

### Y-Chromosome Analysis - hg1

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#### What did we do?

You inherited your Y chromosome from your father. He inherited it from his father, who in turn inherited it from his father. So Y chromosomes tell you nothing about your mother's father, your grandmother's father, your maternal grandfather's father etc, but only about your direct paternal lineage.

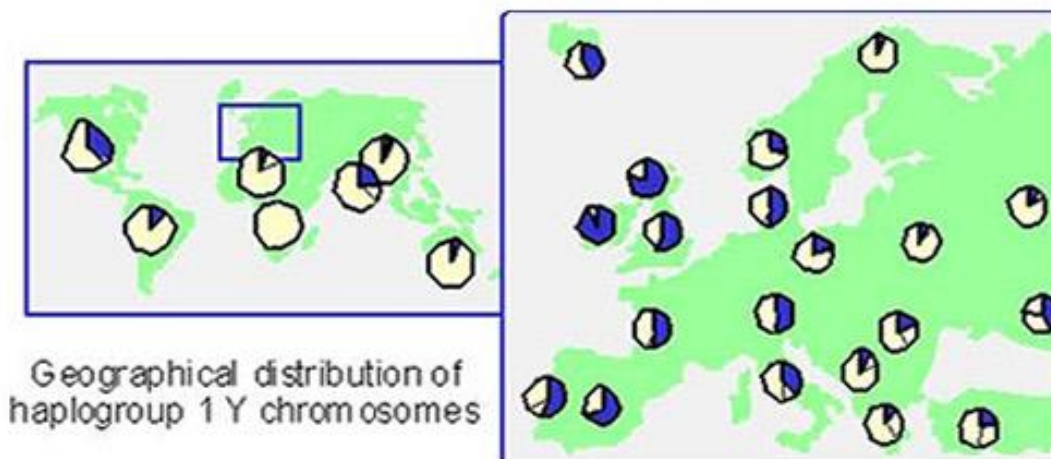
We examined the DNA in your Y chromosome and compared it with databases of other Y Chromosomes to get an idea of where it might have originated - in other words, where your paternal ancestry lies. To do this we look at parts of the Y chromosome that vary between different men. This variation is not connected in any way to health or disease.

One kind of variation changes quite rapidly and allows us to distinguish between most men in a population - it's a bit like a Y chromosome "signature". While these signatures are very discriminating between individuals, they also give us an idea of the origins of a Y chromosome.

The other kind of variation changes very slowly, so there may be large groups of men in a population who share a Y chromosome when it is defined this way - we refer to this as a **haplogroup (hg)**. However, in many cases the haplogroup to which a Y chromosome belongs provides very clear evidence about where it originated.

#### What can we tell you about the origins of your Y chromosome?

Your Y chromosome belongs to hg1. The map below shows the global and European distribution of hg1 chromosomes among indigenous populations of these regions.



As you can see, hg1 chromosomes are the commonest kind of Y chromosomes in Europe, are also found in Asia and in the Americas, but are not found in Sub-Saharan Africa, which tells us that your paternal ancestor was probably not an African.

When we look at the signature of your Y chromosome we get more information which allows us to distinguish between hg1 chromosomes from different places. We are confident that your Y chromosome originates in Europe. Haplogroup 1 chromosomes are regarded as descendants of chromosomes that were in Europe in the Palaeolithic (Old Stone Age) era, over 10,000 years ago.

Of the 110 Y chromosomes from Afro-Caribbean men we looked at, we found 21 (17%) hg1 chromosomes. Overall, we estimate that 30/110 (27%) of the Y chromosomes had European origins.

#### What can't we tell you?

From the information we have at present about European Y chromosome diversity, we can't say with any certainty which part of Europe your paternal ancestors came from (see table below). But hg1 is most frequent in the west (for example, the British Isles and the Iberian peninsula). Also, we can't tell you when this European Y chromosome came into your lineage, though it must be after your ancestors left Africa.

## MOTHERLAND - EXPLANATIONS

If you are interested in finding out more detail you can enter your own data (see table below) into the YSTR database of European Y-chromosome sequences. This is what we did for Mark Anderson in the film.

You go to [www.ystr.org/index.html](http://www.ystr.org/index.html) and enter the data as prompted.

NAME	DYS390	DYS391	DYS392	DYS393	DYS19	DYS389I	DYS389II	DYS385I	DYS385II	Report
M12	23	11	13	13	14	13	29	11	14	hg1
M140	24	10	13	13	14	13	29	13	15	hg1
M204	23	11	13	13	14	13	29	11	15	hg1
M62	24	11	13	13	14	13	29	11	14	hg1
M92	23	11	13	13	14	13	29	11	15	hg1
M95	23	11	13	13	14	13	29	11	15	hg1
M96	24	10	13	13	14	13	29	11	14	hg1
M13	24	11	13	14	14	13	30	11	14	hg1
M35	24	10	14	13	14	13	29	11	14	hg1
M8	24	10	13	13	15	13	29	11	15	hg1
M114	24	10	13	13	14	13	30	11	14	hg1
M120	24	10	13	14	14	13	29	12	14	hg1
M2	24	10	13	13	14	13	30	11	14	hg1
M200	24	11	13	13	14	14	30	13	13	hg1
M203	25	10	14	13	14	13	29	11	13	hg1
M214	24	10	13	13	14	14	30	11	15	hg1
M51	24	10	13	13	14	13	30	11	14	hg1
M65	25	10	14	13	14	13	29	12	13	hg1
M19	25	11	13	13	14	14	30	11	14	hg1
M31	25	11	14	14	14	13	29	11	13	hg1
M130	24	10	13	13	13	13	30	13	17	hg1
M135	23	10	11	13	14	12	28	13	14	hg1
M73	21	10	11	13	14	12	28	13	14	hg1
M107	22	10	11	13	14	12	28	13	14	hg1
M58	22	10	11	13	15	12	28	13	14	hg1
M401	22	10	11	13	15	12	29	13	16	hg1
M261	25	11	11	13	15	12	28	15	16	hg1
M38	22	10	11	14	14	12	29	14	16	hg1
M72	21	10	11	14	15	12	28	13	15	hg1

It's important to realise that when we look at your Y chromosome we are getting information about only one of your ancestors - the man who passed his Y chromosome down to you through the generations. You have many ancestors - over 1000 only ten generations back - and we cannot tell you anything about them from the analysis we do. The Y chromosome is only a very small piece of the puzzle.