GENETIC VARIATION OF Y-STR AND MITOCHONDRIAL DNA HAPLOTGROUPS AMONG THE LIBYAN POPULATION

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Libya, a north African country, first inhabited by Berbers, followed by Phoenicians, Greeks, Romans, Arabs and Ottomans, became independent in 1951 after a brief period as an Italian colony. The majority of people (65%) live in Tripoli. More than 30% of the inhabitants live in Cyrenaica, while the rest of the inhabitants (5%) live in the Fezzan region in the Sahara. The current population of Libya is composed of several distinct ethnic groups, most self-entitled Arabic, which brought their language and their culture to Libya, although the intercultural marriage with the Berbers and other local peoples, for centuries, may have produced a miscegenation of people. The Arabic-speaking Muslims, with ancient Arabic and Berber, represent 90% of the country's population. Tuaregs, Tebus and other black African groups make up for the rest of the population.

Objective: To estimate the genetic composition of the current population of Libya using matrilineal and patrilineal lineage markers.

Methods: Blood samples were collected from anonymous donors of both genders. We analyzed the HVI region of mtDNA (155 persons) and STR markers of the Y-chromosome (109 men) using the Power Plex Y system from Promega.

Results and Discussion: mtDNA analysis produced results consistent with the North African and Middle Eastern patterns. Haplogroup L is found in 50% of individuals, followed by H and J. Network analysis has demonstrated a radial correlation of L haplogroup with all other haplogroups. The haplotypes of Y-chromosome are less diverse; nevertheless they are represented in the African population. Network analysis of Y STR haplotypes has shown three major clusters, but none of them specific to one ethnic group. The high diversity of mtDNA haplogroups and the low diversity of Y-chromosome STR groups may reflect a population where admixture occurred over the centuries, but may also be a result of the cultural features of the Libyan social system, which includes polygamy.

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