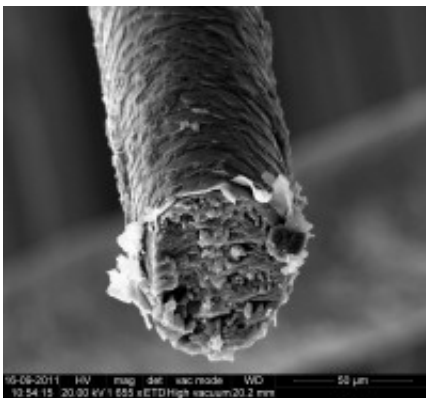


Aboriginal Australians were the first explorers: Genome study rewrites the history books

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An electron microscope photograph of the hair sample

An international team of researchers has for the first time sequenced the genome of a man who was an Aboriginal Australian. They have shown that modern day Aboriginal Australians are the direct descendents of the first people who arrived on the continent some 50,000 years ago and that those ancestors left Africa earlier than their European and Asian counterparts. The work is published this evening (22 September 2011) in the journal *Science*.

Although there is good [archaeological evidence](#) that shows humans in Australia around 50,000 years ago, this genome study re-writes the story of their journey there. The study provides good evidence that Aboriginal

Australians are descendents of the earliest modern explorers, leaving Africa around 24,000 years before their Asian and European counterparts. This is contrary to the previous and most widely accepted theory that all modern humans derive from a single out-of-Africa migration wave into Europe, Asia, and Australia.

Professor Eske Willerslev from the University of Copenhagen, who led the study, said "While the ancestors of Europeans and Asians were sitting somewhere in Africa or the Middle East, yet to explore their world further, the ancestors of Aboriginal Australians spread rapidly; the first modern humans traversing unknown territory in Asia and finally crossing the sea into Australia. It was a truly amazing journey that must have demanded exceptional survival skills and bravery."

Dr Francois Balloux, MRC Centre for Outbreak, Analysis and Modelling, Imperial College London, led the UK team, he said "Thanks to tremendous progress in [sequencing technologies](#) it is much easier to compare genomes of individual people, including those from geographically distinct populations. And by doing this you can learn a lot about when and via what route they came to be where they are today. In this way, the science of genomics makes a unique contribution to our understanding of when and how humans colonised the world."

The study derived from a lock of hair donated to a British anthropologist by an Aboriginal man from the Goldfields region of Western Australia in the early 20th century. One hundred years later, researchers have isolated [DNA](#) from this same hair, using it to explore the genetics of the first Australians and to provide insights into how humans first dispersed across the globe.

By sequencing the genome, which was shown to have no genetic input from modern European Australians, the researchers demonstrated that

Aboriginal [Australians](#) descend directly from an early human expansion into Asia that took place some 70,000 years ago, at least 24,000 years before the population movements that gave rise to present-day Europeans and Asians.

This research is presented with the full endorsement of the Goldfields Land and Sea Council, the organization that represents the Aboriginal traditional owners for the region.

Professor Douglas Kell, Chief Executive, BBSRC said "In a new era of rapid [genome](#) sequencing, one of the most powerful approaches to understanding human biology will be to make comparisons between the genomes of multiple individuals – so-called population genomics. One of the options is to do this according to geography and so learn about, for example, early human migration or the localised evolution of health and disease."

Provided by Biotechnology and Biological Sciences Research Council

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