**Staphylococcus aureus**, Strain CA-78

Catalog No. NR-46188

For research use only. Not for human use.

Contributor:
Centers for Disease Control and Prevention, Atlanta, Georgia, USA

Manufacturer:
BEI Resources

**Product Description:**

*Bacteria Classification:* Staphylococcaceae, Staphylococcus  
*Species:* Staphylococcus aureus  
*Strain:* CA-78  
*NARSA Catalog Number:* NRS659  
*Original Source:* Staphylococcus aureus (S. aureus), strain CA-78 was isolated in 2005 from lung fluid of a 1-year-old female ICU patient with empyema and pneumonia in California, USA.

*Comments:* S. aureus, strain CA-78 is a clinically-associated methicillin-resistant *S. aureus* (MRSA) strain. Strain CA-78 was deposited as positive for mec (subtype IV); positive for PVL; negative for tsst; pulsed-field type USA300.  
S. aureus, strain CA-78 is a USA300 isolate. USA300 isolates have the same MLST profile (ST 8), SCCmec (subtype IV), spa repeats (YHGFMBOQLO), Ridom spa type (t008), contain the PVL and arginine catabolic mobile element (ACME) genes and are usually resistant to both erythromycin and β-lactams. USA300 is the most common cause of community-associated MRSA infection and an increasing cause of hospital-acquired infections.  
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.

**Material Provided:**

Each vial contains approximately 0.5 mL of bacterial culture in Brain Heart Infusion broth supplemented with 10% glycerol.

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

**Packaging/Storage:**

NR-46188 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 1 day.

**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 CA-78, NR-46188.”

**Biosafety Level:** 2


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**References:**

1. NARSA, NRS659

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