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EDVO-Kit #

PCR-based VNTR Human DNA Typing

Storage:

See page 2 for specific instructions.

Experiment Objective:

The objective of this experiment is to determine the number of repeats in a DNA sequence. This is done by comparing the DNA sequence of a sample to a DNA sequence of a known length. The number of repeats is determined by the length of the DNA sequence.

After the experiment is completed, the results are compared to a known DNA sequence. The number of repeats is determined by the length of the DNA sequence.

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BACKGROUND INFORMATION

Background Information

PCR is a technique used to amplify a specific DNA sequence. It involves repeated cycles of heating and cooling to separate DNA strands and synthesize new strands. The process is highly specific and efficient, allowing for the detection of even small amounts of DNA. PCR is widely used in molecular biology, forensic science, and clinical diagnostics.

The PCR process consists of three main steps: denaturation, annealing, and extension. Denaturation involves heating the DNA to separate the strands. Annealing involves cooling the mixture to allow primers to bind to the target DNA sequence. Extension involves heating the mixture to allow DNA polymerase to synthesize new DNA strands. The process is repeated for multiple cycles to amplify the DNA.

BACKGROUND INFORMATION

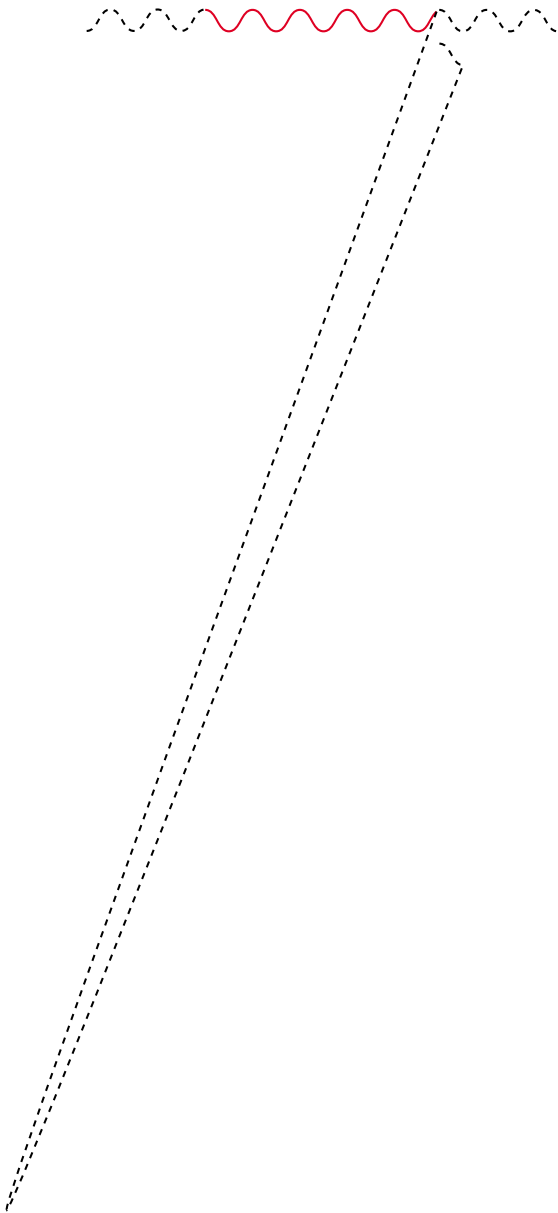
Background Information,
continued

Figure 2 - The Polymerase Chain Reaction (PCR)

If the template DNA is a double-stranded DNA molecule, the PCR process begins with the denaturation of the DNA. The DNA is heated to a temperature of approximately 94°C, which causes the two strands to separate. This process is repeated for several cycles. In each cycle, the DNA is heated to 94°C to denature the DNA, then cooled to a temperature of approximately 55°C to allow the primers to bind to the single-stranded DNA. The DNA is then heated to a temperature of approximately 72°C to allow the Taq polymerase to synthesize a new DNA strand. This process is repeated for several cycles, resulting in the exponential amplification of the DNA.

The PCR process is a highly sensitive and specific method for amplifying DNA. It is used in a wide variety of applications, including forensic DNA typing, genetic testing, and the study of infectious diseases. The PCR process is a key component of many modern molecular biology techniques. The PCR process is a highly sensitive and specific method for amplifying DNA. It is used in a wide variety of applications, including forensic DNA typing, genetic testing, and the study of infectious diseases. The PCR process is a key component of many modern molecular biology techniques.

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