Product Information Sheet for NR-46261

Staphylococcus aureus, Strain TN-112

Catalog No. NR-46261

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: TN-112
NARSA Catalog Number: NRS732
Original Source: *Staphylococcus aureus* (*S. aureus*), strain TN-112 is a known clinically associated strain that was isolated in Tennessee, USA.[1]
Comments: *S. aureus*, strain TN-112 is a methicillin-resistant *S. aureus* (MRSA) strain. Strain TN-112 was deposited as positive for *mec* (subtype IV); positive for PVL; negative for *tsst;* and pulsed-field type USA300.[1] *S. aureus,* strain TN-112 is a USA300 isolate. USA300 isolates have the same MLST profile (ST 8), SCC*mec* (subtype IV), *spa* repeats (YHGFMBQBLO), Ridom *spa* type (t008), contain the PVL and arginine catabolic mobile element (ACME) genes and are usually resistant to both erythromycin and β-lactams.[2-6] USA300 is the most common cause of community-associated MRSA infection and an increasing cause of hospital-acquired infections.[2] 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.[7,8]

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-46261 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 TN-112, NR-46261."

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, NRS732
2. McDougal, L. K., et al. "Pulsed-Field Gel Electrophoresis Typing of Oxacillin-Resistant *Staphylococcus aureus* Isolates from the United States: Establishing a National Database." J. Clin. Microbiol. 41 (2003): 5113-5120. PubMed: 14605147.
3. Hudson, L. O., et al. "Differences in Methicillin-Resistant *Staphylococcus aureus* Strains Isolated from Pediatric and Adult Patients from Hospitals in a Large County in California." J. Clin. Microbiol. 50 (2012): 573-579. PubMed: 22205805.
4. Liu, C., et al. "A Population-Based Study of the Incidence and Molecular Epidemiology of Methicillin-Resistant *Staphylococcus aureus* Disease in San Francisco, 2004–2005." Clin. Infect. Dis. 46 (2008): 1637-1646. PubMed: 18433335.
5. Hiramatsu, K., et al. "Genomic Basis for Methicillin Resistance in *Staphylococcus aureus*." Infect. Chemother. 45 (2013): 117-136. PubMed: 24265961.
6. Diekema, D. J., et al. "Continued Emergence of USA300 Methicillin-Resistant *Staphylococcus aureus* in the United States: Results from a Nationwide Surveillance Study." Infect. Control Hosp. Epidemiol. 35 (2014): 285-292. PubMed: 24521595.
7. Deurenberg, R. H. and E. E. Stobberingh. "The Evolution of *Staphylococcus aureus*." Infect. Genet. Evol. 8 (2008): 747-763. PubMed: 18718557.
8. 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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