D38 Population Genetic Data of 17 Y-STR Markers in Turkish Cypriots From Cyprus

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After attending this presentation, attendees will learn more about recent Y-chromosome analyses conducted on Turkish Cypriots from the island of Cyprus and see how this new Y-STR haplotype dataset may also contribute to a better understanding of the population genetics of the Eastern Mediterranean Basin.

This presentation will impact the forensic science community and the field of population genetics through the introduction of population data on 17 Y-STR loci for 206 individuals from the Turkish Cypriot population, which constitute the largest dataset reported from Cyprus so far and also from a region that is still relatively understudied.

Cyprus is the third largest island in the Mediterranean Sea situated 75km south of Turkey, 108km west of Lebanon, 380km north of Egypt, and 800km southeast of the Greek mainland. Today, there are two major ethnic groups on the island, namely the Turkish Cypriots who speak Turkish and are Muslims and the Greek Cypriots who speak Greek and are mostly Orthodox Christians. The subject of this study, the Turkish Cypriot population, resided all over the island in villages or cities consisting of either mixed ethnic background or exclusively Turkish Cypriot up until 1963-1974, but then largely relocated to/concentrated in the Turkish Cypriot-administrated North Cyprus since 1974. This study has analyzed 17 Y-chromosomal Short Tandem Repeat (STR) loci included in the AmpFlSTR® Y-filer™ system (DYS456, DYS389I, DYS390, DYS389II, DYS458, DYS19, DYS385a/b, DYS393, DYS391, DYS439, DYS635, DYS392, Y-GATA-H4, DYS437, DYS438, and DYS448) in 206 unrelated, healthy male individuals from the Turkish Cypriot population currently residing in North Cyprus. Among the 206 haplotypes observed, there are 198 unique haplotypes and 8 haplotypes that were found in two individuals each. While no locus duplications and null alleles were detected, 39 allelic variants in total were observed, the majority of which (22 out of 206 haplotypes or 10.68%) were comprised of intermediate variants at the DYS458 locus (alleles 16.2, 17.2, 18.2, 19.2, and 20.2). For the 198 unique haplotypes observed in the Turkish Cypriot dataset, a Discrimination Capacity (DC) of 0.9611 was observed, with an overall Haplotype Diversity (HD) of 0.9181, whereby the calculations included DYS389I and DYS389II allelic values as is and DYS385a/b alleles as diploid values. The calculated average Gene Diversity (GD) values ranged from 0.3576 to 0.9622 for the DYS392 and DYS385a/b loci, respectively. A comparison of the Turkish Cypriot Y-STR dataset with those already available from historically and/or geographically related countries (e.g., Turkey, Lebanon, Egypt, Greece, and Italy) through the use of Analysis of Molecular Variance (AMOVA) confirmed that this data does not deviate significantly from the typical core haplotypes of the region. While the Turkish Cypriot Y-STR haplotype dataset will find immediate use in the Committee on Missing Persons in Cyprus Project on the "Exhumation, Identification and Return of Remains of Missing Persons," it is also expected to contribute to the establishment of forensic genetic services in North Cyprus and to be useful for the global forensic genetics community in general.

Population Data, Y-STRs, Turkish Cypriots

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