

Gel Electrophoresis

Biology

Separating DNA by size, and how to read the result.

The standard technique for sizing DNA fragments.

1

Load the wells

Samples plus a ladder of known sizes.

2

Apply the current

DNA migrates toward the anode.

3

Fragments separate by size

The gel matrix impedes larger fragments more.

4

Stain and visualise

Under UV, or with a safe stain.

5

Compare to the ladder

Interpolate fragment sizes from the standards.

USES

DNA profiling

Checking a PCR worked

Restriction mapping

Sizing a plasmid

The DNA ladder is essential: without known sizes alongside, band positions cannot be converted into base pairs.