

Staphylococcus aureus, Strain USA300-0114

Catalog No. NR-46070

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: USA300-0114

NARSA Catalog Number: NRS384

Original Source: *Staphylococcus aureus* (*S. aureus*), strain USA300-0114 was isolated from a wound in Mississippi, USA.¹

Comments: *S. aureus*, strain USA300-0114 is a community-acquired methicillin-resistant *S. aureus* (CA-MRSA) strain. Outbreaks of this strain have been reported in correctional facilities (located in MS, GA, TN, TX, and CA); athletic teams (located in PA and CA); and male homosexual behavior (observed in CA).¹⁻³ Strain USA300-0114 was deposited as resistant to erythromycin and tetracycline; positive for *mec* (subtype IV); *pvl*⁺; MLST sequence type (ST) 8; eGenomic *spa* type 1, eGenomic *spa* repeats YHGFMQBLO; Ridom *spa* type t008; *agr* grp I.¹ Note: Methicillin is no longer clinically used, however, the term methicillin-resistant *Staphylococcus aureus* (MRSA) continues to be used to describe *S. 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. These 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.^{4,5}

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-46070 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 aureus*, Strain USA300-0114, NR-46070."

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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References:

1. NARSA, NRS384.
2. Centers for Disease Control and Prevention. "Methicillin-Resistant *Staphylococcus aureus* Infections among Competitive Sports Participants-Colorado, Indiana, Pennsylvania, and Los Angeles County, 2000-2003." Morb. Mortal. Wkly. Rep. 52 (2003): 793-795. PubMed: 12931079.
3. Centers for Disease Control and Prevention. "Methicillin-Resistant *Staphylococcus aureus* Infections in Correctional Facilities-Georgia, California, and Texas 2001-2003." Morb. Mortal. Wkly. Rep. 52 (2003): 992-996. PubMed: 14561958.
4. Deurenberg, R. H. and E. E. Stobberingh. "The Evolution of *Staphylococcus aureus*." Infect. Genet. Evol. 8 (2008): 747-763. PubMed: 18718557.
5. 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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