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Genetic Ancestry of Delhi Population Inferred from Autosomal Short Tandem Repeats: Genetic Diversity Analysis

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ABSTRACT Population substructure analysis and ancestry tracing are the critical issues for association studies of health, behaviors and forensic genetics. STR (short tandem repeat) markers are being extensively used to analyze genetic diversity among the populations. In the present study, allele frequencies and statistical parameters were estimated with 15 STR loci from 208 unrelated individuals from Delhi (India). A total of 146 alleles was found with corresponding allelic frequencies ranging from 0.001 to 0.3869. The MP (matching probability), PD (power of discrimination), PIC (polymorphism information content), PE (power of exclusion) and TPI (typical paternity index) ranged from 0.035 to 0.146, 0.854 to 0.965, 0.65 to 0.850, 0.416 to 0.774, and 1.76 to 4.52, respectively. Deviations were observed from the Hardy-Weinberg Equilibrium for D16S539, D18S51, D21S11 and TPOX Markers. The genetic proximity of the studied population was observed with central Indian population. The population's genetic structure analysis of this population can assist to contrive future genetic studies.