

# Macrohaplogroup M Did not Originate in India

Original Article

## Updating Phylogeny of Mitochondrial DNA Macrohaplogroup M in India: Dispersal of Modern Human in South Asian Corridor

### Macrohaplogroup M Did not Originate in India

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by

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Chandrasekar et al provide a good discussion of the phylogeny of Indian macrohaplogroup M. Although they claimed to have examined all of the M haplogroups in India they failed to discuss haplogroup M1, which is also found in India [3-4]. This failure to discuss all the M lineages in India cast doubt on the conclusions of the authors of this study.

The researchers argue that the M macrohaplogroup in India developed in situ. They base this claim on the research of Gonzalez et al [1].

Chandrasekar et al maintain that the research in [1] indicates that M1 probably originated in Southwest Asia and through a back migration hg M and U6 returned to Africa. This is false hg M probably originated in Africa, not Asia [3].

Chandrasekar et al claim that hg M arose in Southwest Asia 40kya. This date is ludicrous because Neanderthals lived in that region at this time. The only anatomically modern humans in Western Eurasia at this time were Cro-Magnon man who carried haplogroup N.

To estimate the coalescence age of haplogroup M1 Gonzalez et al [1] analyzed 13 complete sequences of haplogroup M1.

Gonzalez et al claims that the M1c lineage is the oldest M1 subclade based on the coalescence age estimation of the M1 subgroup: M1a (16756 +-5997), M1b (10155 +-3590) and M1c (19040+-4916). This makes M1a and M1b the youngest clades.

The available sample for M1c was complete sequences from individuals found in Jordan, Senegal, and Spain. The small data set make a precise estimation of the errors in the data uncertain.

The limited sample for M1c makes it difficult to effectively quantify the estimation error for the data, since error increases from level to level in models possessing a hierarchical structure.

The small sample size makes the confidence intervals overlap. This calls into question the conclusions of Gonzalez et al [1] in relation to the ages of hg M1 despite the differing levels of hierarchy.

In addition to the evidence of the coalescence age estimation in support of the antiquity of M1c, Gonzalez et al believe the presence of M1c among Jordanians is an important indicator for the ancient origin of this clade. The evidence of M1c in Jordan, does not really add to the hypothesis that M1c is the oldest clade because the presence of this clade in the Middle East can be explained by the thousands of West Africans who have taken the hajj to Mecca, and remained in the Middle East, instead of returning to West Africa.

The Valencia sample can also be explained by the history of Islam. There is a direct link between

Senegal and Yusuf ibn Tashufin. Yusuf founded the Almoravids. The Almoravid empire extended from Senegal to Spain [2].

This link comes from the fact that many of the followers of Tashufin came from the ribats or 'religious schools' he had established in northern Senegal. Troops from these ribats formed the backbone of Tashufin's army when he invaded Spain in 1086[2]. These African Muslims ruled much of Spain until 1492. Since M1c is presently found in Senegal, the carrier of M1c reported by Gonzalez et al in Valencia may be a descendent of these African Almoravids that ruled Spain for over 700 years

Sub-Saharan Africans probably spread hg M1c to Eurasia. Gonzalez et al reported that the carriers of the M1c subset were from Jordan, Senegal and Valencia [1]. It was revealed above that 1) many of the Muslim troops in Tashufin's army that conquered Spain in 1086 AD, came from Senegal; and 2) many West Africans after taking the Hajj, visited Jerusalem and settled in the Middle East. Even if we eliminate the Jordan sample, the evidence from Valencia and Senegal gives a 67% probability that M1c originated in Senegal, not Asia or North Africa because of the historical presence of Sub-Saharan Africans in both areas . This provides support for an African origin of M1.

Chandrasekar et al claim that India is the only region where there is a variety of M subclades is also false. In Africa, for example in addition to M1, we also find haplogroups M3, M30 and M33.

Chandrasekar et al claims that there is no influence of African haplogroups in India. The presence of M1 among South Indian Dravidian speakers make it clear that African mtDNA is found in India [1] [3]. This along with African y-chromosomes and African HLA among Dravidian tribal groups indicate a recent African influence among South Indians [4-6]. This is not surprising since Dravidian speakers formerly belonged to the C-Group culture of Nubia, and only entered India 5kya [4].

The distribution of continental African populations carrying M haplogroups favors Africa as the place of origin for this macrohaplogroup instead of India. The population distributions for the M macrohaplogroup in Africa make it clear that haplogroup M originated in Africa, not Asia or North Africa.

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**No competing interests declared.**

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