MRC/NHLS/WITS HUMAN GENOMIC
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GENETIC ANCESTRY TESTING REPORT

NAME: Robert Dempster

SEX: Male

MtDNA analysis

MtDNA HVRI variation: 16069C-T, 16126T-C, 16145G-A, 16183A-C, 16189T-C, 16231T-C, 16261C-T

MtDNA HVRII variation: 73A-G, 150C-T, 152T-C, 195T-C, 215A-G, 263A-G, 295C-T, 309 insertion of a C

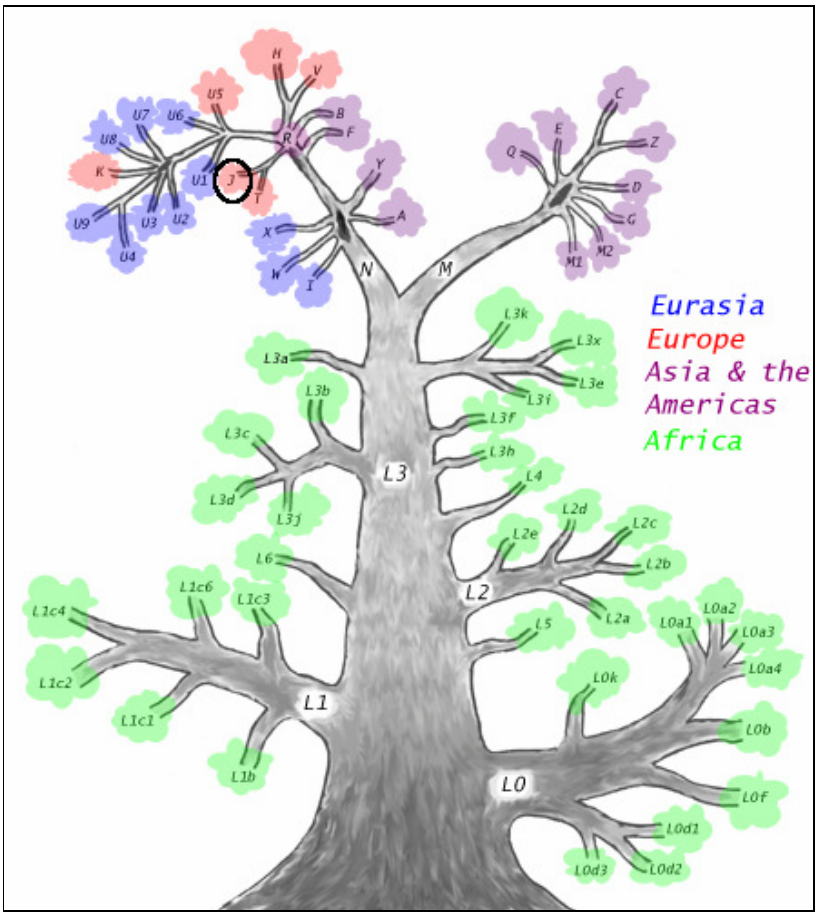
MtDNA haplogroup: **J2a**

MtDNA matches: When we compared your mtDNA profile with about 10,600 mtDNA haplotypes in 2 international databases we found **3** identical matches in Swiss individuals (Metspalu *et al.* 2004, http://www.bioanth.cam.ac.uk/mtDNA/). A search of our database yielded **8** identical matches in South African White individuals.

Haplogroup information

It is possible for us to reconstruct the evolutionary history of all mtDNA lineages found in living peoples to a common ancestor, sometimes referred to in the popular press as “Mitochondrial Eve”. This ancestor lived in Africa, about 150,000 years ago. She lies at the root of all the maternal ancestries of every one of the six billion people in the world. We are all her direct maternal descendants. The various “patterns” of mtDNA sequence variation found in living people are referred to as “haplogroups” that are defined by the presence of certain changes (mutations) when compared to a published sequence referred to as the reference sequence. These mutations are random and not associated with any disease. The

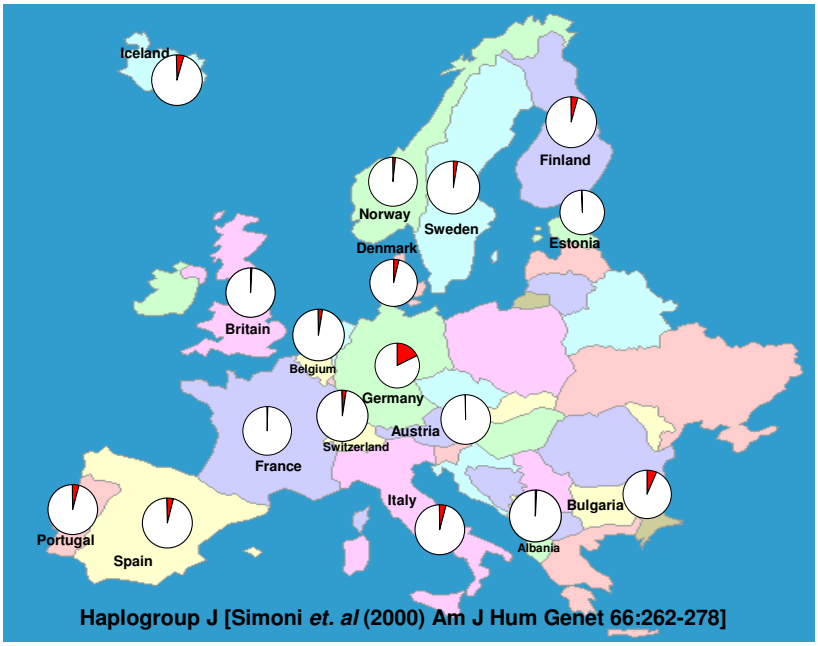
haplogroups, or branches, are represented in the tree below, and your branch is indicated within the ring.



Your mtDNA profile is consistent with a European ancestry. Brian Sykes (2001) at Oxford University introduced names to personalize the mtDNA types found among people of European origin and referred to the seven common haplogroups (U, X, H, V, T, K and J) as the “Seven Daughters of Eve”. These seven women have been given the names Ursula (Latin for “she-bear”), Xenia (Greek for “hospitable”), Helena (Greek for “light”), Velda (Scandinavian for “ruler”), Tara (Gaelic for “rock”), Katrine (Greek for “pure”) and Jasmine (Persian for “flower”). The first letter of the name corresponds to the haplogroup designation. http://www.oxfordancestors.com/

The clan of Jasmine is the second largest of the seven European clans after Helena and is the only one to have its origins outside Europe. Jasmine and her descendants, who now make up 17% of Europeans (see figure below), were

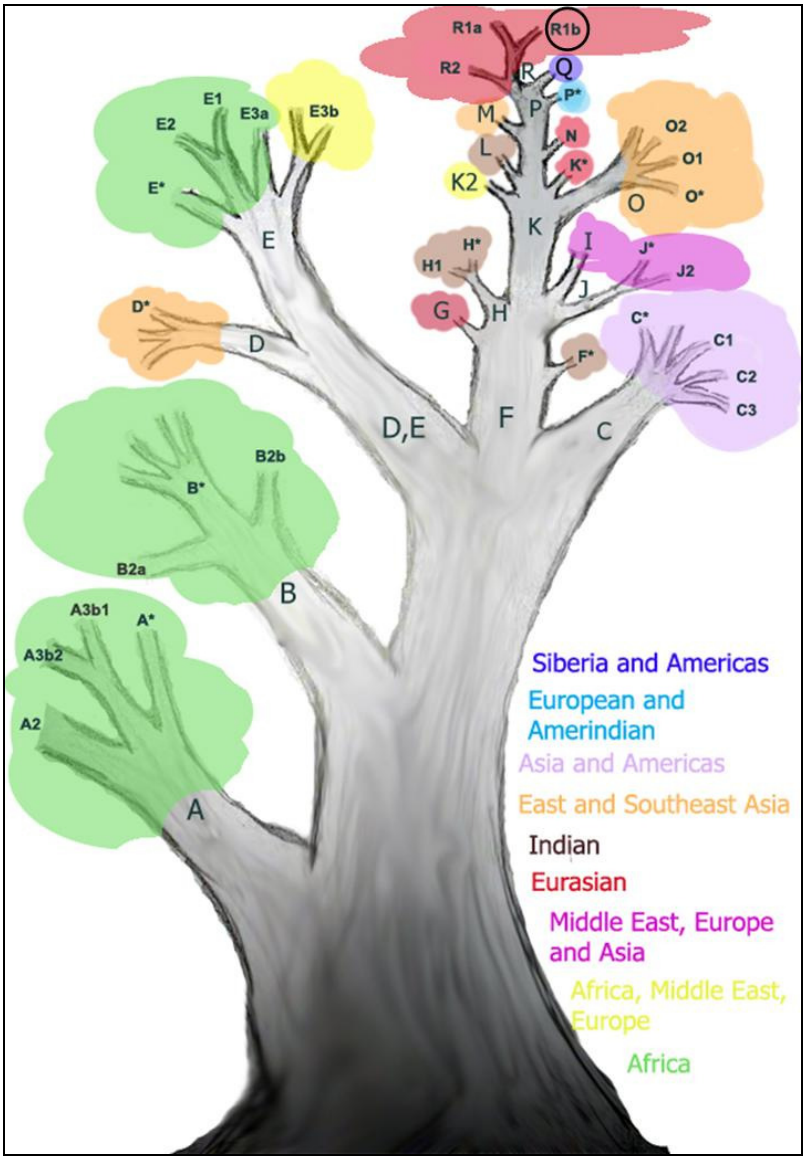
among the first farmers and brought the agricultural revolution to Europe from the Middle East around 10,000 years ago. Haplogroup J is not found evenly distributed in Europe, one distinctive branch follows the Mediterranean coast to Spain and Portugal, and another shadows through central Europe. Your mtDNA sequence profile is consistent with that of a J2a lineage. J2a is a subgroup of haplogroup J. In South Africa, haplogroup J is found at a frequency of about 9% in the White population.



Haplogroup J [Simoni *et. al* (2000) Am J Hum Genet 66:262-278]

Y chromosome analysis

Two kinds of Y chromosome data were used to resolve your Y chromosome lineage. The first involved screening for certain mutations to elucidate the Y chromosome *haplogroup* (groups of lineages that are identical by descent since they share a common defining mutation). The second involved the use of faster evolving DNA called short tandem repeats (STRs) that we use to further resolve the haplogroup. By screening for several of these STR markers it is possible to derive a *haplotype*, a combination of the patterns observed for each region on the Y chromosome tested. The haplogroups, or branches, are represented in the tree below, and your branch is indicated within the ring.



Y chromosome haplogroup: R-M343 (R1b)

Haplogroup information:

Haplogroup R-M343 is the most common haplogroup in European populations. It is believed to have expanded throughout Europe as humans re-colonized after the last glacial maximum, 10 to 12 thousand years ago. This lineage is also the haplogroup containing the Atlantic Modal haplotype. R-M343 has a frequency of about 72% in British, 65% in the Orkney Islands (Wells *et al.* 2001), 70.4% in

Dutch, 52.2% in French and 50% in Germans (Semino *et al.* 2000). In Asia, R-M343 is much less common, occurring sporadically in a number of populations. The frequency of R-M343 is about 65% in South African Whites.

STR profile:

Marker	DYS19	DYS389I	DYS389II	DYS390	DYS391	DYS392	DYS393
Profile	14	13	30	24	10	13	13
Range	10-19	9-17	24-35	12-29	6-15	6-18	7-17

Marker	DYS385	DYS438	DYS439
Profile	11, 14	12	12
Range	7-25	8-12	8-15

STR Matches:

We compared your Y chromosome STR profile with about 55,000 Y chromosome haplotypes from a STR database (www.yhrd.org). Using all of the ten markers above, your STR profile had **63** matches worldwide, in 25 North Americans, 21 Europeans, 14 Latin Americans, and 3 Inuit individuals.

A search of our database using all ten markers (both tables above) we found **3** identical matches in 2 South African Whites and 1 Caucasian Australian individual.

References

Metspalu *et al.* (2004) BMC Genetics 5:26
Semino *et al.* (2000) Science 290: 1155-1159
Sykes B (2001) The seven daughters of Eve. Bantam Press, London
Wells *et al.* (2001) Proc Natl Aca Sci USA 98: 10244-10249
Wells S (2006) Deep Ancestry: Inside the Genographic Project. National Geographic, Washington D.C.