Determination of the Physical Appearance of Persons by Means of DNA Investigations

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Today, forensic investigation allows the identification of biological traces based only on knowledge of the DNA profiles of suspects or persons found in DNA investigation records. The National Forensic Laboratory has been very successful in the identification of biological traces. Nevertheless, there are, and will be, criminal offences in which biological traces from a crime scene cannot be linked to any known person. In order to solve some of these cases, a new method is being introduced to forensic investigations. Based on the new method, the physical appearance of the person, or their pigmentation characteristics, such as eye and hair colour, could be determined from biological traces. The results of these genetic analyses could be termed "genetic eyewitnesses", as they will have the same role as eyewitnesses to criminal offences. Such investigations abroad have helped to solve a number of criminal cases.

However, only the Netherlands Forensic Institute performs these routinely, and only for serious criminal offences. Research in this area will be mainly used to focus criminal investigations on a narrower range of suspects, as their physical appearance will be partly known. The introduction of such investigations to the National Forensic Laboratory is intended to enable Slovenia to approach solving serious criminal offences by using new molecular techniques, the results of which will be used by investigators as a new analytical tool to identify criminals.

Key words: SNP markers, visual characteristics of people, biological traces