Isolation and life cycle characterization of lytic viruses infecting heterotrophic bacteria and cyanobacteria

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Abstract

This collection presents some of the most widely used methodological approaches for isolation and purification of bacteriophages and cyanophages, the first step in detailed studies of virus–host interactions and viral genetic composition, and discusses the applications and limitations of different isolation procedures. Most work on phage isolation has been carried out with aerobic heterotrophic bacteria and cyanobacteria, culturable both on agar plates and in enriched liquid cultures. The procedures presented here are limited to lytic viruses infecting such hosts. In addition to the isolation procedures, methods for life cycle characterization (one-step growth experiments) of bacteriophages and cyanophages are described.

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Collection

PROTOCOLS

6. Isolation of cyanophages by liquid enrichment assay

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7. Isolation of cyanophages by plaque assays

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8. Obtaining pure cyanophage stocks (liquid assay)

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9. Obtaining pure cyanophage stocks (plaque purification)

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10. Adsorption of phage to cyanobacteria

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11. One-step growth experiments (cyanophages)

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