



Bacteriophage DNA for whole genome sequencing

How to prepare purified, host-free phage DNA for whole genome sequencing, the DNA quality we need, and the host information to send with it.

1. What to send

Purified phage DNA extracted from a single, well-characterised phage isolate. Host bacterial DNA in the sample reduces the useful data and makes assembly harder.

Parameter	Requirement
Concentration	20–50 ng/μL or more
Total DNA	At least 500 ng
A260/280	1.8–2.0
A260/230	2.0 or higher
Integrity	Intact DNA, free from host and environmental DNA

2. Preparation tips

1. Start from a plaque-purified phage; confirm purity before DNA extraction.
2. Use a high-titre, purified lysate. Treat the lysate with DNase I and RNase A before opening the capsids, to remove free host nucleic acids.
3. Extract the phage DNA (for example proteinase K + SDS, then phenol–chloroform or a kit).
4. Use nuclease-free tubes and reagents; avoid repeated freeze–thaw.
5. Store DNA at –20 °C (or as advised) and ship cool.

3. Information to send with the sample

- Phage name (if known) and sample ID
- Host bacterial species (scientific name)
- NCBI taxonomy ID or RefSeq accession of the host or a related phage, if available

Host information helps us interpret the genome and choose references for comparison. Sequencing: Illumina NovaSeq 6000, PE150, over 300× coverage (about 3–5 Gb per sample).