

***Staphylococcus aureus*, Strain RN9121**

Catalog No. NR-45956

For research use only. Not for human use.

Contributor:

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Manufacturer:

BEI Resources

Product Description:

Bacteria Classification: *Staphylococcaceae*, *Staphylococcus*

Species: *Staphylococcus aureus*

Strain: RN9121

NARSA Catalog Number: NRS154

Original Source: *Staphylococcus aureus* (*S. aureus*), strain RN9121 is an *agr* null derivative of the *agr* group IV prototype strain RN4850 (NRS153), with *tetM* replacing *agr*.^{1,2}

Comments: *S. aureus*, strain RN9121 is an exfoliatin-producing, methicillin-sensitive *S. aureus* (MSSA) strain that was developed for research purposes.¹⁻³ Strain RN9121 was deposited as *agr::tetM* and resistant to tetracycline; positive for *eta*; negative for *mecA*; MLST sequence type (ST) 22; eGenomic *spa* type 113, eGenomic *spa* repeats TJEJNCMOMOKR; Ridom *spa* type t005.³ 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.⁴ As compared to MSSA infections, MRSA infections tend to have more complications such as a higher recurrence rate and higher mortality.⁵⁻⁷

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-45956 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 RN9121, NR-45956."

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. Jarraud, S., et al. "Exfoliatin-Producing Strains Define a Fourth *agr* Specificity Group in *Staphylococcus aureus*." J. Bacteriol. 182 (2000): 6517-6522. PubMed: 11053400.
2. Lyon, G. J., et al. "Rational Design of a Global Inhibitor of the Virulence Response in *Staphylococcus aureus*, Based in Part on Localization of the Site of Inhibition to the Receptor-Histidine Kinase, AgrC." Proc. Natl. Acad. Sci. USA 97 (2000): 13330-13335. PubMed: 11087872.
3. NARSA, NRS154
4. Deurenberg, R. H. and E. E. Stobberingh. "The Evolution of *Staphylococcus aureus*." Infect. Genet. Evol. 8 (2008): 747-763. PubMed: 18718557.
5. 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.
6. 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.
7. 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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