ATCC

Product Sheet

Staphylococcus aureus subsp. aureus bacteriophage 42E (ATCC® 27690-B1™)

Please read this FIRST

Storage Temp.
Store filtrate at 4°C. Storage at 20°C may cause inactivation of the phage.

Biosafety Level
1

Intended Use

This product is intended for research use only. It is not intended for any animal or human therapeutic or diagnostic use.

Citation of Strain

If use of this culture results in a scientific publication, it should be cited in that manuscript in the following manner: *Staphylococcus aureus subsp. aureus bacteriophage 42E* (ATCC® 27690-B1™)

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Or contact your local distributor

Description

Designation: 42E
Deposited Name: 42E

Propagation

Medium
ATCC® Medium 1831: Nutrient Broth/Agar w/ 400ug/ml Calcium Chloride

Growth Conditions
Temperature: 37°C
Atmosphere: Aerobic

Propagation Procedure

1. Follow instructions below for titrating or propagating phage.
2. The preferred method of propagation for this phage is broth culture using *Staphylococcus aureus* subsp. *aureus* strain 42E (ATCC® 27690™) as propagation host.

GENERAL PROCEDURES FOR THE PROPAGATION OF BACTERIOPHAGE

To titrate phage:

a. Prepare an actively growing broth culture of the recommended host strain before opening the phage specimen. The host should be 18-24 hours old.
b. Add approximately 1.0 mL of the recommended broth to a freeze-dried phage vial, 0.5 mL to a liquid cryovial.
c. Pre-warm plates of the recommended medium in an incubator. Overlay the surface with 2.5 mL of melted 0.5% agar (same medium) which contains one or two drops of the 18-24 hour host. The soft agar should be maintained 43 to 45°C till ready to pour. It may be advisable to use a water bath. Allow overlay to harden.
d. The re-hydrated phage can be serially diluted by passing 0.1 mL of the phage into a tube containing 0.9 mL of the broth medium. Repeat for as many passages as desired.
e. One drop of each dilution is spotted on the surface of the prepared plates. Allow to dry. Three to four dilutions can be placed on each plate. After overnight incubation, lysis should be visible. At the higher dilutions, individual plaques should be countable.
f. Many strains may also be titrated without a soft-agar overlay. Pipette approximately 1.0 mL of the host onto the surface of each plate. After tilting plate to ensure the entire surface is covered, the excess liquid is aspirated off. After the surface dries, the various dilutions of the phage are dropped onto the surface as before.
   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.

To propagate phage (agar-overlay method):

a. Phage may be propagated by preparing plates with the soft-agar/host overlay as above and covering the surface with approximately 0.5 mL of the concentrated phage. Or, alternatively, you may add the phage directly to the melted agar/host before pouring over the plates. For larger amounts, large-size T-flasks can be prepared with the recommended agar, and approximately 12.0 mL of melted soft-agar/host poured over the surface. Phage is then allowed to run over hardened surface. Phage may also be added directly to melted soft-agar before pouring as described above.
b. After 18 to 24 hours incubation, the soft agar is scraped off the surface of the agar plates. Centrifuge at about 1000 rpm for 25 minutes to sediment the cellular debris and agar. Conserve the supernatant.
c. This supernatant is passed through a .22 µm Millipore filter and the filtrate stored at 4-8°C. Lysates should remain viable under refrigeration for long periods. They may also be frozen with or without cryoprotectant. If available, liquid nitrogen storage is the best method for long term storage. Most phage can also be freeze-dried. We use double-strength skim milk mixed half-and-half with the filtrate.
   NOTE: Broth propagation methods may also be employed with most phage (*see below*). Unless otherwise noted, ATCC uses the Adams agar-overlay method as described in M. H. Adams' Bacteriophages (Interscience Publishers, Inc., New York, 1959) for routine phage production.

For broth propagation:

a. An overnight broth culture of the above host is aseptically transferred into a flask of the recommended broth so that a 1:100 dilution of the culture is achieved.
b. To this, add the rehydrated phage. Incubate for 6 hours with shaking.
c. Harvest, centrifuge, and filter as described above.

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Notes

Most staphylococcal phages will not produce marked clearing of a broth culture, and a somewhat turbid broth may or may not yield high-titer phage. Phage resistant cells within the flask rapidly reproduce and form a turbid suspension concurrent with active phage liberation by sensitive cells. It is therefore necessary to check the titer and repeat the process if insufficient phage have been produced.
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Additional information on this culture is available on the ATCC® web site at www.atcc.org.

References

References and other information relating to this product are available online at www.atcc.org.

Biosafety Level: 1

Appropriate safety procedures should always be used with this material. Laboratory safety is discussed in the current publication of the *Biosafety in Microbiological and Biomedical Laboratories* from the U.S. Department of Health and Human Services Centers for Disease Control and Prevention and National Institutes for Health.

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Additional information on this culture is available on the ATCC web site at www.atcc.org.
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