

Staphylococcus aureus, Strain HIP06297

Catalog No. NR-45868

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Contributor:

Network on Antimicrobial Resistance in *Staphylococcus aureus* (NARSA), NIAID, NIH

Manufacturer:

BEI Resources

Product Description:

Bacteria Classification: *Staphylococcaceae*, *Staphylococcus*

Species: *Staphylococcus aureus*

Strain: HIP06297 (also referred to as 98-489 smw)

NARSA Catalog Number: NRS17

Original Source: *Staphylococcus aureus* (*S. aureus*), strain HIP06297 was isolated in 1998 in New York, USA from the bloodstream of a 79-year-old male patient with end-stage renal failure who had a recent history of vancomycin therapy.^{1,2,3}

Comments: *S. aureus*, strain HIP06297 is a vancomycin-intermediate *S. aureus* (VISA) strain.^{1,2,3} *S. aureus*, strain HIP06297 was deposited as positive for *mec* (subtype II); negative for the vancomycin resistance genes; MLST sequencing type (ST) 5; eGenomic *spa* type 2, eGenomic *spa* repeats TJMBMDMGMK; Ridom *spa* type t002.¹ *S. aureus*, strain HIP06297 is reported to be resistant to erythromycin, ciprofloxacin and rifampin and susceptible to trimethoprim/sulfamethoxazole, chloramphenicol and tetracycline.^{2,3} It is hypothesized that this VISA strain emerged from a methicillin-resistant *S. aureus* (MRSA) strain isolated from the patient during an infection 3 months prior.³ Based on pulsed-field electrophoresis gel patterns, *S. aureus*, strain HIP06297 is closely related to the multi-drug resistant New York clone.^{3,4}

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 the acquisition of the *mecA* gene. Subsequently, MRSA infections have become widespread in both hospital and community settings.⁵ Vancomycin has been the preferred antibiotic of choice for the treatment of MRSA infections.⁶ However, there have now been MRSA strains isolated that also have reduced susceptibility or resistance to vancomycin.^{7,8} 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.⁹ While much rarer, resistance can also occur through the acquisition of the vancomycin resistance gene, *vanA*, from *Enterococcus faecalis*.^{7,9,10}

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-45868 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 provided by the Network on Antimicrobial Resistance in *Staphylococcus aureus* (NARSA) for distribution through BEI Resources, NIAID, NIH: *Staphylococcus aureus*, Strain HIP06297, NR-45868."

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 \(BMBL\)](#). 6th ed. Washington, DC: U.S. Government Printing Office, 2020.

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References:

1. NARSA, NRS17
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