



DNA Profiling

Deoxyribonucleic acid (DNA) molecules contain the information all living cells in the human body need to function. They also control the inheritance of characteristics from parents to offspring. With the exception of identical twins, each person's DNA is unique, which makes DNA sampling useful for solving crimes, identifying victims of disasters, and locating missing persons.

DNA's role in solving crimes

DNA profiling can play a crucial role in solving crimes, as it has the potential to link a series of crimes and/or to place a suspect at the scene of a crime. Just as importantly, DNA can help to prove a suspect's innocence.

The first step in obtaining DNA profiles for comparison is the collection of samples from crime scenes and reference samples from suspects. Samples are commonly obtained from blood, hair or body fluids. Advances in DNA technology enable samples to be obtained from decreasingly smaller traces of DNA found at crime scenes. Using forensic science methods, the sample is analysed, resulting in a DNA profile that can be compared against other DNA profiles within a database. This creates the opportunity for 'hits' – scene-to-scene, person-to-scene or person-to-person matches – where no previous connection was known.

INTERPOL's DNA database

Police in member countries can submit a DNA profile from offenders, crime scenes, missing persons and unidentified bodies to INTERPOL's automated DNA database. Known as the DNA Gateway, the database was created in 2002 with a single DNA profile but, as of the end of 2008, it contained more than 82,000 DNA profiles contributed by 48 member countries. Participating countries are actively using the DNA Gateway as a tool in their criminal investigations, and it regularly detects potential links between DNA profiles submitted by member countries – searches of the database by member countries led to 27 international hits during 2008.

Member countries can access the database via the organization's I-24/7 global police communications system and, upon request, access can be extended beyond the member countries' National Central Bureaus to forensic centres and laboratories.

INTERPOL serves only as the conduit for the sharing and comparison of information. It does not keep any nominal data linking a DNA profile to any individual. A DNA profile is simply a list of numbers based on the pattern of an individual's DNA, producing a numerical code which can be used to differentiate individuals. This profile does not contain information about a person's physical or psychological characteristics, diseases or predisposition for diseases. Member countries that use the DNA Gateway retain ownership of their profile data and control its submission, access by other countries and destruction in accordance with their national laws.



Promoting standards, ethics and best practice

INTERPOL advocates international technical standards and systems in order to enhance the opportunities for successful cross-border collaboration. For example:

- The DNA Gateway is developed to its internationally recognized standard to facilitate the electronic transfer of DNA data between INTERPOL and its member countries.
- The Gateway is also compatible with the EU Pruem convention (a 2005 initiative to simplify data exchange in the EU countries), and for selected international export of DNA profiles for countries using CODIS (the FBI-designed DNA matching software).
- The G8 DNA Search Request Network uses INTERPOL's I-24/7 system and DNA standards to communicate profiles among G8 countries.

In addition to the DNA Gateway, INTERPOL strongly supports the increased use of DNA profiling in international police investigations through two other main areas of activity:

- The Monitoring Expert Group is a panel of forensic experts and senior investigators which advises INTERPOL and encourages authorities in member countries to implement or expand national DNA databases. It also works to standardize collection efforts and to promote accreditation criteria for forensic laboratories to ensure the integrity of samples.
- A DNA Users' Conference for investigative officers, held every two years, examines developments in DNA applications and encourages the widespread use of best practice and DNA technology in criminal investigations.



www.interpol.int

Contact information

E-mail: info@interpol.int

For matters relating to specific crime cases, please contact your local police or the INTERPOL National Central Bureau in your country.