

ISFG Short-Term Fellowship–Short Report

Project title: Study Y-chromosome lineages in three ethnic groups from Ecuador

Applicant: Germán Burgos Figueroa, Professor of the Faculty of Health Sciences, Universidad de Las Américas Quito-Ecuador.

Host laboratory: IPATIMUP / Institute of Investigation and Innovation in health (i3S); Sept 6-29 / 2019

Host: Prof. Dr. Verónica Gomes

Latin America keep one of the greatest genetic diversities in the world due to different admixture processes during more than 4 centuries, resulting in the different current communities. Ecuador is a tri-hybrid country that shares a rich demographic history due to admixture events starting in 16th century mainly between Native American settlers, European conquerors and West African slaves. Mestizos are its major representative ethnicity followed by Native-American and afro descendant people. However, their genetic complexity remains scarcely explored.

The main objective of this research travel was to receive training in the typing of Y-SNPs using the SNaPshot methodology for the resolution of paternal lineages of the Y chromosome. Previously we have typed in Ecuador a sample of each of the 3 ethnic groups with STRs of the Powerplex Y23 kit, these genotypes were assigned by prediction algorithms to their most likely haplotypes. However, this prediction must be resolved with certainty by confirming specific mutations by Single Base Extension technique. These protocols will be replicated in Ecuador and will allow us to acquire accurate data that will be consolidated, to be published later.

The research stay at Ipatimup not only helped me in learning the methodology, but also allowed me to strengthen and increase the institutional collaboration of the University of the Americas that is already being developed with the DNA Diagnostic Laboratory of the State University of Rio de Janeiro (LDD-UERJ).

Additionally, the possibility of traveling to Europe, allowed me to attend the 23rd congress of the International Society for Forensic Genetics (Prague, 9-13 sept). where 8 works involving undergraduate students framed in the project “Studies of genetic diversity and ancestry in the Ecuadorian population” from the University of the Americas were exhibited. these works will be published shortly as extended abstracts in the proceedings Forensic Science International: Genetics Supplement Series.

I can only thank the ISFG Executive Board immensely for supporting my candidacy.

Germán Burgos.