

## **GENETIC ANALYSIS OF HUMAN REMAINS (BONES) BETWEEN 2014-2018 AT THE GENETICS INSTITUTE “SERVICIOS MÉDICOS YUNIS TURBAY Y CIA.” IN BOGOTÁ, COLOMBIA**

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At the Genetics Institute “Servicios Médicos Yunis Turbay y Cía. S.A.S. in Bogotá Colombia, an average of 49 human remains samples are processed annually for paternity testing and family relationships legal processes.

To carry out DNA testing, a court order is required to exhume the remains to select samples suitable for analysis. The selected samples are femur, tibia, vertebrae and teeth.

The DNA extraction of bone remains is carried out by means of the organic phenol - chloroform extraction method. In 80% of cases the sample processed is femur. When a non-satisfactory result is obtained or in cases where exclusions are detected the procedure is repeated using a different bone segment for analysis.

Samples are amplified by the PowerPlex® Fusion System, PowerPlex® 21 System and VeriFiler Express platforms that are within the scope of our ISO/IEC 17025:2005 accreditation.

To comply with our quality management system, 95% of the results should be obtained in less than two months and 100% results should be within 3 months period.

Between 2014 and 2018, a total of 275 samples of bone remains were processed.

Overall Full profiles were obtained in 202/214 (94.4%) bone samples. Partial profiles were obtained in 1.86% of the samples. No profiles were obtained in 3.7% of samples. For 2014, full profiles were obtained in 34/35 (97.1%) samples, for 2015 in 53/59 samples (89.8%), in 2016 in 63/64 (98.4%), in 2017 in 52/56 (92.8%), and for 2018 in 58/61 (95.08)

Our results showed a high efficiency to obtain full DNA profiles (94.4%) in less than 2 months for 95% or more of the samples processed. Samples without full profiles were related to highly degraded human remains and/or the presence of inhibitors in the samples..