

GeoGene

MtDNA sequence for Jane Smith

GeoGene has used recent advances in genetic research and archaeology to trace Jane Smith's ancestry back approximately 150,000 years. This far back, the unique family trees of every living human converge at a single African woman, known as "Mitochondrial Eve". By analysing Jane's mitochondrial DNA, GeoGene has identified genetic markers that have been passed from generation to generation along her family's female line. These have been compared to markers belonging to tens of thousands of people from all over the world. Combining this information with discoveries about the earliest human journeys (journeys that helped to shape the world we know today), GeoGene can now reveal the relationship between these epic events and Jane's own direct maternal ancestry.

Eve's Children

After analysing your mitochondrial DNA, GeoGene has inferred the presence of five key genetic markers, at sites 3594C, 10873T, 12705C, 16223C and 12308G. The eldest of these (3594C) reveals that you are descended through a genetic group known as "L3". This marker first appeared between 78,000 and 103,000 years ago, in a descendent of Mitochondrial Eve who belonged to a small population of hunter-gatherers living in East Africa.

Out of Africa

By about 75,000 years ago L3 had given rise to a number of subgroups. Some of these remained within Africa, but two (groups M and N) migrated out of humanity's ancient homeland, probably setting off from the east African coast and crossing the Red Sea. The exact point of their departure is very likely to have been at what is now Djibouti, from where they travelled across the strait of Bab el Mandab. Here, the Red Sea narrows and the distance from Africa into present-day Yemen is today only about 20 km. At that time, the distance would have been even less as the climate was growing colder and the ice caps were locking in water, causing sea levels to drop. Your marker at 10873T reveals that you are descended through the great N group, the various subdivisions of which together account for over 90% of European and West Asian maternal lineages, as well as many in Asia and as far away as Aboriginal Australia and New Guinea. The fact that Group N lineages have become so widespread suggests that your ancestors were among the very first modern humans to journey out of Africa.

The Green Corridor

Group N subdivided further and your markers at 12705C and 16223C reveal that you are descended through a group called R. As the climate around the Persian Gulf grew warmer and moister, the deserts to the north were divided by a narrow strip of vegetation (the "Fertile Crescent") stretching up towards the eastern Mediterranean shore. The hunter-gatherer populations that expanded northwest along this corridor included some members of Group R, among them your own ancestors.

The Ancient Egyptians

You inherit your 12308G marker from an ancestor who lived between 67,000 and 51,000 years ago, and this identifies you as descended through Group U, a subdivision of R. The present-day geographical distribution of your genetic cousins in U is indicated on the map below. Additional analysis of the HVSI region of your mitochondrial DNA shows that you belong to a specific subgroup of U called U6, which is approximately 44,000 years old. While many members of Group U journeyed towards Europe or the Near East, some of those belonging to U6 migrated towards India. Many U6 members, however, travelled westward along the southern shores of the Mediterranean, expanding throughout North Africa where they seem to have been among the earliest inhabitants. This provides evidence that you may be genetically linked to the Ancient Egyptian civilisation, which flourished between about 3,300 B.C. and 30 B.C. Today, people belonging to U6 are often found among Berber tribes, particularly the Mozabites from Algeria.

Present day distribution of your group U6 cousins



The main GeoCousins

- L0 Ancient Africa
- L1 Congo
- L2 Guinea
- L3 African Rift Valley
- M1 Horn of Africa
- M2 Southern route
- M7 Cathay
- M8 Manchu
- C Yayoi
- D Yellow river
- G Silk road
- A Beringia
- X Dene-Caucasian
- W Asia minor
- I Asia minor
- B Pacific colonisers
- F Indochina
- J European farmers
- T Fertile Crescent
- U2 Indus
- U5 European hunter-gatherers
- U6 Maghreb
- K Levant
- V Northwards after the Ice Age
- H Upper Palaeolithic

