Unique Genetic Structure of Y-chromosomal Lineage of the Moken from the Andaman Sea of Thailand

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ABSTRACT

To investigate the genetic structure of the Y-chromosome of the Moken people living in the Andaman Sea area of Thailand, and to compare the genetic relationship between them and other groups on the mainland, as well as the islands Southeast Asia. This study analyzed 17 Y-chromosomal short tandem repeat (Y-STR) loci in 11 unrelated Moken males from Ranong Province of Thailand. The genomic DNA was extracted from buccal cells, and amplified using an AmpFISTR Yfiler PCR Amplification Kit. We compared Y-STR genotypes with other populations from the Y Chromosome Haplotype Reference Database (YHRD) and constructed the multidimensional scaling (MDS) plot and the neighbor-joining tree (NJ), based on genetic distance Rst. Nine different haplotypes from 11 unrelated individuals were identified. The haplotype diversity was 0.9455 ± 0.066, which was closer to other Southeast Asian populations. The genetic relationship results also showed the genetic differentiation of the Moken, without any significant differences among them, as well as some Austronesian (AN) groups from Malaysia and Sino-Tibetan (ST) groups from Taiwan. This study suggests that there was a unique genetic structure on the Y-chromosome of the Moken from the Andaman Sea, showing genetic relations with some AN and ST groups.

Keywords: Y chromosomal-STR, Genetic structure, Moken, Andaman Sea