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Human mitochondrial DNA variability in East Africa: a study of the Nyangatom and the Dasenech from the Omo River Lower Valley, Ethiopia

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The genetic diversity of mitochondrial DNA in East African populations, such as that observed in the Turkana from Kenya, has been shown to exceed that of all other African populations. Thus East Africa is seen as a region home for populations whose genetic pools could provide crucial clues to the debate on modern human origins. We have studied two agro-pastoralist populations settled in the Omo River Lower Valley that are linguistically unrelated: the Dasenech from the north of Lake Turkana, who speak an Eastern Cushitic language of the Afro-Asiatic family, and their north-eastern neighbours, the Nyangatom, who speak a Nilo-Saharan Nilotic language. Our aim is to assess the influence of geographic proximity between these two populations on their genetic relationships, in spite of their high level of linguistic differentiation. Small quantities of DNA were successfully extracted from more than 300 sera collected in these two populations in the early seventies, and are currently used to investigate the polymorphism of the hypervariable control-region of the mitochondrial genome. Preliminary results reveal a high level of mtDNA variability in both populations. HVRI sequences matching those observed in the Nyangatom and Dasenech are found among several other East-African populations. Serological analyses of the GM polymorphism, performed in parallel to mtDNA, indicate that the Nyangatom are highly differentiated from neighbouring Afro-Asiatic groups but close to Nilo-Saharan from Chad, thus matching linguistic rather than geographic relationships. These results are discussed in the context of the history of East African populations.