

Ancestry Informative Markers Survey
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What did we do?

In your 23 pairs of chromosomes there are somewhere between 30,000 and 100,000 genes. We examined the DNA in about 30 genes: these genes are what we refer to as Ancestry Informative Markers or AIMS.

They are sections of DNA which we find vary quite markedly between individuals and population types. In this study we included markers such as those involved in producing the pigment melanin responsible for variation in skin colour. Everyone has these genes, but their DNA sequences will vary slightly between individuals. We call these gene variations "alleles" of the gene.

(NB Because we are only looking at 30 AIMS, the results are not exact, and the margin of error can be 15% or even higher)

Results using Ancestry Informative Markers

We wanted to determine the contribution of genes which we typically see in European and African populations in each individual case, and what the results were in the group as a whole.

The overall result was that of the sample, on average the contribution of African alleles was about 89% and European alleles 11%. The figure is the same for both men and women.

Over 40% had between 90 and 100% African genetic contribution, while for 3% it was less than 50%

(see Table 1 below "Distribution of Individual Admixture")

When we did a similar study on approximately 200 African Americans living in Washington DC, we found an approximately 80% African, 20% European split.

Does Skin Colour correlate to African alleles?

We also wanted to see whether there was any correlation between the level of skin pigmentation and the percentage of "African" alleles and "European" alleles, which is why we asked you to take pigment readings using the dermaspectrometer.

When we plot the two characteristics against each other (see table 2 below entitled "Individual Admixture vs. Pigmentation - or M value) we do find some correlation. However, it's not a strong correlation and you can see there are wide variations. For instance people with a 100% African ancestry have widely varying skin pigmentation. In plain English this means that although skin colour can be an indicator of proportions of African and European genetic contribution, the bottom line is "you can't tell by looking".

Table 1



Table 2

