JOURNAL of FORENSIC ODONTO-STOMATOLOGY
VOLUME 31 Supplement 1 October 2013
Abstract book IOFOS Conference 2013 Firenze

USE OF THE ALLPROTECT TISSUE REAGENT® IN THE STABILIZATION OF DNA EXTRACTED FROM HUMAN DENTAL TISSUES AT DIFFERENT STORAGE CONDITIONS

Andrea Sayuri Silveira Dias Terada*, Luiz Antonio Ferreira da Silva, Gustavo Reis Branco de Souza, Adrielly Garcia Ortiz, Rodrigo Galo, Aline de Azevedo, Raquel Fernanda Gerlach, Ricardo Henrique Alves da Silva

**Dentist, master degree student at the Ribeirão Preto School of Dentistry, University of São Paulo (FORP-USP), expert in forensic dentistry- Ribeirão Preto School of Dentistry – University of São Paulo. Brazil*

The authors declare that they have no conflict of interest.

Background: The genetic-molecular methodology stands out as an accurate technique for human identification process and among the sources of biological evidence, the use of teeth is of great interest in Forensic Dentistry. Maintaining integrity of the material sent to laboratory is essential for success of the analysis, and one of the main difficulties is related to sample storage, which is usually carried out at low temperatures. This study evaluated the effectiveness of the Allprotect Tissue Reagent® (Qiagen, Germany) in stabilizing DNA extracted from human dental tissues stored under different conditions. Methods: In this study were used 160 teeth, distributed in two groups: intact teeth and isolated pulp tissue. The samples were stored with or without the product and varying the storage time and temperature. In addition to these groups, was formed a positive control group, composed by five teeth, which was stored at -20ºC for 180 days. After storage, DNA extraction, electrophoresis on agarose gel and genomic DNA quantification by Real-Time PCR were performed. The fragments of 32 samples representing every possible condition and five positive control group samples were analyzed to verify four pre-selected markers. Results: The agarose gel showed evidences of genomic DNA presence. Quantification results showed values ranging from 0.01 to 10,246.88 ng/µL of DNA. There was a decrease in DNA concentration in stored tooth samples at room temperature for 30 and 180 days compared to those stored for 1 and 7 days. Besides the time factor, temperature also influenced the DNA concentration, being higher in teeth that remained for 30 days and in tooth pulp maintained for 180 days, under refrigeration. Regarding the use of Allprotect Tissue Reagent® it showed a significant difference in stabilization of stored teeth at room temperature for 30 and 180 days. The analysis of fragments was possible in 37 selected samples, regardless of the DNA quantity variation, confirming that STR analysis using automated methods provides good results. Conclusion: The use of Allprotect Tissue Reagent® showed a significant difference in stabilizing DNA samples of intact human teeth stored at room temperature for 30 and 180 days, while in the other test conditions the results showed no justification for using this product.

***KEYWORDS*:** Forensic Odontology, DNA, Dental Tissues

JFOS. October 2013, Vol.31, Sup.No.1 Pag 134-135
ISSN :2219-6749