Australia discovered by the 'Southern Route'

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Genetic research indicates that Australian Aborigines initially arrived via south Asia. Researchers writing in the open access journal *BMC Evolutionary Biology* have found telltale mutations in modern-day Indian populations that are exclusively shared by Aborigines.

Dr Raghavendra Rao worked with a team of researchers from the Anthropological Survey of India to sequence 966 complete mitochondrial DNA genomes from Indian 'relic populations'. He said, "Mitochondrial DNA is inherited only from the mother and so allows us to accurately trace ancestry. We found certain mutations in the DNA sequences of the Indian tribes we sampled that are specific to Australian Aborigines. This shared ancestry suggests that the Aborigine population migrated to Australia via the so-called 'Southern Route'".

The 'Southern Route' dispersal of modern humans suggests movement of a group of hunter-gatherers from the Horn of Africa, across the mouth of the Red Sea into Arabia and southern Asia at least 50 thousand years ago. Subsequently, the modern human populations expanded rapidly along the coastlines of southern Asia, southeastern Asia and Indonesia to arrive in Australia at least 45 thousand years ago. The genetic evidence of this dispersal from the work of Rao and his colleagues is supported by archeological evidence of human occupation in the Lake Mungo area of Australia dated to approximately the same time period.

Discussing the implications of the research, Rao said, "Human evolution is usually understood in terms of millions of years. This direct DNA evidence indicates that the emergence of 'anatomically modern' humans

in Africa and the spread of these humans to other parts of the world happened only fifty thousand or so years ago. In this respect, populations in the Indian subcontinent harbor DNA footprints of the earliest expansion out of Africa. Understanding human evolution helps us to understand the biological and cultural expressions of these people, with far reaching implications for human welfare."

More information: Reconstructing Indian-Australian phylogenetic link. Satish Kumar, Rajasekhara REDDY Ravuri, Padmaja Koneru, B P Urade, B N Sarkar, A Chandrasekar and V R Rao, BMC Evolutionary Biology (in press), www.biomedcentral.com/bmcevolbiol/

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