The Use of Electrophoresis

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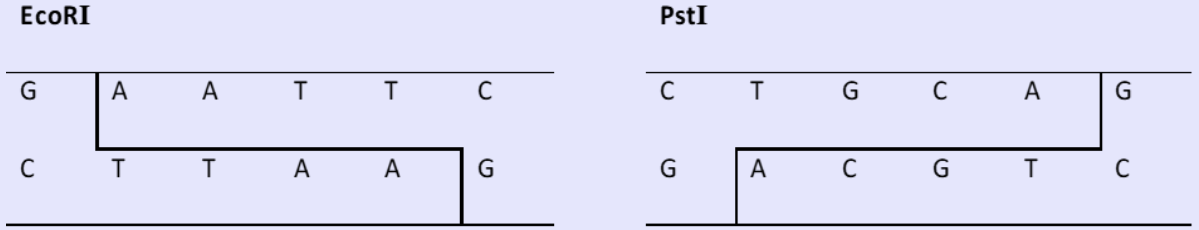
Genetical fingerprint - RFLP

- ‘Restriction Fragment Length Polymorphism’ method

1. Isolation of DNA
2. DNA fragmentation
   - ➢ Restriction enzymes
   - ➢ Different people = different lengths



Genetical fingerprint - RFLP

3. Gel electrophoresis
   - Separates fragments by size
   - Migration towards positive pole
   - At different speeds

Genetical fingerprint – application

- Forensic
  - Identify a body
  - Securing evidence (crime scene)
  - Paternity test
- Medicine
  - Transplantation
  - Detect hereditary diseases
  - Look for cures

Diagnosing hereditary diseases

- Changes in DNA-sequence
- A part is missing => smaller
- Original protein migrates more slowly
- Defect protein migrates faster

Showcasing of DNA editing

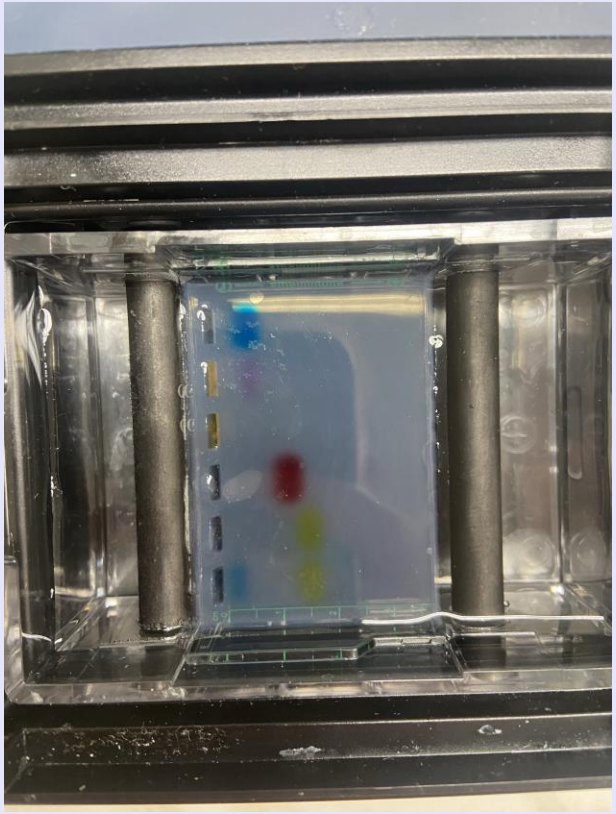
- Building block is inserted
- Results in bigger protein molecules
- Proven by electrophoresis

Detecting relations between proteins

- Estimate molar masses of proteins
  - ➢ Possible if standard is used alongside
- Molar mass helps understand function and activity of a protein
- Similar molar mass = similar roles in biological systems

Separating different food dyes

- M&Ms in Miskolc
- Used in:
  - Quality control
  - Research and development
  - Educational purposes



Thank you!

Sources

Brock, Roman: Der genetische Fingerabdruck – Die RFLP-Methode. Vorwissenschaftliche Arbeit. pGRg Kollegium Kalksburg. Wien. 2017

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