

1. Record Nr.	TD18047899
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Titolo	Trans-Saharan connections: high-resolution analysis of human Y chromosome diversity [Tesi di dottorato]
Lingua di pubblicazione	Inglese
Formato	Tesi di dottorato
Livello bibliografico	Monografia
Note	diritti: info:eu-repo/semantics/openAccess In relazione con info:eu-repo/semantics/altIdentifier/hdl/11573/937168
Sommario	<p>Throughout the past millennia, the Sahara underwent strong climatic fluctuations. During the humid phases, the desert became fertile and was called the Green Sahara. During these periods, it was populated by fauna and hominins. The last humid phase occurred between 12 and 5 kya and the human occupation of the Sahara in that period is testified by a bulk of archaeological and paleoanthropological evidence. About 5 kya, an abrupt climatic change put an end to the last African humid period, leading to the desertification of the Sahara. After the onset of these arid conditions, the Sahara became a geographic barrier against the human movement, a fact testified by the strong genetic differentiation between present-day populations from northern and sub-Saharan Africa. In spite of the large amount of paleoclimatic and archaeological data, little is known regarding the dynamics of the peopling and the depopulation of the Sahara linked to the climatic changes. In this context, today, the rare Y chromosome haplogroups with a trans-Saharan distribution could represent the genetic relic of ancient widespread populations and could provide information about past expansions and migrations across the Green Sahara. In order to investigate the role of the last Green Sahara in the peopling of Africa, we deep sequenced ~ 3.3 Mb of 104 Y chromosomes belonging to four trans-Saharan haplogroups</p>

and identified 5966 mutations, of which 51% were novel. We obtained age estimates for mutation-defined haplogroups using Y chromosome sequences from four ancient specimens as calibration points. We also analysed the geographic distribution of 108 informative mutations by genotyping 7690 subjects from 141 populations (including 17 populations from literature), mainly from the African continent. We found that the coalescence age of all the trans-Saharan haplogroups date back to the last African humid period (12-5 kya), while most northern African or sub-Saharan specific sub-haplogroups expanded locally in the subsequent arid phase (< 5 kya). Our findings are consistent with the hypothesis that the Green Sahara represented a corridor for human movements and exclude recent historical events, such as the Arab slave trade, as a major determinant of the gene pool of present-day northern African populations.

Localizzazioni e accesso

http://memoria.depositolegale.it/*/http://hdl.handle.net/11573/937168
