GENETIC POLYMORPHISMS OF 21 STR LOCI IN THE CHAOSHAN HAN POPULATION

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The allele frequencies and forensic statistical parameters of 21 short tandem repeat (STR) loci (D8S1179, D21S11, CSF1PO, D3S1358, D7S820, TH01, D13S317, D2S1338, D18S51, D16S539, TPOX, vWA, D19S433, D5S818, FGA, PentaD, PentaE, D12S391, D6S1043, D1S1656 and SE33) were investigated in 1500 unrelated Chinese Han population from Chaoshan area, the eastern part of Guangdong Province, is a littoral located at the southeast of the Mainland China. The CERVUS 3.0 software was used to perform Hardy-Weinberg equilibrium test, calculate allele frequencies, and analyze parameters including observed heterozygosity (Ho), expected heterozygosity (He), probability of matching (PM), combined matching probability (CMP), power of discrimination (PD), total discrimination power (TDP), power of exclusion for trios (PE_T) or duos (PE_D), cumulative power of exclusion for trios (CPE_T) or duos (CPE_D), and polymorphic information content (PIC). No deviations from Hardy-Weinberg equilibrium were observed except for D2S1338 (p=0.0469) and D12S391 (p=0.0470), which however reached Hardy-Weinberg equilibrium after applying Bonferroni's correction. A total of 279 alleles were detected with their allele frequencies ranged from 0.0004 to 0.5759, the Ho from 0.5878 to 0.8907, the He from 0.5756 to 0.9131, the PIC from 0.5119 to 0.9060. PDfrom 0.7562 with the to 0.9858 the value of 1.17×10^{-26} for CMP, the PE_T from 0.3186 to 0.8234 with the value of 0.9999999966 for CPE_T , the PE_D from 0.1743 to 0.6995 with the value of 0.99999852 for CPE_D. All the loci showed highly polymorphic in Chaoshan Han population except for TPOX and TH01. The allele frequencies reported in this study would serve as a reference database for individual identification and paternity testing for Chaoshan Han population.