

Genetic ancestry highly correlated with ethnic and linguistic groups in Asia

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Several genome-wide studies of human genetic diversity have been conducted on European populations. Now, for the first time, these studies have been extended to 73 Southeast Asian (SEA) and East Asian (EA) populations.

In a paper titled, "Mapping Human [Genetic Diversity](#) in Asia," published online *Science* on 10 Dec. 2009, over 90 scientists from the Human Genome Organisation's (HUGO's) Pan-Asian SNP Consortium report that their study conducted within and between the different populations in the Asia continent showed that genetic ancestry was highly correlated with ethnic and linguistic groups.

The scientists also reported a clear increase in genetic diversity from northern to southern latitudes. Their findings also suggest that there was one major inflow of [human migration](#) into Asia arising from Southeast Asia, rather than multiple inflows from both southern and northern routes as previously proposed. This indicates that Southeast Asia was the major geographic source of East Asian and North Asian populations.

(A figure illustrating the paper shows plausible routes of pre-historical migration of Asian human populations. According to the study, the PanAsia SNP Initiative, the most recent common ancestors of Asians arrived first in India and later, some of them migrated to Thailand, and South to the lands known today as Malaysia, Indonesia, and the Philippines. The first group of settlers must have gone very far south before they settled successfully. These included the Malay Negritos ,

Philippine Negritos , the East Indonesians, and early settlers of the Pacific Islands. Thereafter, one or several groups of people migrated North, mixed with previous settlers there and, finally, formed various populations we now refer to as Austronesian, Austro-Asiatic, Tai-Kadai, Hmong-Mien, and Altaic. The figure is titled, "Putative Pre-Historical Migration Routes of Asian Human Populations.")

The researchers noted that the geographical and linguistic basis of genetic subgroups in Asia clarifies the need for genetic stratification when conducting genetic and pharmacogenomic studies in this continent, and that human genetic mapping of Asia has important implications for the study of genetics and disease and for research to understand migratory patterns in human history.

HUGO President Edison Liu, M.D., who is Executive Director of the Genome Institute of Singapore (GIS), said, "This study was a milestone not only in the science that emerged, but the consortium that was formed. Ten Asian countries came together in the spirit of solidarity to understand how we were related as a people, and we finished with a truly Asian scientific community. We overcame shortage of funds and diverse operational constraints through partnerships, good will, and cultural sensitivity.

"Our next goal is to expand this collaboration to all of Asia including Central [Asia](#) and the Polynesian Islands," said Dr. Liu, one of the corresponding authors of the paper. "We also aim to be more detailed in our genomic analysis and plan to include structural variations, as well as over a million single nucleotide polymorphisms in the next analysis."

While HUGO initiated and coordinated the research, Dr. Liu pointed out, "Affymetrix, led by Dr. Giulia C. Kennedy and based in the US, is our primary technology partner in this endeavour. We greatly appreciate their support."

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