

Product Information Sheet for NR-30549

***Staphylococcus aureus*, Strain HI111 (MRSA)**

Catalog No. NR-30549

For research use only. Not for human use.

Contributor:

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Manufacturer:

BEI Resources

Product Description:

Bacteria Classification: *Staphylococcaceae*, *Staphylococcus*

Species: *Staphylococcus aureus*

Strain: HI111

Original Source: *Staphylococcus aureus* (*S. aureus*), strain HI111 was isolated from an abscess on the axilla of a 12-year-old male.¹

Comments: *S. aureus*, strain HI111 was deposited as a methicillin-resistant *S. aureus* (MRSA) strain. This strain is also reported to be resistant to oxacillin, erythromycin and penicillin and sensitive to tetracycline, clindamycin, vancomycin, ciprofloxacin, rifampin, linezolid and ceftriaxone. Strain HI111 was also deposited as positive for *mec* (subtype IV); *pvl*⁺; pulsed-field type USA300; pulsed-field gel electrophoresis type 6; *cap5* positive; and low virulence toward *Caenorhabditis elegans*.¹ The complete genome sequence of *S. aureus*, strain HI111 is available (GenBank: [AIVO00000000](https://www.ncbi.nlm.nih.gov/nuclseq/148000000)). Note: Methicillin is no longer clinically used, however, the term methicillin-resistant *Staphylococcus aureus* (MRSA) continues to be used to describe *Staphylococcus aureus* strains resistant to all penicillins.

S. aureus is a Gram-positive, cluster-forming coccus that normally inhabits human nasal passages, skin and mucus membranes. It is also a human pathogen and causes a variety of pus-forming infections as well as food-poisoning and toxic shock syndrome. In 1961, two years after the introduction of methicillin, a penicillinase-resistant penicillin, *S. aureus* developed methicillin-resistance due to acquisition of the *mecA* gene. For the last forty-five years hospital-acquired (HA) MRSA strains have disseminated worldwide. More recently, MRSA strains have been isolated that are not hospital acquired and are referred to as community-associated (CA) MRSA. CA-MRSA strains differ phenotypically and genotypically from HA-MRSA strains and they are more frequently recovered from skin and soft tissue sources rather than post-operative wounds.^{2,3}

Material Provided:

Each vial contains approximately 0.5 mL of bacterial culture in

0.5X 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-30549 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:

Tryptic Soy broth or Brain Heart Infusion broth or equivalent
Tryptic Soy agar with 5% defibrinated sheep blood or Brain Heart Infusion agar 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 obtained through BEI Resources, NIAID, NIH: *Staphylococcus aureus*, Strain HI111 (MRSA), NR-30549."

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/od/ohs/biosfty/bmbl5/bmbl5toc.htm.

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References:

1. D. Mukundan, Personal Communication.
2. Deurenberg, R. H. and E. E. Stobberingh. "The Evolution of *Staphylococcus aureus*." *Infect. Genet. Evol.* 8 (2008): 747-763. PubMed: 18718557.
3. Davis, S. L., et al. "Epidemiology and Outcomes of Community-Associated Methicillin-Resistant *Staphylococcus aureus* Infection." *J. Clin. Microbiol.* 45 (2007): 1705-1711. PubMed: 17392441.

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