Product Information Sheet for NR-51189

Staphylococcus aureus, Strain SA-1199B

Catalog No. NR-51189

For research use only. Not for human use.

Contributor:
Glenn W. Kaatz, M.D., Professor Emeritus, Department of Medicine and Michael J. Rybak, Pharm.D., Ph.D., Professor, Department of Pharmacy & Medicine, Wayne State University, Detroit, Michigan, USA

Manufacturer:
BEI Resources

Product Description:
Bacteria Classification: *Staphylococcaceae, Staphylococcus*
Species: *Staphylococcus aureus*
Strain: SA-1199B
Original Source: *Staphylococcus aureus (S. aureus)*, strain SA-1199B was isolated in 1985 during ciprofloxacin treatment of a rabbit endocarditis model induced by infection with *S. aureus*, strain SA-1199. *S. aureus,* strain SA-1199 was isolated around 1980 from the bloodstream of a patient with endocarditis in Ann Arbor, Michigan, USA.[1-3]
Comments: *S. aureus,* strain SA-1199B was deposited as resistant to hydrophilic fluoroquinolones like ciprofloxacin.[1] Strain SA-1199B has increased transcription of the *norA* gene resulting in overexpression of NorA, a membrane-based multidrug efflux protein capable of transporting fluoroquinolones and other structurally unrelated compounds from the cell.[2,3] Strain SA-1199B also has a mutation in *grlA* gene encoding DNA topoisomerase IV A subunit, which contributes to its fluoroquinolone resistance.[4]

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]

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-51189 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 Mueller-Hinton broth[1] or equivalent
Brain Heart Infusion agar or Tryptic Soy agar or Tryptic Soy agar with 5% defibrinated sheep blood or Mueller-Hinton agar[1] 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 SA-1199B, NR-51189."

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. Kaatz, G. W. and M. J. Rybak, Personal Communication.
2. Kaatz, G. W., S. M. Seo and C. A. Ruble. "Mechanisms of Fluoroquinolone Resistance in *Staphylococcus aureus*." J. Infect. Dis. 163 (1991): 1080-1086. PubMed: 1850442.
3. Kaatz, G. W. et al. "The Emergence of Resistance to Ciprofloxacin During Treatment of Experimental *Staphylococcus aureus* Endocarditis." J. Antimicrob. Chemother.. 20 (1987): 753-758. PubMed: 3429376.
4. Kaatz, G. W., S. M. Seo and C. A. Ruble. "Efflux-Mediated Fluoroquinolone Resistance in *Staphylococcus aureus*." Antimicrob. Agents Chemother. 37 (1993): 1086-1094. PubMed: 8517696.
5. Deurenberg, R. H. and E. E. Stobberingh. "The Evolution of *Staphylococcus aureus*." Infect. Genet. Evol. 8 (2008): 747-763. PubMed: 18718557.
6. Kaatz, G. W., S. M. Seo and T. J. Foster. "Introduction of a *norA* Promoter Region Mutation into the Chromosome of a Fluoroquinolone-Susceptible Strain of *Staphylococcus aureus* using Plasmid Integration." Antimicrob. Agents Chemother. 9 (1999): 2222-2224. PubMed: 10471568.

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www.beiresources.org

E-mail: contact@beiresources.org
Tel: 800-359-7370
Fax: 703-365-2898