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Cabo Verde islands: different maternal and paternal heritage testifies the nature of its first settlers

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Abstract. The Cabo Verde Archipelago was colonized by the Portuguese in the 15th century. The first male settlers were mostly European males who never exceeded 1% of the total population mainly constituted by slaves brought from the West African coast. No European women were among the settlers who went to Cabo Verde without their families and formed liaisons with slaves creating a new class of individuals, the ''mullato''. Here, we compare the maternal and paternal heritage of present-day Cabo Verdeans, by looking to their mtDNA and Y-biallelic markers profile. There is a strong asymmetry concerning both markers. The sub-Saharan component account for 93% of the total mitochondrial lineages of Cabo Verdeans, but less than 21% of the Y-chromosomes. The high percentage of Y-chromosome markers with an European affiliation attests for the importance that few lineages existing at the beginning of the settlement became widespread in the population in just 500 years. © 2003 Published by Elsevier B.V.

Keywords: Cabo Verde; mtDNA; Y-SNPs

1. Introduction

The Cabo Verde islands were settled in 1460, by a few European males (mainly Portuguese) and sub-Saharan slaves brought from the West African coast. No women were among the European settlers so a crioulo population appeared as a consequence of liaisons with slave women, eventually becoming the majority of the population [1]. Recently, two studies analysed the genetic composition of the Cabo Verde population by looking at mtDNA and Y-chromosome biallelic markers. While almost all mitochondrial lineages (93%) were of sub-Saharan origin, the majority of Y-chromosomes were found to trace back to European and North African lineages (84%).

2. Materials and methods

The same individuals were typed for mtDNA and Y-biallelic markers. In the case of mtDNA, 292 samples were sequenced for their mitochondrial HVS-I and HVS-II regions. When necessary, RFLPs of diagnostic nucleotide positions were also performed in order to

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Table 1
mtDNA haplogroup profiles (in %) in Cabo Verde

L1a	L1b	L1c	L2a	L2b	L2c	L3b	L3d	L3e	L3*	U6	Eu[a]
1	**8**	**8**	**20**	**3**	**17**	**9**	**7**	**17**	**4**	3	3

In bold are the sub-Saharan typical haplogroups.
[a] Eurasian.

Table 2
Y-chromosome haplogroup profiles (in %) in Cabo Verde

A	E(xE3a,E3b)	E3a	E3b	R1b	F(xR1b)
2	8	**16**	21	17	36

In bold are the sub-Saharan typical haplogroups.

unambiguously determine their haplogroup assignment. Primers, sample's origin and PCR conditions are described in detail elsewhere [2]. Two hundred one individuals were typed for 36 Y-SNPs (single nucleotide polymorphisms) following the procedure described in Ref. [3].

3. Results and discussion

MtDNA and Y-haplogroup frequencies observed in Cabo Verdeans are summarized in Tables 1 and 2. This population is a perfect choice for studies of admixture and behaviour (spread) of nuclear and non-nuclear genes due to the particularity of the putative parental populations being known and also genetically distinct: West Africans (sub-Saharans) and Portuguese (Europeans). Several studies have been done recently with the aim of getting a clear picture of the genetics of Cabo Verdeans (STRs [4] and HLA [5]). MtDNA haplogroups present in the population testify the almost null contribution of women of European ascendancy to the making of Cabo Verde genetic profile but it is striking that in 500 years, non-sub-Saharan Y-haplogroups became by far the most widespread lineages present in the population contrary to a common belief that the few European settlers had a low impact in the population's genetic profile.

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