

SHORT COMMUNICATION

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STR loci Penta D and Penta E: Austrian Caucasian population data

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Abstract Allele frequencies for the short tandem repeat (STR) loci Penta D and Penta E, included in the PowerPlex 16 kit were obtained from a sample of 269 unrelated Austrian Caucasian individuals. Both loci met Hardy-Weinberg expectations.

Keywords DNA · Short tandem repeats · Population data · Austria · Pentanucleotide repeats

Introduction

A population study was carried out on unrelated Austrian Caucasian individuals to determine allele and genotype frequencies for forensic purposes.

Material and methods

Blood samples were taken from 269 unrelated Austrian Caucasians and DNA was extracted using the Qiagen blood kit. Amplification was carried out using 1 ng of template DNA applying the PowerPlex 16 systems kit (Promega, Madison Wis.) in a Perkin Elmer 9600 thermal cycler, according to the manufacturer's recommendations and products were loaded on the CE310 Genetic Analyser (ABI), using ILS-600 (Promega) as internal lane standard. GeneScan analysis was performed on the raw data and alleles were labelled according to the international nomenclature [1] using the Genotyper Software package (Perkin Elmer).

Allele frequencies were calculated from the numbers of each genotype obtained in the sample set. Statistical evaluations were facilitated using a computer program kindly provided by B. Budowle (FBI Academy, Quantico, Va.) and DNAVIEW software designed by Charles Brenner (Berkeley, Calif.) [2].

Table 1 Observed allele frequencies and summary of statistical analysis for the STR loci Penta D and Penta E in 269 unrelated Austrians (*HO* observed homozygosity, *HE* expected homozygosity, *E* exact test probability values, *PD* power of discrimination, *PE* probability of exclusion)

Allele	Penta D	Penta E	Statistical parameters	Penta D	Penta E
5	–	0.099	HO	0.175	0.074
7	0.002	0.156	HE	0.166	0.099
8	0.022	0.020	E	0.539	0.350
9	0.225	0.013	PD ^a	0.948	0.977
10	0.098	0.091	PD ^b	0.950	0.981
11	0.137	0.104	PE	0.665	0.797
12	0.188	0.164			
13	0.214	0.102			
13.4	0.004	–			
14	0.082	0.043			
15	0.024	0.043			
16	0.004	0.054			
17	–	0.037			
17.4	–	0.002			
18	–	0.033			
19	–	0.026			
20	–	0.013			

^aPD calculated using observed data

^bPD calculated using expected data

Results and discussion

Allele frequencies and summary of statistical analysis of the STR loci Penta D and Penta E are shown in Table 1. The two loci showed no significant deviation from Hardy-Weinberg expectations (Table 1). The Austrian population allele frequencies for locus Penta E were similar to those found in an Italian population (data not shown) [3].

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