

Staphylococcus aureus, Strain RN0027

Catalog No. NR-45936

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Contributor:

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Manufacturer:

BEI Resources

Product Description:

Bacteria Classification: *Staphylococcaceae*, *Staphylococcus*

Species: *Staphylococcus aureus*

Strain: RN0027

NARSA Catalog Number: NRS134

Original Source: *Staphylococcus aureus* (*S. aureus*), strain RN0027 is lysogenic for phages Φ 13 and 80 α and was derived from *S. aureus*, strain RN0025 (NRS133) through lysogenization with phage 80 α . In turn, strain RN0025 was derived from UV treatment of *S. aureus*, strain RN1 (NCTC8325, NRS77).¹⁻⁴

Comments: *S. aureus*, strain RN0027 is a methicillin-sensitive *S. aureus* (MSSA) strain.^{3,4} *S. aureus*, strain RN0027 was deposited as positive for *sak*; negative for *mecA*, *rsbU* and *hly*; MLST sequence type (ST) 8; eGenomic *spa* type 59, eGenomic *spa* repeats YHGGFMBQBLO; Ridom *spa* type t211; *agr* group I. Due to the integration of Φ 13 in *hly*, this strain does not produce beta-hemolysin, but does produce alpha, delta and gamma-hemolysins.⁴ Note: Methicillin is no longer clinically used, however, the terms methicillin-resistant *Staphylococcus aureus* (MRSA) and methicillin-sensitive *Staphylococcus aureus* (MSSA) continue to be used to describe the susceptibility of *S. aureus* strains to the 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. Subsequently, MRSA infections have become widespread in both hospital and community settings.⁵ As compared to MSSA infections, MRSA infections tend to have more complications such as a higher recurrence rate and higher mortality.⁶⁻⁸

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-45936 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 RN0027, NR-45936."

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/bmb15/index.htm.

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References:

1. Novick, R. "Properties of a Cryptic High-frequency Transducing Phage in *Staphylococcus aureus*." Virology 33 (1967): 155-166. PubMed: 4227577.
2. Lindsay, J. A., et al. "The Gene for Toxic Shock Toxin is Carried by a Family of Mobile Pathogenicity Islands in *Staphylococcus aureus*." Mol. Microbiol. 29 (1998): 527-543. PubMed: 9720870.
3. NARSA, NRS134
4. Herbert, S., et al. "Repair of Global Regulators in *Staphylococcus aureus* 8325 and Comparative Analysis with Other Clinical Isolates." Infect. Immun. 78 (2010): 2877-2889. Pubmed: 20212089.
5. Deurenberg, R. H. and E. E. Stobberingh. "The Evolution of *Staphylococcus aureus*." Infect. Genet. Evol. 8 (2008): 747-763. PubMed: 18718557.
6. Park, D. A., et al. "Impact of Methicillin-Resistance on Mortality in Children and Neonates with *Staphylococcus aureus* Bacteremia: A Meta-Analysis." Infect. Chemother. 45 (2013): 202-210. PubMed: 24265968.
7. Porto, J. P., et al. "Active Surveillance to Determine the Impact of Methicillin Resistance on Mortality in Patients with Bacteremia and Influences of the Use of Antibiotics on the Development of MRSA Infections." Rev. Soc. Bras. Med. Trop. 46 (2013): 713-718. PubMed: 24474012.
8. Inoue, S., et al. "Comparison of Clinical Features and Outcomes of *Staphylococcus aureus* Vertebral Osteomyelitis Caused by Methicillin-Resistant and Methicillin-Sensitive Strains." SpringerPlus 2 (2013): 283. PubMed: 23853753.

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