

Staphylococcus aureus, Strain CA-629

Catalog No. NR-46271

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Contributor:

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Manufacturer:

BEI Resources

Product Description:

Bacteria Classification: *Staphylococcaceae*, *Staphylococcus*

Species: *Staphylococcus aureus*

Strain: CA-629

NARSA Catalog Number: NRS745

Original Source: *Staphylococcus aureus* (*S. aureus*), strain CA-629 was isolated in 2006 from the cerebral spinal fluid of a 58-year-old male patient in Georgia, USA.¹

Comments: *S. aureus*, strain CA-629 is a clinically-associated methicillin-resistant *S. aureus* (MRSA) strain. Strain CA-629 was deposited as positive for *mec* (subtype V); negative for PVL and *tst*; and pulsed-field type 1000.¹ *S. aureus*, strain CA-629 is a USA1000 isolate. USA1000 isolates have the same MLST profile (ST 59), *SCCmec* (subtype IV or V), *agr* group (I), and *spa* repeats (ZDGDGDEB) and most are resistant to erythromycin.^{2,3} USA1000 is associated with sporadic outbreaks of community-acquired infections, although there have been reports of localized pockets of higher carriage rates and risk of infection.^{2,3} 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 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-46271 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-629, NR-46271."

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, NRS745
2. Diep, B. A., et al. "Roles of 34 Virulence Genes in the Evolution of Hospital- and Community-Associated Strains of Methicillin-Resistant *Staphylococcus aureus*." J. Infect. Dis. 193 (2006): 1495-1503. PubMed: 16652276.
3. Pan, E. S., et al. "Population Dynamics of Nasal Strains of Methicillin-Resistant *Staphylococcus aureus* and Their Relation to Community-Associated Disease Activity." J. Infect. Dis. 192 (2005): 811-818. PubMed: 16088830.
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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