Delving Deeper into the Out of Taiwan Hypothesis

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Background

Human settlement of the Pacific began ~60KYA with the colonisation of Sahul (Near Oceania) 1
Austronesian-speaking peoples settled remote Oceania more recently (3.5KYA) 2
Linguistic and Archaeological evidence suggest AN speakers originated “Out of Taiwan” approximately ~ 5-6 KYA 3,4
Genetic picture is less clear with contradicting evidence 5,6

Question

Does mtDNA from the coding region (M7C1C haplogroup) support the “Out of Taiwan” Hypothesis?

Methods

Extracted DNA and sequenced samples (n = 17) from Island Southeast Asia (ISEA), Taiwan and Mainland Southeast Asia (MSEA)
Built Phylogenetic trees using maximum likelihood and network trees with the ISEAn, MSEAn, Taiwanese and published data from Japan and Pacific
Calculated the age estimates of the different haplogroups, with particular attention to M7C1C

Results

The rho (from network trees) and MLE estimates put the age of the M7C1C in ISEA at 6,000 ± 2,800 Years
Supports the “Out of Taiwan” hypothesis over other proposals e.g. Wallacean origins
Has evidence of two ISEAn samples belonging to the M3 haplogroup, very common in India - evidence for the southern route of migration

Future Directions

Recalculate the age estimates by including control region and with the new calibration rate for complete mtDNA sequences
Include more samples from Taiwan

References