Exchange Visit Report

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Host Institution: Section of Forensic Genetics, Department of Forensic Medicine, Faculty of Health and Medical Sciences, the University of Copenhagen

Home Institution: DNA Diagnostics Laboratory (LDD), Rio de Janeiro State University (UERJ)

The purpose of the scientific exchange was to gain expertise in Massive Parallel Sequencing (MPS) technologies by analyzing the Ion AmpliSeq™ NAM-Q-Y-SNP Panel, developed by the Department of Forensic Medicine at the University of Copenhagen, Denmark. This panel was specifically designed to identify new SNP variants in Native American paternal lineages of haplogroup Q, enhancing the resolution of the predicted haplogroups.

During the exchange period, 96 libraries from Ecuadorian Native groups, previously prepared at the home institution, were sequenced using the Ion GeneStudio S5™ System (Thermo Fisher Scientific). These samples are included in my doctoral project, which investigates the origin and genetic flow of paternal lineages in Native American populations from Ecuador. Preliminary analyses of the sequencing data offer deeper insights into the distribution patterns of male sub-lineages in Ecuador by enhancing the resolution of haplogroup predictions. Furthermore, once the analyses are complete, we hope to uncover valuable information about the ancestral migration routes of Native Americans into and across the continent.

The fellowship provided the opportunity to acquire knowledge in genetic data processing, learn about new technologies being developed at the Department of Forensic Medicine, and gain experience with the analysis tools. The outcomes of this collaboration will be included in a manuscript to be submitted to a journal in the field of population and forensic genetics.