

FOR THE RECORD

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Allele Frequencies of 13 Loci in the Santa Catarina Population of Southern Brazil

POPULATION: Santa Catarina, Brazil ($n = 160$).

KEYWORDS: forensic science, DNA typing, Santa Catarina, South Brazil, population genetics, short tandem repeat, D3S1358, vWA, FGA, D8S1179, D21S11, D18S51, D5S818, D13S317, D7S820, D16S539, TH01, TPOX, CSF1PO

The origin of Southern Brazilian Santa Catarina population is mainly from Portuguese, essentially from Azores archipelago.

Blood stains from 160 unrelated, autochthonous healthy donors from Santa Catarina were collected and air dried. DNA was extracted from 3 mm² of the stain using the Chelex[®] method (1). In a reaction volume of 50 μ L, about 1 ng of template DNA was used. The co-amplification of D3S1358, vWA, FGA, D8S1179, D21S11, D18S51, D5S818, D13S317, D7S820, D16S539, TH01, TPOX and CSF1PO loci was performed using the AmpF ℓ STR Profiler Plus[™] and COfiler[™] PCR Amplification Kits (PE Applied Biosystems). Reactions for multiplex PCR were prepared according to the manufacturer's recommendations (2,3). Separation of the fragments and fluorescent detection was carried out in an ABI PRISM 377 DNA Sequencer and the typing was made by comparison with allelic ladders. Frequency for each allele for each locus was calculated from the observed number of each genotype, the Hardy-Weinberg equilibrium was tested using the exact test, involving the GENEPOP version 3.1a software package (4). Independence among loci was estimated by means of genotype disequilibrium for each locus pair following Fisher's method using the same package. The potential usefulness of the considered loci was

assessed by calculating some statistical parameters of forensic interest using Excel sheets. The results demonstrate that all loci were in Hardy-Weinberg equilibrium and forensic parameters indicated that the 13 loci in Santa Catarina are highly discriminating.

The complete dataset is available upon request.

References

1. Walsh PS, Metzger DA, Higuchi R. CHELEX[®] 100 as a medium for simple extraction of DNA for PCR-based typing from forensic material. *BioTechniques* 1991;10:506-13.
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TABLE 1—Observed allele frequencies of the 13 loci in the Santa Catarina (n = 160).

Allele	D3S1358	vWA	FGA	D8S1179	D21S11	D18S51	D5S818	D13S317	D7S820	D16S539	TH01	TPOX	CSFIPO
5											0.0031	0.0031	
6											0.2156	0.0094	
7				0.0156			0.0062				0.2000	0.0031	0.0031
8				0.0094			0.0094	0.1156	0.1531	0.0281	0.1281	0.5187	0.0156
9							0.0500	0.0406	0.1656	0.1719	0.1844	0.0906	0.0406
9.3				0.0812			0.0594		0.2594	0.0875	0.2656		
10						0.0938					0.0031	0.0812	0.2562
10.2						0.0062		0.0469					
11				0.0469		0.0156	0.3406	0.3219	0.2437	0.2469		0.2469	0.3031
12				0.1719		0.1437	0.3812	0.2969	0.1500	0.2906		0.0469	0.2969
13				0.2719		0.0906	0.1437	0.1281	0.0219	0.1562			0.0750
13.2	0.0031					0.0062							
14	0.0969	0.0625		0.2625		0.1219	0.0094	0.0500	0.0062	0.0187			0.0094
15	0.2687	0.1218		0.1187		0.1969							
16	0.3125	0.2812		0.0187		0.1500							
17	0.2094	0.2156	0.0062	0.0031		0.1156							
18	0.1031	0.2281	0.0062			0.0719							
19	0.0062	0.0781	0.0687			0.0437							
20		0.0125	0.1187			0.0125							
21			0.1469			0.0094							
22			0.1531										
23			0.1562										
24			0.1500										
24.2					0.0062								
25			0.1031			0.0031							
26			0.0719			0.0031							
26.2			0.0031										
27			0.0125										
28			0.0031										
29													
30													
30.2													
31													
31.2													
32													
32.2													
33.2													
35													
p	0.4626	0.5778	0.5541	0.5163	0.6268	0.3672	0.6796	0.4623	0.2036	0.4712	0.0667	0.2062	0.9802
H	0.7662	0.7973	0.8732	0.8040	0.8453	0.8739	0.7117	0.7721	0.7994	0.7918	0.7925	0.6568	0.7489
PD	0.9076	0.9293	0.9703	0.9345	0.9582	0.9711	0.8688	0.9151	0.9294	0.9257	0.9241	0.8387	0.8939
PE	0.5464	0.6018	0.7421	0.6176	0.6939	0.7459	0.4724	0.5677	0.6008	0.5919	0.5854	0.4253	0.5175

p: Hardy-Weinberg equilibrium exact test; H: heterozygosity; PD: power of discrimination; PE: probability of exclusion.