Alec Jeffreys’s Experiments to Identify Individuals by Their Beta-globin Genes (1977-1979)

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In a series of experiments in the late 1970s, Alec J. Jeffreys in the UK and Richard A. Flavell in the Netherlands developed a technique to detect variations in the DNA of different individuals. They compared fragments of DNA from individuals’ beta-globin genes, which produce a protein in hemoglobin. Previously, to identify biological material, scientists focused on proteins rather than on genes. But evidence about proteins enabled scientists only to exclude, but not to identify, individuals as the sources of the biological samples. By 1979, Jeffreys’s experiments on beta-globin genes shifted the analytical approach of scientific identification from proteins to genes to identify an individual’s genetic identity. The ability to match a person to a biological sample developed in the 1980s and impacted many fields including paternity testing, forensics, immigration, and body identification.

Subject

DNA fingerprinting  Forensic sciences  Globin genes  Nucleic acid hybridization  In situ hybridization  Globins  Hemoglobins  DNA Restriction Enzymes  DNA Probe  DNA Hybridization Probes  Genetic disorders

Topic

Experiment

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