USE OF STRS DNA PROFILES IN HUMAN IDENTIFICATION IN ECUADOR

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INTRODUCTION

The development of powerful techniques for DNA *in vitro* amplification as well as the identification of extremely specific sequences within human genome allowed the widespread use of DNA analysis for genetic identification of human beings. In Ecuador, a DNA laboratory was created in June 2010 to provide DNA analysis leading to determine kinship links and human identification of people involved in crimes and/or forensic cases.

MATERIALS AND METHODS

From June 2010 to May 2011, 1628 cases related to paternity tests were analyzed using DNA extracted from blood samples. On the other hand, from June 2010 to July 2011, 417 forensic cases from different crimes were studied using DNA extracted from evidences collected in each case. In both groups of samples, Polymerase Chain Reaction (PCR) for autosomal STRs were performed and PCR products were analyzed by capillary electrophoresis in a Genetic Analyzer and an statistical software was used to determine paternity index and probability in the kinship studies and presence or absence of STRs profiles in crime scene investigations.

RESULTS

From the 1628 paternity tests, 1343 (82%) corresponds to inclusion and 285 (18%) were considered as exclusion after the corresponding analysis of STRs profiles. Concerning the 417 forensic cases, most of them 70% (n = 290) were related to sex crimes, 21% (n = 88) to murders and the remaining 9% includes other crimes.

CONCLUSION

We consider that the large number of paternity tests as well as forensic DNA analysis performed in the DNA laboratory in such a short period of time (June 2010 to May 2011) reflects the real problem of disputed paternity and crime cases in Ecuador. In addition, the DNA laboratory from the Fiscalia General del Estado is the first public DNA laboratory in Ecuador, therefore, financial limitations for users are no longer a problem and, civil and criminal justice are now supported for scientific DNA analysis in a well established laboratory.