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Genetic analysis of 30 InDel markers for forensic use in five different Chinese populations

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ABSTRACT. Allele frequencies of 30 insertion/deletion polymorphism (InDel) markers previously selected and validated for forensic purposes were assessed in 419 unrelated individuals originating from five different populations of P.R. China, including Chinese Han, Chinese Hui, Uighur, Mongolians, and Tibetans. Hardy-Weinberg equilibrium tests and linkage disequilibrium analysis were performed; the allele frequency distributions of the 30 InDel markers met the conditions for genetic equilibrium in all five populations and the InDel markers on the same chromosome did not generate any linkage blocking. Analysis of molecular variance indicated that genetic variation among the five populations represents only 4% of the total genetic diversity. We determined the cumulative power of discrimination for each population: 0.99999999999841 in Chinese Han, 0.99999999999690 in Chinese Hui, 0.99999999999709 in Uighur, 0.99999999999772 in Mongolians, and 0.99999999999854 in Tibetans.

Key words: Insertion/deletion polymorphism (InDel); China; Forensic genetics; Allele frequency; Population genetics

