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Procuraduría General de la República
[Redacted]
Forensic Services Coordinator General
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Our reference number: SP159419
GMI1409191

Innsbruck, 03rd December 2014

Expert Opinion

on DNA Analyses

1 Order

Based on an agreement between the Procuraduría General de la República, Mexico, and the Gerichtsärzte am Institut für Gerichtliche Medizin, a written expert opinion on forensic DNA analyses concerning missing person Alexander Mora Venancio related to Case [Redacted] is given.

2 Case circumstances

On November 13th, 2014, one bone sample (sample ID 27-29102014) was handed over to our laboratory by [Redacted] PGR.

On November 14th, 2014, 13 DNA profiles related to 42 family groups were made available by [Redacted] PGR.

In addition, on November 20th, 2014, 135 DNA profiles related to 42 family groups were made available by [Redacted] EAAF.

Family group number 21 (PGR) consists of DNA profiles from the father (Ezequiel Mora Chora, sample ID 13MR5470-14) and two full brothers (Omar Mora Venancio, sample ID 13MR5471-14, and Hugo Mora Venancio, sample ID 13MR5472-14) of missing person Alexander Mora Venancio.

The above mentioned family group number 21 (PGR) corresponds to EAAF missing person code 3-005, family code 4-005, Ezequiel Mora Chora (Father, donor code IG013), Omar Mora Venancio (full brother, donor code IG014) and Hugo Mora Venancio (full brother, donor code, IG015)

3 Investigations

3.1 Inspection and description of the exhibits

15941901 – 27-29102014 Bone sample:

One piece of bone, about 4 x 4 x 1 cm packed in a paper tissue.

Furthermore packed in a plastic container labelled with: "27-29102014, 27-29102014".

Sp159409 to Sp159425 packed in a paperbox labelled with: "Indicio, evidencia, Fecha y hora: 02 Noviembre, 2014, Número de indicio o evidencia: 13:35 pm., Número de registro (folio o llamado):, Domicilio exacto del lugar de los hechos y/o hallazgo, ubicación exacta del lugar en donde el indicio fue recolectado, descripción del material: A?, Río Consulado 715, col., Santa Maria Insurgentes Del. C?téroc. C.P. 06450, México ? F., Observaciones: 17 muestras de fragmentos, óscos embalados Indiid?almente., Nombre completo sin abreviaturas del agente policia, perito o auxiliar responsable de la recolección y el embalaje: Biol [REDACTED]

[REDACTED] and furthermore labelled with: "Columnus Para, filtrat, Automate Express, [REDACTED] Carola Romanini, ?".

- 15941901 I: The bone was put into the bone extraction procedure and used for DNA analyses.

3.2 DNA Analysis (Reference: DNA Report attached)

The DNA analyses of the bone sample 27-29102014 (15941901-1) gave a male profile in all 16 loci investigated.

DNA profiles of the father and the two full brothers of missing person Alexander Mora Venancio were provided by PGR and EAAF. 16 loci are comparable to GMI data. PGR and EAAF data are concordant in the comparable range.

4 Biostatistics (Matching procedure)

Genetic family matching procedures using autosomal STR data gave very strong evidence for the victim profile mentioned above matching this family group.

The nuclear genetic data obtained from item 27-29102014 are consistent with the unidentified human remains belonging to a biological son of the father 13MR5470-14 (IG013) and a biological brother of 13MR5471-14 (IG014) and 13MR5472-14 (IG015).

Based upon allele frequency data for Caucasian population established by the GMI, the nuclear genetic data are at least 1 billion times more likely to be observed under the scenario that the unidentified remains originated from a biological son of the father 13MR5470-14 (IG013) and a biological brother of 13MR5471-14 (IG014) and 13MR5472-14 (IG015) as compared to the unidentified remains originating from an unrelated individual.

Remark: A possible paternal mutation can be observed between 13MR5470-14 (IG013) and 13MR5471-14 (IG014) at locus D8S1171.

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5 Summary

- 5.1 One bone sample (27-29102014) was handed over to our laboratory for DNA analyses.

Furthermore, DNA profiles of references, namely of the father and two full brothers of missing person Alexander Mora Venancio were made available for matching procedures at GMI by PGR.

In addition, DNA profiles of references, namely of the father and two full brothers of missing person Alexander Mora Venancio were made available for matching procedures at GMI by EAAF.

- 5.2 The DNA analyses of the bone sample (27-29102014) gave a male profile.
- 5.3 DNA profiles of the father and the two full brothers of missing person Alexander Mora Venancio were provided by PGR and EAAF. 16 loci are comparable to GMI data. PGR and EAAF data are concordant in the comparable range.
- 5.4 Genetic family matching procedures using autosomal STR data gave very strong evidence for the victim profile mentioned above matching this family group.



- 5.5 Based upon allele frequency data for the Caucasian population established by the GMI, the nuclear genetic data are at least 1 billion times more likely to be observed under the scenario that the unidentified remains originated from a biological son of the father (Ezequiel Mora Chora) and a biological full brother of the full brothers (Omar Mora Venancio and Hugo Mora Venancio) of missing person **Alexander Mora Venancio**, as compared to the unidentified remains originating from an unrelated individual.



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