Bacteriophage B012, Infectious for *Listeria ivanovii*

Catalog No. HM-585

For research use only. Not for human use.

Contributor:
Martin Loessner, Professor and Jochen Klumpp, PhD, Institute of Food, Nutrition and Health, Swiss Federal Institute of Technology (ETH Zürich), Zürich, Switzerland

Manufacturer:
BEI Resources

Product Description:
Virus Classification: *Caudovirales*, *Siphoviridae*, *Unclassified Siphoviridae*
Family: *Siphoviridae*
Strain/Isolate: Bacteriophage B012
Host: *Listeria ivanovii*
Original Source: Bacteriophage B012 was derived from *Listeria innocua* bacterium and propagated in *Listeria ivanovii* (*L. ivanovii*).[1]
Comments: Bacteriophage B012 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 B012 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 B012 is a highly-selective virus that is extremely effective at lysing *L. ivanovii*, a Gram-positive foodbourne pathogen that can cause life-threatening infections primarily for ruminant animals and also as an opportunistic pathogen for humans.[2,3] Bacteriophage B012 belongs to the unclassified *Siphoviridae* family of viruses, which are non-enveloped and display long, noncontractile, filamentous tails, linear dsDNA and hexagonal capsids.[4]

Material Provided:
Each vial contains approximately 0.5 mL of bacteriophage in Brain Heart Infusion broth.

Packaging/Storage:
HM-585 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: *L. ivanovii* (strain WSLC3009 recommended)
Growth medium for host:
Brain Heart Infusion broth 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:
Brain Heart Infusion agar or equivalent
Brain Heart Infusion soft agar overlay (0.5%) 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 *L. ivanovii*; 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 B012, Infectious for *Listeria ivanovii*, HM-585."

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.

Disclaimers:
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www.beiresources.org
E-mail: contact@beiresources.org
Tel: 800-359-7370
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References:

1. Loessner, M. J. "Improved Procedure for Bacteriophage Typing of *Listeria* Strains and Evaluation of New Phages." Appl. Environ. Microbiol. 57 (1991): 882-884. PubMed: 2039238.
2. Vázquez-Boland, J. A., et al. "*Listeria* Pathogenesis and Molecular Virulence Determinants." Clin. Microbiol. Rev. 14 (2001): 584-640. PubMed: 11432815.
3. Guillet, C., et al. "Human Listeriosis Caused by *Listeria ivanovii*." Emerg. Infect. Dis. 16 (2010): 136-138. PubMed: 20031061.
4. Klumpp, J. and M. J. Loessner. "*Listeria* Phages Genomes, Evolution, and Application." Bacteriophage 3 (2013): e26861-1. PubMed: 24251077.
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E-mail: contact@beiresources.org
Tel: 800-359-7370
Fax: 703-365-2898