

# GeoGene

## GeoFather DNA Sequence for John Doyle

GeoGene has used recent advances in genetic research and archaeology to trace John Doyle's family history back approximately 90,000 years, to the very beginnings of humanity. By analysing DNA in the Y chromosome John inherited from his father, GeoGene has identified genetic markers that have been passed from generation to generation along his family's male line. These have been compared to markers belonging to tens of thousands of people from all over the world. Combining this genetic and geographical information with what has been discovered 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 John's own direct paternal ancestry.

### The Sons of Adam

After analysing your DNA, GeoGene has identified the presence of four key genetic markers on your Y-chromosome, called: M168, YAP, M40 and M35. The eldest of these (M168) first appeared in a man who lived in East Africa approximately 90,000 years ago. This man is one of your direct paternal ancestors. He has become known as "Eurasian Adam" because essentially every non-African man alive today as well as the majority of African men belongs to one of the many family trees descended from him.

### Your ancestors in ancient Africa

Your YAP marker first appeared in a descendent of Eurasian Adam who lived in Africa around 60,000 years ago. He is another of your ancestors. Between around 50,000 – 60,000 years ago, some of this man's descendents were probably among the first groups of modern humans to journey out of Africa, although your own ancestors did not leave with them. GeoGene can tell this because your Y-chromosome bears an additional marker called M40, which arose in Africa approximately 35,000 years ago. People with M40 continued to spread throughout the African interior, diversifying into a number of different lineages, of which your own is identified by M35.

### Your genetic cousins

You inherited M35 from a man who lived in Africa approximately 30,000 years ago. He is your GeoFather and today his M35-bearing descendents – your "genetic cousins" – are predominantly found in the following parts of the world.

### Your genetic family expands throughout Africa, and beyond ...

Some M35-bearing people migrated into Egypt, 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. Others travelled towards eastern Africa, where M35 is today carried by almost half of Ethiopian men. Between around 30,000 and 10,000 years ago, people carrying M35 arrived in the Maghreb, the NW African region loosely centred on Algeria, Tunisia and Morocco. Their genetic legacy still appears in some 75% of NW African men, being particularly prominent in Berber tribes. During the Moorish conquests of Iberia (A.D. 711 – A.D. 1492), Berber warriors almost certainly carried M35 north across the Strait of Gibraltar, and it is found today in approximately 5% of southern Iberian men.

### The Fertile Crescent and the rise of agriculture

M35 is also associated with the spread of agriculture out of the Near Eastern "Fertile Crescent" (modern-day Israel, Syria, SE Turkey and Iraq). Nomadic tribes of hunter-gathers, including M35-bearing lineages, began to settle here between about 30,000 and 10,000 years ago, and they would become some of the first people to cultivate their own crops and livestock. These new agricultural populations expanded into southern Europe (and, to a lesser extent, northern India and Pakistan), spreading both M35 and knowledge of agricultural practices. Soon after the last Ice Age, about 10,000 years ago, they also expanded further west into Europe where their impact was greatest in the south.

### Present-day distribution of your M35-bearing cousins



### The main GeoCousins

- A M91 } Ancient Africans
- B M60 } Ancient Africans
- C M130 Eden in the East
- D M174 Ancient Asians
- E M40 Old Africa
- E<sub>3a</sub> M2 Bantu Farmers
- E<sub>3b</sub> M35 Abyssinia
- G M201 Caucasus Mountains
- H M69 Ancient India
- I M170 Gravettian Culture
- J 12f2 Arabia
- J<sub>2</sub> M172 Fertile Crescent Farmers
- L M20 Indus
- N M46 Uralic Languages
- O M175 } Rice Agriculture
- O<sub>3</sub> M122 } Rice Agriculture
- Q P36 Native Americans
- R<sub>1a</sub> M17 Kurgan Culture
- R<sub>1b</sub> M269 Aurignacian Culture

