

DNA PROFILING OF UNIDENTIFIED DECEASED PEOPLE FROM MEXICO CITY

Mariana Ruiz Hernandez¹, Jorge Guillen Alfaro^{1,2}, Mauro Lopez Armenta¹, Rayo Orea Ochoa³, Eduardo Carrillo Tapia¹ and Mavil Lopez-Casamichana¹

¹ Universidad Autónoma de la Ciudad de México

² Laboratorios MEXIGEN

³ Servicio Médico Forense, Tribunal Superior de Justicia del Distrito Federal

Crime is among one of the most urgent concerns that Mexico City faces. Every year, around eight hundred unidentified human bodies and remains are received at the Medical Forensic Service installations of Distrito Federal. Collected biological material mainly includes fingers, skeletal muscle, blood, liver and heart tissues and different kinds of bones; many of them with high decomposition levels.

Short tandem repeat (STR) genotyping is very helpful in data analysis for a broad variety of human identification applications (homicide scene, missing people and mass catastrophes). However, since environmental conditions, including water, heat, acidity, and duration of exposure, severely deteriorate body remains; DNA analysis of this kind of samples frequently yields not whole STR profiles. For this reason, multi-technology DNA analysis, including the ancestry molecular marker: mitochondrial DNA (mtDNA), become indispensable to sorting of candidate analysis and providing statistical robustness to genetic profile association.

In order to support the creation of the first DNA database of unidentified deceased people from Mexico City, we have obtained the STR profiles and mtDNA haplotypes of human samples collected at the years 2009 and 2010 at the Genetic Forensic Laboratory. Multiplex system for analysis of 15 autosomal STR loci was performed using the Applied Biosystems AmpFISTR® Identifiler® kit for CSF1P0, D2S1338, D3S1358, D5S818, D7S820, D8S1179, D13S317, D16S539, D18S51, D19S433, D21S11, FGA, TH01, TPOX, vWA and the gender marker Amelogenin. Moreover, the mtDNA hypervariable segments I and II (HV-I and HV-II) were sequenced by Capillary Electrophoresis in an Applied Biosystems 3130 Genetic Analyzer. The outcomes of this study are summarized in the present work.

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