

FOR THE RECORD

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Population Data on 9 STR loci in Crete (Greece)

POPULATION: Crete, Greece.

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Crete is one of the 13 regions of Greece and at the same time the southernmost district of the European Community, covering an area of 8.336 km². The island is divided into four prefectures: Chania (134 000), Rethymno (70 000), Heraklion (265 000), Lasithi (71 000), with a total of population 540 000. The capital of the island is the city of Heraklion. Being an island, it is considered to be fairly isolated and, once geographically well separated, gene frequency differences were expected. There is a lack of population genetic data from most of these STRs despite the fact that the commercially available amplification kits are being used increasingly in forensic casework. Therefore we aimed to evaluate the data for the polymorphic loci for effective use in Crete and check for the suitability of the systems for forensic applications. 310 samples from unrelated individuals were tested for the systems as for their gene and phenotype frequencies. The sampling was done considering the population distribution in the four main residential areas of the island. Following the DNA extraction and quantitation, the PCR amplification of the nine STR loci (CSFPO1, D7S820, D13S317, D16S539, F13A01, FES/FPS, THO1, TPOX, and vWA) was performed using the commercially available triplex amplification kits provided by Promega, and the application was done according to the manufacturer's instructions. Allele frequencies were estimated by gene counting. The expected genotype frequencies were calculated on the basis of estimated allele frequencies under the assumption of Hardy-Weinberg equilibrium. Accordance with Hardy-Weinberg

equilibrium was checked using the software package Popgen32 (1). Observed and expected heterozygosity, power of exclusion, power of discrimination, and probability of match and paternity index were also calculated. The observed genotype distributions of the nine STRs can be seen in Table 1. The results showed no deviations from Hardy-Weinberg expectations. The obtained results were compared to the limited present data for Greek population (loci THO1 and vWA) (2). No significant differences were observed. In no cases the observed heterozygosity is less than expected. The discriminatory power and exclusion probability values for all the analyzed markers are significantly high and thus reveal high forensic significance. This allele frequency data will be useful for human identity testing in the Cretan population. The complete data of the statistical parameters of medico/legal interest are available at: <http://istanbul.edu.tr/enstituler/forensic/popgen-05.htm>.

References

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TABLE 1—*Observed allele frequencies in the population of Crete (Greece).*

Allele/Locus	CSF1PO	D7S820	D13S317	D16S539	F13A01	FES/FPS	TH01	TPOX
Allele 3.2	...	...	...	...	0.0976	...	...	...
Allele 4	...	...	...	...	0.0842	...	...	...
Allele 5	...	...	...	0.0041	0.2795	...	0.0104	...
Allele 6	...	...	...	...	0.2727	...	0.2561	...
Allele 7	0.0171	0.0433	...	0.0041	0.1970	0.0149	0.1419	0.0096
Allele 8	0.0299	0.1811	0.1310	0.0656	0.0690	0.0075	0.1540	0.5735
Allele 9	0.0726	0.1614	0.0794	0.1434	...	0.0075	0.2543	0.0671
Allele 9.3	...	...	...	...	...	...	0.0761	...
Allele 10	0.2778	0.2717	0.0635	0.1025	...	0.2015	0.0329	0.0256
Allele 11	0.3376	0.1772	0.2143	0.2623	...	0.3955	0.0657	0.1374
Allele 12	0.1795	0.1260	0.3532	0.2623	...	0.3284	0.0087	0.0080
Allele 13	0.0726	0.0394	0.1151	0.1393	...	0.0448	...	...
Allele 14	0.0128	...	0.0437	0.0164	...	...	...	...
Allele 15	...	...	...	...	...	...	...	...
Allele/Locus	vWA							
Allele 13	...							
Allele 14	0.0808							
Allele 15	0.1818							
Allele 16	0.3586							
Allele 17	0.2374							
Allele 18	0.1061							
Allele 19	0.0303							
Allele 20	0.0051							