Staphylococcus epidermidis, Strain HIP4680

Catalog No. NR-45862

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Contributor:
The Network on Antimicrobial Resistance in *Staphylococcus aureus* (NARSA), NIAID, NIH

Manufacturer:
BEI Resources

Product Description:
Bacteria Classification: *Staphylococcaceae, Staphylococcus*
Species: *Staphylococcus epidermidis*
Strain: HIP4680 (also referred to as 5289[1])
NARSA Catalog Number: NRS8
Original Source: *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.[2,3]
Comments: *S. epidermidis*, strain HIP4680 is a vancomycin-intermediate *S. epidermidis* (VISE) strain that was deposited as positive for *mec;* negative for *vanA*, *vanB*, *vanC*, *vanD* and *vanE*; resistant to penicillin, oxacillin, clindamycin, erythromycin, ciprofloxacin, trimethoprim-sulfamethoxazole, intermediate to gentamicin and sensitive to chloramphenicol, rifampin and tetracycline.[1-3] This is the first reported case of a bloodstream infection linked to a VISE strain in the United States.[2]

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.[4] 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.[5-9] Approximately 75 to 90% of hospital isolates are methicillin-resistant *S. epidermidis* (MRSE) and an increasing number of isolates have reduced susceptibility to vancomycin.[4] 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.[4,6,10-12] 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.[4]

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-45862 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 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 18 to 24 hours.

Citation:
Acknowledgment for publications should read "The following reagent was provided by the Network on Antimicrobial Resistance in *Staphylococcus aureus* (NARSA) for distribution by BEI Resources, NIAID, NIH: *Staphylococcus epidermidis*, Strain HIP4680, NR-45862."

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. 5th ed. Washington, DC: U.S. Government Printing Office, 2009; see www.cdc.gov/biosafety/publications/bmbl5/index.htm.

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