# Bacteriophage Phi_2986B/Sa1912, Infectious for *Staphylococcus aureus*

## Catalog No. HM-694

## For research use only. Not for human use.

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### Manufacturer:
BEI Resources

### Product Description:
Virus Classification: *Caudovirales*, *Siphoviridae*, *Unclassified Siphoviridae*
Species: Bacteriophage Phi_2986B/Sa1912
Host: *Staphylococcus aureus*
Original Source: Bacteriophage phi_2986B/Sa1912 was isolated from human blood.[1]
Comments: Bacteriophage phi_2986B/Sa1912 is a reference genome for The Human Microbiome Project (HMP). HMP is an initiative to identify and characterize human microbial flora. The complete genome of bacteriophage phi_2986B/Sa1912 is scheduled to be sequenced at the J. Craig Venter Institute.
Note: HMP material is taxonomically classified by the depositor. Quality control of these materials is only performed to demonstrate that the material distributed by BEI Resources is identical to the deposited material.

Bacteriophage phi_2986B/Sa1912 is a highly selective virus that is extremely effective at lysing *Staphylococcus aureus*, a major causative agent for opportunistic and/or nosocomial infections, pyrogenic inflammatory diseases, food-poisoning and toxic shock syndrome.[3] Bacteriophage phi_2986B/Sa1912 belongs to the unclassified *Siphoviridae* family of viruses, which are non-enveloped and display noncontractile, filamentous tails, linear double-stranded DNA and hexagonal capsids.

### Material Provided:
Each vial contains approximately 0.5 mL of bacteriophage phi_2986B/Sa1912 in Luria-Burtani (LB) Broth supplemented with 10 mM $MgSO_4$ and 20% glycerol.

### Packaging/Storage:
HM-694 was packaged aseptically in cryovials. The product is provided frozen and should be stored at -20°C or colder immediately upon arrival. For long-term storage, the product should be stored at -80°C or colder or in the vapor phase of a liquid nitrogen freezer. Freeze-thaw cycles should be avoided.

### Growth Conditions:
Host: *S. aureus* (strain Sa1912 recommended)
Growth medium for host:
Brain Heart Infusion or equivalent
Brain Heart Infusion Agar or equivalent
Incubation of host:
Temperature: 37°C
Atmosphere: Aerobic
Propagation of host:
Note: Host homogeneity is recommended for your intended use, please colony-purify your bacterial host prior to use.
1. Keep bacterial stock frozen until ready for use, then thaw.
2. Transfer a thawed aliquot into a single tube of broth.
3. Incubate the tube at 37°C for 24 hours.

Growth Medium for bacteriophage:
LB Agar supplemented with 10 mM $MgSO_4$ or equivalent
LB Soft Agar Overlay (0.5%) supplemented with 10 mM $MgSO_4$ or equivalent
Incubation of host with bacteriophage:
Temperature: 30°C
Atmosphere: Aerobic
Propagation[3]:
1. Prior to opening the vial, an actively growing broth culture (24-hour incubation) of the recommended host strain should be prepared. Keep bacteriophage vial frozen until ready for use, then thaw.
2. Pre-warm plates and overlay the surface with 2.5 mL of melted 0.5% agar containing 1 to 2 drops of the host. Allow overlay to harden.
3. Prepare serial dilutions of thawed bacteriophage (if desired) and spot onto the plate. Allow to dry.
4. Incubate the plate at 30°C for 24 hours.

Note: Spotting the phage on plates makes visualizing the lysis easier. If phage is added directly to soft-agar before pouring plates, hazy or tiny plaques may be difficult to see. Resistant host bacteria may also mask plaque formation.
Cytopathic Effect: Lysis of *S. aureus*; individual plaques should be countable at higher dilutions

### Citation:
Acknowledgment for publications should read "The following reagent was obtained through BEI Resources, NIAID, NIH as part of the Human Microbiome Project: Bacteriophage Phi_2986B/Sa1912, Infectious for *Staphylococcus aureus*, HM-694."

### Biosafety Level: 1
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.

### Disclaimers:
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## References:

1. Dennis Bramford, personal communication
2. Matsuzaki, S., et al. "Bacteriophage Therapy: a Revitalized Therapy against Bacterial Infectious Diseases." J. Infect. Chemother. 11 (2005): 211-219. PubMed: 16258815.
3. Gaidelyte, A., M. Vaara and D. H. Bamford. "Bacteria, Phages and Septicemia." PLoS One 2 (2007): e1145. PubMed: 18188406.

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