfer the entire thawed aliquot into a single tube of broth.
3. Use several drops of the suspension to inoculate an agar slant and/or plate.
4. Incubate the tube, slant and/or plate at 37°C for 1 day.

#### Citation:

Acknowledgment for publications should read "The following reagent was provided by the Network on Antimicrobial Resistance in *Staphylococcus epidermidis* (NARSA) for distribution through BEI Resources, NIAID, NIH: *Staphylococcus epidermidis*, Strain 01-004-2919, NR-45888."

#### Biosafety Level: 2

Appropriate safety procedures should always be used with this material. Laboratory safety is discussed in the following publication: U.S. Department of Health and Human Services, Public Health Service, Centers for Disease Control and Prevention, and National Institutes of Health. [Biosafety in Microbiological and Biomedical Laboratories \(BMBL\)](#), 6th ed. Washington, DC: U.S. Government Printing Office, 2020.

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#### References:

1. NARSA, NRS53
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5. 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.
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7. von Eiff, C., et al. "Bloodstream Infections Caused by Small-Colony Variants of Coagulase-Negative *Staphylococci* Following Pacemaker Implantation." Clin. Infect. Dis. 29 (1999): 932-934. PubMed: 10589914.
8. Sujatha, S. and I. Praharaaj. "Glycopeptide Resistance in Gram-Positive Cocci: A Review." Interdiscip. Perspect. Infect. Dis. 2012 (2012): 781679. PubMed: 22778729.
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