

“DNA” as a Tool for Missing Persons Identification**MA. Gentiana Kasumi**

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Abstract: In Kosovo, crime has taken worrying extents, especially in the postwar years; there is no doubt that the vacuum created by the lack of laws is one of the circumstances that created the space for such phenomenon. The fundamental issue to legally treat the criminality is to set a proportionate report between the criminal act and the following punishment. Biological disputed tracks treated with special technique are compared with the undisputed biological material and thus prove the existence of their identity. Therefore, the identity of the person, to whom the biological trace belongs, is certainly and accurately proven.

Keywords: DNA, genetic code, etc.

Introduction

From historic perspective DNA was practiced for the first time in 1944 by USA Army in order to identify the unknown US soldiers, however commonly on legal sciences was introduced after 1985 by Alec Jeffrey during his researches in Leicester University-England. In case of lack of DNA testing, identification can be done based by the initial indicators as: fingerprints, dental and skeleton radiography, or special medical implants and permanent prosthesis; or time by time it is based on many subjective criteria as: visual recognition of personal effects, general comparison of biological profile and other ante-mortem data.

In Kosovo, Bosnia and Herzegovina (B and H) a number of cases of missing persons closed earlier, were performed by using “traditional” methods or methods without DNA and without uniform applicable process of scientific investigation or defined criteria on determining identity. These identification methods of human remains represent considerable risk for errors. In cases in Kosovo, the disposal information suggests that 2,000 or more individuals were identified during 1999 and 2000⁶².

Following the initiative of US President Clinton in 1996 after the G-7 Summit in Lyon- France was founded International Commission on Missing Persons (ICMP), which is considered as pioneer on applying process of identification through the DNA process of all missing persons of West Balkan.

ICMP works to secure the co-operation of governments and other authorities in locating and identifying persons missing as a result of armed conflicts.

The primary responsibility of ICMP in Kosovo has been to provide to UNMIK and today the EULEX with DNA-led system of identifications. That assistance has been delivered pursuant to a Memorandum of Understanding that UNMIK and ICMP signed in November 2003 and which continues to serve as the basis for support to EULEX.⁶³

DNA (Deoxyribonucleic acid): It is substance encoding the genetic instructions (inheritress) structured in cell nucleus of all known living organism. Nearly every cell in a person’s body has the same DNA. Human DNA consist of about 3 billion bases, and more than 99 percent of those bases are the same in all people, thus the 1 percent is

⁶² Raporti i Aktiviteteve të UNMIK - OMPF, 2002-2004 p.6.

⁶³ Situata në Kosovë: Vlerësimi i gjendjes, Sarajevë, 2010 fq.6

crucial to distinguish persons in all. Therefore DNA has come to play a major role in the field of criminology, with applications that have provided impacts extending to proof of innocence or guilt in a crime.

Method A-Acid: D- Deoxyribonucleic: N-Nucleic maintained by following biological procedures

1. DNA is structured in the cell nucleus of all living humans, animals and plants. The cell is basic structural functional unit of all living organisms. The human organism contains billions of cells. In the center of it is nucleus, containing chromosomes. Chromosome is organized structure of DNA. The human genome contains 46 chromosomes.

2. Knowing that gene is in the cells, sperm, on the superior aspect of vaginal secretion, on sputum, on hair, on the tissue parts, and then it is entirely possible to determine the individuality of person.

An identification of person is achieved by comparing the methodical trace of the abovementioned objects against the model extracted from the suspect person.

3. The identification process comes off by using sophisticated devices within period of 7 days, storing everything in device enables the matching and mismatching.

4. In regards to the DNA microanalyses, about its invention within the chromosome row of chain followed by the abovementioned method it is enough amount of 10 in exponent of minus 9 degree with so called Southern Blot –Sonde radioactive method and parallel with this method is practiced the PCR method (Polymer Chain Reaction), used in the situations when the models of genetic devices are with reduced capacity and quality, thus it is necessary the dynamicity of biological reactions of these quantities and qualities. So the Identification of person concluded by genetic profile (DNA) goes through two phases:

- First phase has to do with preliminary examination in order to assess the biological proves by their nature and if they hold genetic identification values.

- Second phase has to do with extraction of genetic profile from the object of examination.

The method of identification of person based on the genetic traces has taken an important role against the criminality, recovering, investigation and judging criminal activities of homicides, sexual abuse cases, whereas perpetrator left blood traces even they are dried up to five years. It has an important role on microanalyses of hair (of single hair root) muscle fibers, organic tissues, smoothed particles and bones.

The DNA test in the same time ascertains the tribal relationship of persons, the sex of kinship and parental testing. The new method is applicable broadly in many countries as in England, Italy, USA, Belgium, Switzerland, France etc. Its practice on the mentioned countries enabled recovering of many serious crimes. The DNA method represents a great progress, because is assisting to determine the biological individuality of every one. It converts the concept of traces into biological structure and their role on identification of persons. So, the DNA method – is very effective method not only on finding of perpetrators but at the same time the effective tool on elimination of the suspected perpetrators of the concrete cases as it is: the case Lenni Callace, owing to analyses of genetic traces that concluded with confirmation of his guiltlessness).⁶⁴

⁶⁴ Ibidem

Genome “mark” – DNA method

In last two decades the forensic criminology suffered revolutionary transformation. On its base the attitudes have been changed and credited the absolute importance of the biological traces. The biological traces, micro and macro traces, at the crime scene, on the actual day have sovereign testifying values in aspect of identification of person's individuality. However, the new DNA method of identification is direct, and the genetic substantiality with great certainty verifies the biological identity of the respective person. The DNA molecule is encoded as a sequence of four different nucleotides as guanine, adenine, thymine and cytosine, recorded using letters G, A, T and C. NA molecules are double-stranded helices, consisting of two long polymers of simple units called nucleotides, molecules with backbones made of altering sugars (deoxyribose) and phosphate groups (related to phosphoric acid), with the nucleobases (G, A, T and C) attached to sugars.⁶⁵

Conclusion

Referring to the blood stains found at the scene or other traces that have biologically and anatomically constitution of the human body, the “DNA” method applies in finding the perpetrator of criminal offence. Identification of the person based on the genetic trace represents great progress, because it is assisting on the determination biological individuality of a human being. The vast majority of the identifications made in the former Yugoslavia following the recent wars would not have been possible without the objective certainty of DNA. There is, in general, a lack of medical, dental and fingerprint records that would permit accurate identifications in the absence of DNA. Ante mortem data provided by families, postmortem biological profiles of the missing, circumstantial information and personal effects can play a role in the identification process, but assessment of their significance is highly subjective. International Commission on Missing Persons (ICMP) has developed a high-throughput DNA-led identification system that has for the first time permitted the identification – through scientific methods – of large numbers of persons missing as a result of violent conflict. For that purpose, ICMP maintains the highest standing operational capacity for DNA typing of skeletal remains in the world. In a DNA-led process of genetic matching, DNA profiles from skeletal remains are compared to profiles from surviving family members of the missing in order to find DNA kinship matches of extremely high scientific surety, providing the basis for reliable and accurate identifications.

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