Staphylococcus aureus, Strain SR1129

Catalog No. NR-50506

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Manufacturer:
BEI Resources

Product Description:
Bacteria Classification: *Staphylococcaceae, Staphylococcus*
Species: *Staphylococcus aureus*
Strain: SR1129
Original Source: *Staphylococcus aureus* (*S. aureus*), strain SR1129 was isolated in 2011 from a human abscess in Texas, USA.[1,2]
Comments: *S. aureus,* strain SR1129 was deposited as resistant to oxacillin, ceftriaxone, erythromycin and levofloxacin; sensitive to ceftaroline, clindamycin, tetracycline, linezolid, trimethoprim/sulfamethoxazole, daptomycin, vancomycin and rifampin; positive for *mec* (subtype IV) and PVL; MLST sequencing type (ST) 8; pulsed-field gel electrophoresis (PFGE) type USA300.[1] *S. aureus*, strain SR1129 is a vancomycin-sensitive *S. aureus* (VSSA) strain.[1,2] This susceptible phenotype was identified using population analysis profiling with area under the curve (PAP-AUC) and Etest® GRD (glycopeptide resistance detection) methods.[2]

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.[3] Vancomycin has been the preferred antibiotic of choice for the treatment of MRSA infections.[4] However, there have now been MRSA strains isolated that also have reduced susceptibility or resistance to vancomycin.[5,6] It is believed that this decreased sensitivity primarily arises through mutations affecting the production of peptidoglycans, resulting in a thickened cell wall and a reduction of vancomycin at its site of action.[7] While much rarer, resistance can also occur through the acquisition of the vancomycin resistance gene, *vanA,* from *Enterococcus faecalis*.[5,7,8]

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-50506 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 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 obtained through BEI Resources, NIAID, NIH: *Staphylococcus aureus*, Strain SR1129, NR-50506."

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:

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4. Hiramatsu K. "Vancomycin-Resistant *Staphylococcus aureus*: A New Model of Antibiotic Resistance." Lancet Infect. Dis. 1 (2001): 147-155. PubMed: 11871491.
5. Hiramatsu, K., et al. "Methicillin-Resistant *Staphylococcus aureus* Clinical Strain with Reduced Vancomycin Susceptibility." J. Antimicrob. Chemother. 40 (1997): 135-136. Pubmed: 9249217.
6. Hanaki, H., et al. "Activated Cell-Wall Synthesis is Associated with Vancomycin Resistance in Methicillin-Resistant *Staphylococcus aureus* Clinical Strains Mu3 and Mu50." J. Antimicrob. Chemother. 42 (1998): 199-209. Pubmed: 9738837.
7. Howden, B. P., et al. "Reduced Vancomycin Susceptibility in *Staphylococcus aureus*, Including Vancomycin-Intermediate and Heterogeneous Vancomycin-Intermediate Strains: Resistance Mechanisms, Laboratory Detection, and Clinical Implications." Clin. Microbiol. Rev. 23 (2010): 99-139. PubMed: 20065327.
8. Chang, S., et al. "Infection with Vancomycin-Resistant *Staphylococcus aureus* Containing the *vanA* Resistance Gene." N. Engl. J. Med. 3 (2003): 1342-1347. PubMed: 12672861.

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