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FOR THE RECORD

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Polymarker, HLA-DQAα, and D1S80 Allele Frequency Data in Antioquia (Colombia) Population

POPULATION: Antioquia (Colombia)

KEYWORDS: forensic science, DNA typing, population genetics, Polymarker, LDLR, GYPA, HBGG, D7S8, Gc, HLA-DQα, D1S80, Antioquia, Colombia

Blood samples from unrelated Caucasian individuals from Colombia (Antioquia) were collected. DNA was extracted from 200 μL of peripherical blood obtained from each individual by the salting-out procedure (1).

The Polymarker (PM), D1S80 and HLA-DQα loci were amplified and typed using the AmpliFLP® PM, AmpliFLP®D1S80 and AmpliType®HLA-DQAα, respectively, PCR Amplification and Typing Kit (Perkin Elmer Corporation, Foster City, CA) according to the manufacturer's protocol.

Data were analyzed by using exact test (2), the Promega Software (POWERSTAS), the software GENEPOP Version 3.2a (3) and the software GDA Version 1.0 (4). The complete data set is available upon request from Juan Jose Builes G., M.Sc., GENES Ltda., Lab. de Genetica Forense y, Huellas Digitales del DNA, Cra. 48 No. 10-45. Cons. 612, Medellin, Colombia, genforense@epm.net.co.

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TABLE 1—*Observed HLA-DQα allele and genotype frequencies in Antioquia.*

Allele	Number	Frequency	Genotype	Number	Frequency
1.1	81	0.1557	1.1–1.1	9	0.0346
1.2	97	0.1865	1.1–1.2	19	0.0730
1.3	30	0.0576	1.1–1.3	2	0.0076
2	41	0.0788	1.1–2	8	0.0307
3	148	0.2846	1.1–3	20	0.0769
4	123	0.2365	1.1–4	14	0.0538
			1.2–1.2	6	0.0230
			1.2–1.3	3	0.0115
			1.2–2	7	0.0269
			1.2–3	32	0.1230
			1.2–4	24	0.0923
			1.3–1.3	1	0.0038
			1.3–2	2	0.0076
			1.3–3	10	0.0384
			1.3–4	11	0.0423
			2–2	1	0.0038
			2–3	10	0.0384
			2–4	12	0.0461
			3–3	21	0.0807
			3–4	34	0.1307
			4–4	14	0.0538

Observed hoterozygosity = 0.8000; Expected hoterozygosity = 0.7960; HWE − hoterozygosity test ($p = 0.4969$), Exact test ($p = 0.6242$), Power of Discrimination (PD) = 0.925, Power of Exclusion (PE) = 0.5990, Matching Probability (MP) = 0.0075, Polymorphism Information Content (PIC) = 0.7600, Typical Paternity Index (TPI) = 2.500, ($n = 260$).

TABLE 2—*Observed allele frequency distributions for PM loci in Antioquia.*

Allele	LDLR	GYPA	HBGG	D7S8	Gc
A	0.4406	0.5843	0.4063	0.5219	0.2093
B	0.5594	0.4157	0.5219	0.4781	0.2094
C	…	…	0.0718	…	0.5813
Ho	0.4813	0.4813	0.5500	0.4938	0.5700
He	0.4949	0.4873	0.5592	0.5006	0.5763
HWE-H	0.6920	0.6261	0.8365	0.6303	0.5348
Exact test	0.6242	0.7505	1.0000	0.4679	1.0000
PD	0.6270	0.6200	0.7050	0.6270	0.7570
PE	0.1720	0.1720	0.2350	0.1820	0.2690
MP	0.3730	0.3800	0.2950	0.3730	0.2340
PIC	0.3700	0.3700	0.4600	0.3700	0.5100
TPI	0.9600	0.9600	1.1100	0.9900	1.1900

Ho = Observed hoterozygosity; He = expected hoterozygosity, HWE-H = hoterozygosity test, PD = Power of Discrimination, PE = Power of Exclusion, MP = Matching Probability, PIC = Polymorphism Information Content, TPI = Typical Paternity Index, ($n = 160$).

TABLE 3—*Observed D1S80 allele and genotype frequencies in Antioquia.*

Allele	Number	Frequency	Genotype	Number	Frequency
17	3	0.0172	17–23	1	0.0114
18	32	0.1839	17–26	1	0.0114
19	7	0.0402	17–30	1	0.0114
20	3	0.0172	18–18	5	0.0574
21	7	0.0402	18–21	1	0.0114
22	3	0.0172	18–22	1	0.0114
23	10	0.0574	18–24	6	0.0689
24	33	0.1896	18–25	3	0.0344
25	20	0.1149	18–26	5	0.0574
26	11	0.0632	18–30	3	0.0344
27	3	0.0172	18–31	2	0.0229
28	7	0.0402	18–32	1	0.0114
29	6	0.0344	19–19	1	0.0114
30	15	0.0862	19–24	1	0.0114
31	10	0.0574	19–25	1	0.0114
32	1	0.0057	19–26	2	0.0229
33	1	0.0057	19–33	1	0.0114
34	2	0.0114	20–21	1	0.0114
			20–24	1	0.0114
			20–25	1	0.0114
			21–24	3	0.0344
			21–25	1	0.0114
			21–28	1	0.0114
			22–25	2	0.0229
			23–23	2	0.0229
			23–24	2	0.0229
			23–27	1	0.0114
			23–28	1	0.0114
			23–29	1	0.0114
			24–24	4	0.0459
			24–25	1	0.0114
			24–28	2	0.0229
			24–29	1	0.0114
			24–30	4	0.0459
			24–31	4	0.0459
			25–25	2	0.0229
			25–28	1	0.0114
			25–29	2	0.0229
			25–30	2	0.0229
			25–31	2	0.0229
			26–28	1	0.0114
			26–30	1	0.0114
			26–34	1	0.0114
			27–28	1	0.0114
			27–30	1	0.0114
			29–29	1	0.0114
			30–30	1	0.0114
			30–34	1	0.0114
			31–31	1	0.0114

Heterozygotes = 0.805, Homozygotes = 0.195, HWE —hoterozygosity test ($p = 0.4969$), Exact test ($p = 0.6394$) = Power of Discrimination (PD) = 0.969, Power of Exclusion (PE) = 0.608, Matching Probability (MP) = 0.031, Polymorphism Information Content (PIC) = 0.880, Typical Paternity Index (TPI) = 2.560, ($n = 87$).