Accessible version: https://www.cdc.gov/pulsenet/pathogens/pfge.html

The Pulsed-Field Gel Electrophoresis Process

Bacterial Culture

1 The scientist takes bacterial cells from an agar plate.

Mix bacteria with Agarose

2 The scientist mixes bacterial cells with melted agarose and pours into a plug mold.

Plug Mold

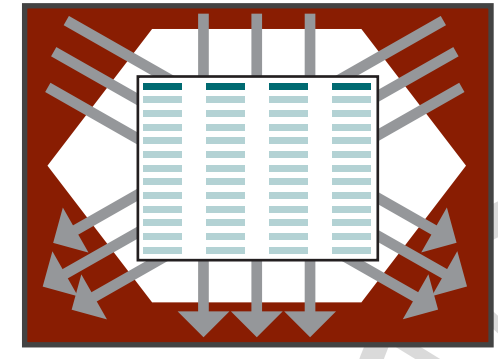
DNA is now in Plugs

Lyse Cells and Wash Plugs

3 The bacterial cells are broken open with biochemicals, or lysed, so that the DNA is free in the agarose plugs.

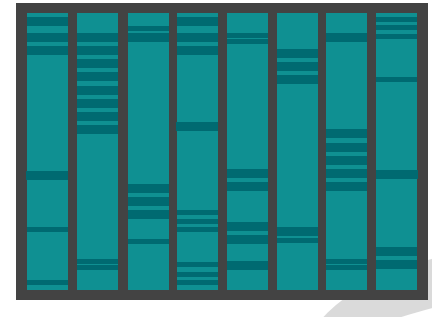
Cut DNA with Restriction Enzyme

Pulsed-field Gel Electrophoresis (PFGE)



4 The scientist loads the DNA gelatin plug into a gel, and places it in an electric field that separates DNA fragments according to their size.

Data Analysis (BioNumerics)



5 The gel is stained so that DNA can be seen under ultraviolet (UV) light. A digital camera takes a photograph of the gel and stores the picture in the computer.

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