

## **EVALUATION OF QUALITY PARAMETERS OF GENETIC PROFILES FOR BONE SAMPLES EXTRACTED BY AUTOMATED SYSTEM (MAXWELL 16)**

Dayse Aparecida da Silva, Márcia Desidério. Suellen Bernardo, Alexandre Caiafa, Fernanda Manta, Juliana Gozi, Elizeu Fagundes de Carvalho  
DNA Diagnostic Laboratory (LDD), State University of Rio de Janeiro, Rio de Janeiro, 524  
São Francisco Xavier av. RJ, Brazil

In Forensic Science, the extraction of DNA from human remain samples is a problem which is difficult to solve, and there is a consensus which is time consuming during DNA extraction, increasing the risk of contamination. In this biological sample DNA is usually a highly degraded molecule, making it difficult its analysis after DNA amplification by polymerase chain reaction (PCR). In recent years, new methodologies have been developed in order to increase the quality of the DNA obtained of the human remains. We highlight the automatic method (Maxwell 16 System) for DNA extraction. This study had purpose to evaluate such automatic method for DNA purification from bone tissues of human remains, in order to establish the success rate in PCR amplification of STR loci and the quality of genetic profiles (number of regions typed, nonspecific and stutter bands, height and balance of alleles). From the analysis of STR profiles, we found a success rate of 73% for amplifications after semi-automatic DNA extraction, concluding that the method is superior than organic method (success rate of 56%). And that method presents among others advantages, reducing handling, and standardized procedures that also reduce the contamination of DNA products.

Financial support: FAPERJ and DNA Program - State University and Justice Court of Rio de Janeiro, Brazil.