

# Edexcel (A) Biology A-level

## CP14 - Separating DNA fragments - gel electrophoresis

### Flashcards

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# What is the purpose of gel electrophoresis?



What is the purpose of gel electrophoresis?

To separate fragments of DNA. It can be used for DNA fingerprinting.



# How does gel electrophoresis work?



## How does gel electrophoresis work?

It separates DNA fragments by their length. Due to the negative charge of the phosphate groups in DNA, it is attracted to the positive electrode (anode). Shorter fragments move at faster rates, hence the fragments move different distances within a given time.



What are the controlled variables in this practical?



What are the controlled variables in this practical?

Voltage applied

Thickness of agarose gel

Temperature

Time allowed for DNA to run

Restriction enzymes used



# What are restriction endonucleases?





## What are restriction endonucleases?

They are a type of enzyme derived from bacteria that cuts DNA into fragments at specific restriction sites.



Outline the procedure of gel electrophoresis.



## Outline the procedure of gel electrophoresis.

1. Use restriction enzymes to cut the DNA sample.
2. Load into wells near the cathode of the agarose gel, along with buffer.
3. Apply an electric current and allow the fragments to separate. Stop the current before the DNA reaches the end of the gel.

