Product Information Sheet for NR-45872

Staphylococcus aureus, Strain HIP07930

Catalog No. NR-45872

For research use only. Not for human use.

Contributor:
NARSA

Manufacturer:
BEI Resources

Product Description:
Bacteria Classification: *Staphylococcaceae, Staphylococcus*
Species: *Staphylococcus aureus*
Strain: HIP07930 (also referred to as USA600; 99758)
NARSA Catalog Number: NRS22
Original Source: *Staphylococcus aureus* (*S. aureus*), strain HIP07930 was isolated in 1999 from the bloodstream of an adult female ICU patient in New York, USA.[1]
Comments: *S. aureus*, strain HIP07930 is a hosptial-acquired methicillin-resistant *S. aureus* (HA-MRSA) strain. Strain HIP07930 was deposited as resistant to erythromycin, clindamycin, trimethoprim/sulfamethoxazole, gentamicin and levofloxacin; positive for *mec* (subtype II); negative for PVL, *tsst*, *sea*, *seb*, *sec*, *sed* and *see;* MLST sequence type (ST) 45; pulsed-field type USA600; eGenomic *spa* type 10, eGenomic *spa* repeats A2AKEEMBKM*;* Ridom *spa* type t266; *agr* group I.[1] *S. aureus,* strain HIP07930 is a USA600 isolate. USA600 isolates have the same MLST profile (ST 45), SCC*mec* (subtype II or IV), *agr* group (I) and *spa* repeats (A2AKEEMBKB). They are PVL negative and resistant to erthromycin and clindamycin.[2,3] Isolates are predominantly found in nares of healthy individuals and bloodstream infections.[4] These isolates are associated with a higher rate of clinical failure and mortality, particularly those with a heterogeneous vancomycin-intermediate *S. aureus* (hVISA) phenotype. While USA600 isolates are uncommon the United States, the clonally-related Berlin strain is widespread throughout Germany, the Netherlands, and Ontario, Cananda.[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.[5,6]

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-45872 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 HIP07930, NR-45872."

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, NRS22.
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. Moore, C. L., et al. “USA600 (ST45) Methicillin-Resistant *Staphylococcus aureus* Bloodstream Infections in Urban Detroit.” J. Clin. Microbiol. 48 (2010): 2307-2310. PubMed: 20335422.
4. Stegger, M., et al. “Genome Sequence of *Staphylococcus aureus* Strain CA-347, an USA600 Methicillin-Resistant Isolate.” Genome Announc. 1 (2013): e00517-13. PubMed: 23887918.
5. Deurenberg, R. H. and E. E. Stobberingh. “The Evolution of *Staphylococcus aureus*.” Infect. Genet. Evol. 8 (2008): 747-763. PubMed: 18718557.
6. 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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