

FOR THE RECORD

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Allele Frequencies and Statistical Parameters for Eight STR Loci in Córdoba (Argentina) Population

POPULATIONS: Urban and countryside population of Córdoba (Argentina).

KEYWORDS: forensic science, polymerase chain reaction, short tandem repeat, D16S539, TH01, TPOX, CSF1PO, FABP, D6S366, FESFPS, F13A01, population genetics, Córdoba (Argentina)

EDTA whole blood samples were collected from above 300 unrelated individuals of urban and countryside population of Córdoba (Argentina) to study loci TH01, TPOX, CSF1PO, FESFPS, F13A01. The sample set for loci D16S530, FABP, and D6S366 were 117, 192, and 171 individuals respectively. DNA was obtained by CTAB treatment, chloroform extraction, and ethanol precipitation (1). Loci CSF1PO, TH01, TPOX, FESFPS and F13A01, were amplified using either homemade PCR or GenePrint STR Multiplex Systems CTT and FFV (Promega Corporation, Madison WI). The homemade PCRs were performed using standard protocols (2–4). Either CTT and FFV GenePrint STR Multiplex Systems, and GenePrint Silver STR III for locus D16S539, were used according to the manufacturer's instructions (5).

The amplified products were separated by a SA32 vertical electrophoresis (Gibco-BRL, Gaithersburg, MD) in formamide acrylamide gels (1). The alleles were detected by silver staining, briefly: 2 min of fix/stop solution (10% ethanol, 0.5% acetic acid), 5 min of staining solution (0.2% silver nitrate, 10% ethanol, 0.5% acetic acid), 10 sec of deionized water, and developing solution (0.074% formaldehyde, 3% sodium hydroxide) until alleles and ladders are visible.

The data were analyzed using Cervus 2.0 (6), TFPGA (7), and GDA (8) programs. No significant deviation from the HWE was found, and linkage disequilibrium analysis show that there is not significant departure from independence between pairs of loci in the population of Córdoba (Argentina), (results not shown). The combined Power of Discrimination (PD) and Probability of

Exclusion (PE) were 0.99999998 and 0.997019 respectively (Table 1).

The complete data are available to any interested researcher by accessing at http://www.agenciacordobaciencia.cba.gov.ar/ceprocor/strs_data.htm.

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TABLE 1—STR allele frequencies data and statistical parameters for Córdoba (Argentina) population.

Allele	D16S539 N: 117	TH01 N: 327	TPOX N: 306	CSFIPO N: 328	FABP N: 192	D6S366 N: 171	FESFPS N: 320	F13A01 N: 321
3.2								0.1869
4								0.0607
5								0.2383
6		0.2676	0.0033					0.2025
7		0.3119		0.0046			0.0016	0.2757
8	0.0214	0.0826	0.4804	0.0030	0.0026	0.0029	0.0031	0.0062
9	0.1838	0.1147	0.1078	0.0198	0.0078	0.0029	0.0031	0.0031
9.3		0.2095						
10	0.1111	0.0138	0.0572	0.2683	0.5260	0.0058	0.2281	
11	0.2650		0.2810	0.3125	0.1120	0.0526	0.4469	0.0016
12	0.2308		0.0686	0.3140	0.0234	0.1345	0.2516	0.0016
13	0.1624		0.0016	0.0640	0.2786	0.3304	0.0594	0.0016
14	0.0256			0.0137	0.0495	0.1491	0.0063	0.0062
15						0.0994		0.0109
16						0.1871		0.0016
17						0.0234		0.0016
18						0.0117		0.0016
Hob	76.92	78.59	72.22	71.95	65.10	80.70	65.62	75.08
Hex	80.29	76.71	67.06	72.70	63.00	80.21	68.14	78.73
PD	0.9314	0.9059	0.8315	0.8750	0.8092	0.9294	0.8454	0.9227
PE	0.6089	0.5481	0.4296	0.4792	0.3819	0.6200	0.4239	0.5804
PIC	0.774	0.730	0.622	0.677	0.576	0.777	0.626	0.754
P*	0.9107	0.7166	0.8232	0.9100	0.8278	0.2437	0.9969	1.0000
P**	0.8267	0.6121	0.5550	0.7116	0.6429	0.3439	0.8778	0.6447

Hob: observed heterozygosity, Hex: expected heterozygosity, PD: power of discrimination, PE: probability of exclusion, PIC: polymorphic information content, P*: Hardy-Weinberg equilibrium, Chi square test, P**: Hardy-Weinberg equilibrium, exact test based on 10.000 permutations.