

Short Term Fellowships of the International Society for Forensic Genetics (ISFG) Magdalena Romero (Argentine Forensic Anthropology Team) - Short Report

The current report summarizes the purpose and main outcome of my visit to the Institute of Legal Medicine, Faculty of Medicine, University Hospital of Cologne, Germany, hosted by Prof. Dr. Peter M. Schneider and Dr. Iva Gomes. The visit took place between the 27th Nov till 15th Dec 2017.

The aim of my visit to the Institute of Legal Medicine of the University Hospital of Cologne (Germany) was genotyping around 500 male population samples from Paraguay for 12 X-chromosomal STR markers employing the Investigator Argus X-12 QS kit, based on the growing potential of X chromosome marker testing in forensic studies.

Short tandem repeat (STR) markers located on the X chromosome (X-STRs) can be a useful tool in forensic identification analysis and paternity testing in certain cases, and can even be more informative than autosomal STRs in certain cases.

In order to employ the X-STR markers in Paraguay cases, the collection of population data is essential for the construction of databases, determination of diversity levels, linkage disequilibrium analysis and forensic parameters such as heterozygosity (HET) and Probability of Exclusions (PE's), etc.

The Institute of Legal Medicine of Cologne has the resources that allowed developing this experimental work and the conditions to provide training in X-STRs typing, as they have a vast experience in working with this type of genetic markers. During my visit, we were able to type the approximately 500 male population samples utilizing the Investigator Argus QS kit. Amplification of already extracted DNA, capillary electrophoresis using an ABI3130 genetic analyzer and results evaluation using Genemapper was done. Some new allele variants were observed in the Paraguayan population, which were sequenced in order to confirm them.

The Argentine Forensic Anthropology Team (EAAF) is a non-governmental, not-for-profit, scientific organization that applies forensic sciences to the investigation of human rights violations in Argentina and worldwide. EAAF was established in 1984 to investigate the cases of at least 9,000 disappeared people in Argentina under the military government that ruled from 1976-1983. Today, the team works in Latin America, Africa, Asia and Europe. Paraguay is one of the Latin American countries that the EAAF is collaborating with, so the genotyping of X-STR markers as well as frequency databases of X-STRs for this population can be a complement to autosomal and lineage markers in complex identification cases.