

Genetic Evidence for racial mixing in Ancient GreecePart 8: GENETIC EVIDENCE OF RACIAL MIXING IN GREECE

Classical Grecian civilization came to a fall because of the large scale importation of racially alien slaves from northern and sub-Saharan Africa. Unsurprisingly, the genetic evidence bears out the historical record.

Caveat: It is important to bear in mind that these results do not imply that all modern Greeks are of mixed origin.

SUB-SAHARAN GENES IN GREECE

The first major study of gene frequencies in Greece, Macedonia and Crete was completed in December 2000, titled "HLA genes in Macedonians and the sub-Saharan origin of the Greeks", and published by the journal "Tissue Antigens" that year.

[http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list\\_uids=11260506&dopt=Abstract](http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=11260506&dopt=Abstract)

Tissue Antigens February 2001, vol. 57, no. 2, pp. 118-127  
HLA genes in Macedonians and the sub-Saharan origin of the Greeks  
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HLA alleles have been determined in individuals from the Republic of Macedonia by DNA typing and sequencing. HLA-A, -B, -DR, -DQ allele frequencies and extended haplotypes have been for the first time determined and the results compared to those of other Mediterraneans, particularly with their neighbouring Greeks. Genetic distances, neighbor-joining dendrograms and correspondence analysis have been performed. The following conclusions have been reached: 1) Macedonians belong to the "older" Mediterranean substratum, like Iberians (including Basques), North Africans, Italians, French, Cretans, Jews, Lebanese, Turks (Anatolians), Armenians and Iranians, 2) Macedonians are not related with geographically close Greeks, who do not belong to the "older" Mediterranean substratum, 3) Greeks are found to have a substantial relatedness to sub-Saharan (Ethiopian) people, which separate them from other Mediterranean groups. Both Greeks and Ethiopians share quasi-specific DRB1 alleles, such as \*0305, \*0307, \*0411, \*0413, \*0416, \*0417, \*0420, \*1110, \*1112, \*1304 and \*1310. Genetic distances are closer between Greeks and Ethiopian/sub-Saharan groups than to any other Mediterranean group and finally Greeks cluster with Ethiopians/sub-Saharans in both neighbour joining dendrograms and correspondence analyses. The time period when these relationships might have occurred was ancient but uncertain and might be related to the displacement of Egyptian-Ethiopian people living in pharaonic Egypt.

Fig. 2. Correspondence analysis showing a global view of the relationship between Mediterraneans and sub-Saharan and Black African populations according to the HLA allele frequencies in three dimensions (bidimensional representation). HLA-DRB1 allele frequencies data.

Fig. 3. Correspondence analysis showing a global view of the relationship

among West Mediterraneans (green), East Mediterraneans (orange), Greeks and sub-Saharan populations (red) and Blacks (grey) according to HLA allele frequencies in three dimensions (bidimensional representation). HLA-DR and DQ (low resolution) allele frequencies data.

Table 5 shows the presence of these Greek alleles mainly in sub-Saharan populations from Ethiopia (Amhara, Oromo), Sudan (Nuba) and West Africa (Rimaibe, Fulani, Mossi).

It may be deduced from these data that sub-Saharans and Greeks share quasi-specific HLA-DRB1 alleles. The neighbor-joining tree (Fig. 1) and the correspondence analyses (Figs 2 and 3) confirm this Greek/sub-Saharan relatedness. The HLA-DRB1 genetic distances between Greeks and other Mediterraneans are shown in Table 6 and also support a sub-Saharan/Greek relatedness; genetic distances with HLA-DR and -DQ generic typings (not shown) give essentially the same results.

Our results show that Macedonians are related to other Mediterraneans and do not show a close relationship with Greeks; however they do with Cretans (Tables 3, 4, Figs 1-3). This supports the theory that Macedonians are one of the most ancient peoples existing in the Balkan peninsula, probably long before arrival of the Mycaenian Greeks (10) about 2000 B.C. Other possible explanation is that they might have shared a genetic background with the Greeks before an hypothetical admixture between Greeks and sub-Saharans might have occurred.

Much to our surprise, the reason why Greeks did not show a close relatedness with all the other Mediterraneans analyzed (Tables 5, 6 and Figs 1-3) was their genetic relationship with sub-Saharan ethnic groups now residing in Ethiopia, Sudan and West Africa (Burkina-Fasso). Although some Greek DRB1 alleles are not completely specific of the Greek/sub-Saharan sharing, the list of alleles (Table 5) is self-explanatory. The conclusion is that part of the Greek genetic pool may be sub-Saharan and that the admixture has occurred at an uncertain but ancient time.

Thus, it is hypothesized that there could have been a migration from southern Sahara which mixed with ancient Greeks to give rise to a part of the present day Greek genetic background. The admixture must have occurred in the Aegean Islands and Athens area at least.

Also, the time when admixture occurred could be after the overthrow of some of the Negroid Egyptian dynasties (Nubian or from other periods) or after undetermined natural catastrophes (i.e.: dryness).

(Full text in PDF format available here.)

(A study of how HLA Alleles are race specific can be found here)

#### MONGOLOID MARKER IN GREECE

A recent study of mtDNA in Greece revealed the presence of the HpaI morph 1 sequence, which is a Mongoloid marker, introduced either through slavery or the mixed race Ottoman occupation.

[http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list\\_uids=7916320&dopt=Abstract](http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=7916320&dopt=Abstract)

1: Hum Biol. 1994 Aug;66(4):601-11.  
Mitochondrial DNA polymorphism in northern Greece.  
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The polymorphism of human mitochondrial DNA (mtDNA) was studied in 118 unrelated Greeks (from northern Greece) using total blood cell DNA and the restriction enzymes HpaI, BamHI, HaeII, MspI, AvaII, and HincII. One new morph was identified for MspI (named MspI morph 18Gr) and is the result of a mutation in a previously thought monomorphic site at 104 bp. HpaI morph 1 was detected for the first time in a European sample. Also, AvaII morph 13 was observed in Greece in a frequency higher (5.93%) than that found in any other population. Eighteen mtDNA types were identified, three of which are new [86-2 (1-3-1-4-9-2), 87-2 (2-3-1-1-13-2), and 88-2 (2-1-1-18Gr-1-2)] and can be derived from already known mtDNA types by single restriction site changes. Type 57-2 (2-3-1-4-13-2), which had been previously characterized as "Italian," was found with higher frequency (4.24%) in northern Greece. The calculation of genetic distances and chi-square values through Monte Carlo simulation shows that the Greek sample does not differ from the Italian sample.  
PMID: 7916320 [PubMed - indexed for MEDLINE]

#### AFRICAN BLOOD GROUPS IN GREECE

"As usual in the Mediterranean area CDe is high, and cDe, presumably from African admixture, reaches about 6 per cent." (p73)

Cyprus: ". . . the presence of over 5 per cent cDe suggests African immigration." (p73)

Source: Mourant AE, Koplac AC, Domaniewska-Sobczak K. The distribution of the human blood groups and other polymorphisms. London, Oxford University Press, 1976.

#### 28% MIDDLE EASTERN HAPLOGROUP HG9 IN GREECE

According to a study conducted by Lluís Quintana-Murci et. al.. and published in The American Journal of Human Genetics, (Volume 68, 2001, pages 537-542), the Middle Eastern Haplogroup HG9 runs at 28% in Greece.

<http://www.journals.uchicago.edu/AJHG/journal/issues/v68n2/002418/002418.html>  
Am. J. Hum. Genet., 68:537-542, 2001

Y-Chromosome Lineages Trace Diffusion of People and Languages in Southwestern Asia

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. . .  
HG 9, defined by the 12f2 deletion, is largely confined to caucasoid populations, with its highest frequencies being found in Middle Eastern populations.

In Iranian populations, HG 9 shows very high frequencies (30-60%). Populations from the southeastern Caspian region and the Zagros Mountains exhibit the highest frequencies so far observed (60%). High frequencies of HG 9 have been found throughout the Fertile Crescent region (Hammer et al. 2000): Palestinians, 51%; Lebanese, 46%; and Syrians, 57%. The incidences

of HG 9 in Pakistan (18%) and northern India (19%) indicate a decreasing-frequency cline from Iran toward India.

Table 1

Frequency Distribution of HG 9 and HG 3 in Human Populations from Different Regions

REGIONa NFREQUENCYb

(%) SOURCE

HG 9HG 3

Iran:c

Azarbaijan833417Present study  
Zagros Mountains34596Present study  
Western Caspian32533Present study  
Eastern Caspian255620Present study  
Tehran region503014Present study  
Central-north79399Present study  
Central-south723817Present study  
Eastern provinces263531Present study

Pakistan7081832Present study

India:

Gujurat581926Present study  
Jaunpur152NT20Zerjal et al. (1999)  
Indians mixed72NT15Hammer et al. (1998)  
Uttar Pradesh627NTSemino et al. (1996)

Sri Lanka83NT15Hammer et al. (1998)

Middle East:

Lebanon24464Hammer et al. (2000)  
Syria91579Hammer et al. (2000)  
Palestine73510Hammer et al. (2000)

Europe:

Turkey167335Rosser et al. (2000)  
Russia122447Rosser et al. (2000)  
Ukraine27030Rosser et al. (2000)  
Latvia34041Rosser et al. (2000)  
Poland112454Rosser et al. (2000)  
Greece36288Rosser et al. (2000)  
Italy99202Rosser et al. (2000)  
Spain12632Rosser et al. (2000)

Africa:

Algeria27410Rosser et al. (2000)  
Sub-Saharan Africa19910Hammer et al. (2000)

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