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DNA IDENTIFICATION OF SKELETAL REMAINS FROM THE SECOND WORLD WAR MASS GRAVES UNCOVERED IN SLOVENIA – FIRST RESULTS

Marjanovic D[1,2], Durmic-Pasic A[1], Bakal N[1], Haveric S[1], Kalamujic B[1], Kovacevic L[1], Ramic J[1], Pojskic N[1], Skaro V[2], Projic P[2], Bajrovic K[1], Hadziselimovic R[1], Drobnic K[3], Huffine E[4], Davoren J[4], Primorac D[5,6]

[1]Institute for Genetic Engineering and Biotechnology, Sarajevo, Bosnia and Herzegovina, [2]"Rudjer Boskovic" Institute, Department of Molecular Medicine, Forensic Genetics Group, Zagreb, Croatia, [3]Forensic Laboratory and Research Center, Ministry of Interior, Ljubljana, Slovenia, [4] Bode Technology Group Inc, Springfild, VA, USA, [5] Medical School, University of Split, Split, Croatia, [6] Medical School, Josip Juraj Strossmayer University of Osijek, Osijek, Croatia
damir.marjanovic@ingeb.ba

To present joint effort of three institutions in the identification of human remains from the World War II found in two mass graves in Škofja Loka area, Slovenia. DNA from bone and teeth samples from 27 remains, found in two small and closely located mass graves from Skofja Loka area (Slovenia), was isolated using either standard phenol/chloroform alcohol extraction or optimized Qiagen DNA extraction procedure. Some recovered samples required employment of additional DNA purification methods, such as N-buthanol treatment. QuantifilerTM Human DNA Quantification Kit was used for DNA quantification. PowerPlex 16 kit was used to simultaneously amplify 15 STR loci. Electrophoresis of the amplification products was performed on ABI PRISM 310 genetic analyzer. Matching probabilities were estimated using the DNA View program. Out of all processed samples (bones or teeth), taken from the remains, 15 remains were fully profiled at all 15 STR loci. The other twelve profiles were partial. The least successful profile included 13 loci. Also, 69 referent samples (buccal swabs) from potential living relatives were collected and profiled. Comparison of victims' profile against referent samples database resulted in 4 strong matches. In addition, five other profiles were matched to certain referent samples with lower probability. Our results show that in over six decades since the end of the Second World War, DNA analysis is the solution to the identification of the remains from that period. Additional analysis of Y-STRs and mtDNA markers should be performed in the second phase of the identification project.

Keywords: DNA identification, mass graves, skeletal remains, Slovenia, Second World War

Suggested Reading:

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