**Product Information Sheet for HM-654**

**Bacteriophage Phi_TK1718sp/PAK, Infectious for Pseudomonas aeruginosa**

**Catalog No. HM-654**

For research use only. Not for human use.

**Contributor:**
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**Manufacturer:**
BEI Resources

**Product Description:**

**Virus Classification:** Caudovirales, Siphoviridae, Unclassified Siphoviridae  
**Family:** Siphoviridae  
**Strain/Isolate:** phi_TK1718sp/PAK  
**Host:** Pseudomonas aeruginosa  

**Original Source:** Bacteriophage phi_TK1718sp/PAK was isolated from TK1718 bacterium cultured from leg, foot or decubitus ulcers of a human patient.

**Comments:** Bacteriophage phi_TK1718sp/PAK (HMP ID 9764) 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_TK1718sp/PAK is currently being 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_TK1718sp/PAK is a highly selective virus that is extremely effective at lysing Pseudomonas aeruginosa (P. aeruginosa), the second most common pathogen responsible for hospital-acquired bacterial pneumonia and the first causative agent of morbidity and mortality in cystic fibrosis patients. Bacteriophage phi_TK1718sp/PAK belongs to the unclassified Siphoviridae family of viruses, which are non-enveloped and display long, noncontractile, filamentous tails, linear dsDNA, and hexagonal capsids.

**Material Provided:**

Each vial contains approximately 0.5 mL of bacteriophage in Luria-Burtani (LB) Broth supplemented with 10 mM MgSO₄ and 20% glycerol.

**Packaging/Storage:**

HM-654 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 in the vapor phase of a liquid nitrogen freezer. Freeze-thaw cycles should be avoided.

**Growth Conditions:**

**Host:** P. aeruginosa (strain PAK recommended)  
**Growth medium for host:** Tryptic Soy Broth or equivalent  
**Tryptic Soy 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 MgSO₄ or equivalent  
LB Soft Agar Overlay (0.5%) supplemented with 10 mM MgSO₄ or equivalent  
**Incubation of host with bacteriophage:**

Temperature: 30°C  
Atmosphere: Aerobic  
**Propagation of bacteriophage:**

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 P. aeruginosa; individual plaques should be countable at higher dilutions.

**Acknowledgment:**

Acknowledgement for publications should read “The following reagent was obtained through BEI Resources, NIAID, NIH as part of the Human Microbiome Project: Bacteriophage Phi_TK1718sp/PAK, Infectious for Pseudomonas aeruginosa, HM-654.”

**Biosafety Level:** 1

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References:
1. Professor D. Bamford, personal communication
4. HMP ID 9764 (Bacteriophage phi_TK1718sp/PAK)

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