

## **Application of DNA Analysis to Identification of War Victim's Remains in Croatia**

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During the war in Croatia (1991-1995) 10668 persons were reported killed, 37190 wounded and 2069 are still missing. Many of these war victims' remains have been successfully identified by conventional methods such as anthropological and dental examination. However, a number of cases cannot be identified by conventional means because premortal records are missing or remains are badly decomposed. In these cases, DNA analysis can be used for identification process.

Here we present two cases. Highly decomposed bodies were obtained from the exchange of war victim's remains with the enemy. DNA was isolated from teeth. AmpFISTR Profiler PCR amplification kit (Perkin-Elmer) was used for comparative typing of nuclear microsatellite markers in the remains and in the presumptive parents of the victim.

In a first case, genotypes for 8 loci were obtained. A probability of paternity 99.95% was calculated. This result confirmed that these human remains were related to the putative parents.

In a second case, PCR results were obtained for 5 markers. An exclusion of paternity was found. Since it was not possible to exclude the mother as well, typing of mitochondrial DNA (mtDNA) was the method of choice for the further identity testing. Finally, the mtDNA sequence from the remains did not match the mtDNA sequence from blood sample taken from the presumptive mother.

Results suggest that the combination of genomic DNA typing and mitochondrial DNA analysis could be very useful for identity testing especially for exclusion of possible false identification.