FOR THE RECORD

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Population Data for PowerPlex 16 in Thirteen Departments and the Capital City of Colombia

POPULATION: Colombia: A total of 8124–8170 unrelated individuals were analyzed for 15 STR commonly used in forensic and paternity testing studies (including the 13 CODIS loci) in order to establish accurate population frequencies and other parameters of forensic and population genetics interest in thirteen departments and the capital city of Colombia.

N: Bogotá, D.C. (capital city): 2582–2601; Valle del Cauca: 1029–1031; Boyacá: 853–857; Santander: 598–600; Tolima: 533–537; Cundinamarca: 506–508; Norte de Santander: 366–370; Cesar: 339; Meta: 329–332; Magdalena: 270–271; Nariño: 223–226; Casanare: 210–211; Atlántico: 188–190; and Guajira: 97. See Fig. 1.

KEYWORDS: forensic science, DNA typing, short tandem repeats, Colombia, population genetics

Colombia is a multiethnic country composed of Caucasian, Afro-Colombian and Amerindian populations (1). Caucasians represents the majority of the population distributed mainly in the Andean region and in the Pacific and Atlantic coasts. The Afro-Colombian populations are mainly located in the Pacific and Atlantic regions of the country, while the existing Amerindian populations (around 80 different tribes) are located in the Amazonian, Orinoquian and some in the South Andean, Pacific and North Atlantic regions (1,2). For centuries, the Andean mountains served as a strong barrier for free population flow allowing the development of different population settlements with different cultural background and admixture patterns within the country (3).

Several studies have evaluated the population frequencies of several short tandem repeats (STRs) used in forensic and paternity testing studies in different regions of Colombia (1,2,4–8).

The Powerplex 16 BIO system (FGA, TPOX, D8S1179, CSF1PO, VWA, Amelogenin, Penta E, D18S51, D21S11, TH01, D3S1358; Penta D, D16S539, D7S820, D13S317 and D5S818) was amplified following manufacturer's recommendations (GenePrint systems, Promega Corporation, Madison, WI).

Automated typing using the Hitachi FMBIO II system and StarCall software (Hitachi Corporation, San Francisco, CA). Allele designations were made according to recommendations of the DNA commission of the ISFG with the aid of allelic ladders provided by the manufacturer (9). Quality control and proficiency testing for these systems have been carried out for the GEP-ISFG working group and CTS (Collaborative Testing Services).

Power of discrimination (PD), polymorphic information content (PIC), a priori chance of exclusion (PE), and observed heterocigosity (He) were calculated with the aid of PowerStats (Promega Corporation, Madison, WI) with some modifications (10), Minimum allele frequencies (MAF) for PCR based loci were determined (11). Hardy-Weinberg equilibrium based on Chi square test and test of independence were calculated with the aid of GDA (12).

The genotype frequency distribution does not deviate from HWE expectations in any of the population groups studied. There is little evidence for departures from independence in any of the population groups analyzed.

The complete dataset is available to any researcher via electronic mail from the corresponding authors at jjyunisl@unal.edu.co and emilioyunis@hotmail.com

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FIG. 1—*Geographical location of population groups tested. 1) Bogotá, D.C.; 2) Valle del Cauca; 3) Boyaca; 4) Santander; 5) Tolima; 6) Cundinamarca; 7) Norte de Santander; 8) Cesar; 9) Meta; 10) Magdalena; 11) Nariño; 12) Casanare; 13) Atlántico; and 14) Guajira.*

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TABLE 1—*Powerplex 16 data for Bogotá.*

	TH01	TPOX	CSF1PO	D3S1358	VWA	FGA	D5S818	D13S317	D7S820	D8S1179	D21S11	D18S51	D16S539	Penta D	Penta E
2.2														0.0083	
3.2														0.0006	
4	0.0006														
5	0.0004	0.0002											0.0006	0.0025	0.0383
6	0.3731	0.0017							0.0012					0.0004	0.0012
7	0.2351	0.0021	0.0044				0.0367		0.0148					0.0044	0.0894
8	0.0724	0.4818	0.0067				0.0087	0.0865	0.1038	0.0058			0.0106	0.0185	0.0216
8.2									0.0006						
9	0.1302	0.0633	0.0166				0.0783	0.1715	0.0782	0.0100		0.0008	0.1398	0.1767	0.0094
9.3	0.1804														
10	0.0073	0.0507	0.2328				0.0608	0.0669	0.2678	0.0623		0.0069	0.1592	0.2222	0.0574
10.2												0.0002			
10.3	0.0004														
11	0.0002	0.2909	0.2861	0.0004	0.0006		0.3955	0.2057	0.3033	0.0831		0.0096	0.2617	0.1967	0.0867
12		0.1032	0.3785	0.0015	0.0004		0.2847	0.2749	0.1892	0.1277		0.1164	0.2671	0.1464	0.1689
12.2							0.0002					0.0002		0.0002	
13		0.0056	0.0643	0.0042	0.0015		0.1256	0.1242	0.0350	0.3323		0.1193	0.1388	0.1499	0.0876
13.2				0.0002								0.0004			
14		0.0004	0.0092	0.0923	0.0736		0.0094	0.0686	0.0060	0.2306		0.1735	0.0210	0.0551	0.0911
15			0.0013	0.3858	0.1012	0.0004		0.0015	0.0002	0.1162		0.1376	0.0010	0.0123	0.1044
16				0.2697	0.3442			0.0002		0.0287		0.1275	0.0002	0.0042	0.0611
17				0.1417	0.2647	0.0012				0.0031		0.1520		0.0006	0.0385
18				0.0982	0.1598	0.0094				0.0004		0.0604		0.0010	0.0320
18.2						0.0006									
19				0.0056	0.0490	0.0629						0.0402			0.0287
19.2						0.0002									
20				0.0004	0.0037	0.0933						0.0339			0.0379
20.2						0.0013									
21					0.0014	0.1083						0.0108			0.0243
21.2						0.0010									
22						0.1323						0.0052			0.0114
22.2						0.0006									
23						0.1296						0.0038			0.0060
23.2						0.0006									
24						0.1837						0.0010			0.0031
24.2											0.0004				
25						0.1588					0.0010	0.0002			0.0008
26						0.0883					0.0019				0.0002
26.2						0.0002					0.0010				
27						0.0219					0.0210	0.0002			0.0002
28						0.0031					0.0914				
29						0.0013					0.2044				
29.2											0.0010				
30											0.3004				
30.2						0.0002					0.0239				
31											0.0581				
31.2						0.0006					0.0885				
32											0.0216				
32.2											0.1245				
33											0.0031				
33.2											0.0493				

TABLE 1—*Continued.*

	TH01	TPOX	CSF1PO	D3S1358	VWA	FGA	D5S818	D13S317	D7S820	D8S1179	D21S11	D18S51	D16S539	Penta D	Penta E
34						0.0002					0.0017				
34.2											0.0048				
35											0.0012				
35.2											0.0002				
36											0.0002				
37											0.0002				
39											0.0004				
44.2						0.0002									
MAF	0.0011	0.0011	0.0011	0.0011	0.0012	0.0013	0.0011	0.0012	0.0012	0.0012	0.0012	0.0013	0.0012	0.0012	0.0013
PD	0.8999	0.8394	0.8713	0.8920	0.9106	0.9705	0.8912	0.9444	0.9193	0.9307	0.9504	0.9718	0.9263	0.9497	0.9862
PIC	0.7124	0.6156	0.6657	0.7006	0.7337	0.8607	0.6967	0.7972	0.7497	0.7683	0.8100	0.8645	0.7647	0.8112	0.9084
PE	0.4923	0.3647	0.4379	0.4821	0.5485	0.7308	0.4703	0.6193	0.5751	0.5764	0.6467	0.7430	0.6026	0.6664	0.8164
He	0.7397	0.6569	0.7062	0.7336	0.7722	0.8681	0.7264	0.8108	0.7870	0.7877	0.8253	0.8742	0.8019	0.8355	0.9102
HWE*	0.2815	0.0790	0.8375	0.378	0.4745	0.3325	0.1255	0.4510	0.1670	0.1645	0.179	0.6310	0.6960	0.1250	0.2385
N =	2597	2582	2597	2601	2590	2600	2599	2601	2601	2600	2598	2599	2600	2595	2596

MAF: minimum allele frequency; PD: power of discrimination; PE: power of exclusión; He: observed heterocigocity; N: number of individuals tested; HWE: Hardy-Weinberg equilibrium (X^2 test, 2000 shufflings).

TABLE 2—*Powerplex 16 data for Valle del Cauca.*

	TH01	TPOX	CSF1PO	D3S1358	VWA	FGA	D5S818	D13S317	D7S820	D8S1179	D21S11	D18S51	D16S539	Penta D	Penta E
2.2														0.0247	
3.2														0.0010	
4	0.0005													0.0005	
5	0.0015													0.0121	0.0592
6	0.3632	0.0121							0.0019					0.0019	
6.1	0.0005														
7	0.2527	0.0078	0.0160	0.0005			0.0281	0.0005	0.0126					0.0141	0.0727
8	0.1106	0.4743	0.0160				0.0112	0.0795	0.1305	0.0063			0.0107	0.0325	0.0572
8.2									0.0005						
9	0.1140	0.0849	0.0160				0.0650	0.1372	0.0921	0.0063			0.1809	0.1668	0.0145
9.3	0.1508														
10	0.0063	0.0572	0.2396				0.0553	0.0553	0.2876	0.0441		0.0058	0.1431	0.2081	0.0441
10.2												0.0010			
11		0.2701	0.2677		0.0010		0.3962	0.2270	0.2886	0.0810		0.0087	0.2662	0.1979	0.0834
12		0.0907	0.3717	0.0015			0.2832	0.2866	0.1644	0.1203		0.0772	0.2512	0.1305	0.1508
12.2												0.0005			
13		0.0029	0.0671	0.0049	0.0053		0.1469	0.1406	0.0209	0.3210		0.1005	0.1188	0.1368	0.0980
13.2												0.0010			
14			0.0049	0.0926	0.0509		0.0116	0.0703	0.0010	0.2638		0.1636	0.0286	0.0533	0.0805
14.2												0.0010			
15			0.0010	0.3885	0.1305		0.0024	0.0024		0.1251		0.1587	0.0005	0.0107	0.1052
15.2												0.0015			
16				0.2692	0.3589			0.0005		0.0276		0.1427		0.0058	0.0606
16.2												0.0005			
17				0.1285	0.2415	0.0063				0.0044		0.1529		0.0019	0.0485
18				0.1057	0.1499	0.0092						0.0767		0.0010	0.0320
18.2						0.0019									
19				0.0082	0.0529	0.0611						0.0563			0.0335
19.2						0.0010									
20				0.0005	0.0087	0.0752						0.0296			0.0306
21					0.0005	0.1125						0.0102			0.0204
21.2												0.0005			
22						0.1465						0.0073			0.0068
22.2						0.0019									
23						0.1397						0.0024			
24						0.1707						0.0015			
24.2											0.0005				
25						0.1508									0.0005
26						0.0815					0.0019				
26.2											0.0034				
27						0.0238					0.0291				
28						0.0107					0.1237	0.0005			
29						0.0029					0.2003				
30						0.0005					0.2803				
30.2											0.0170				
30.3											0.0005				
31						0.0005					0.0538				
31.2						0.0015					0.0674				

TABLE 2—*Continued.*

	TH01	TPOX	CSF1PO	D3S1358	VWA	FGA	D5S818	D13S317	D7S820	D8S1179	D21S11	D18S51	D16S539	Penta D	Penta E
32						0.0005					0.0199				
32.2											0.1363				
33						0.0005					0.0024				
33.2											0.0543				
34											0.0015				
34.2						0.0005					0.0019				
35											0.0039				
36											0.0015				
36.2											0.0005				
45.2						0.0005									
MAF	0.0029	0.0028	0.0028	0.0028	0.0029	0.0032	0.0028	0.0030	0.0030	0.0030	0.0031	0.0032	0.0030	0.0031	0.0033
PD	0.9022	0.8539	0.8776	0.8954	0.9125	0.971	0.8888	0.9410	0.9176	0.9269	0.9524	0.9711	0.9293	0.9594	0.9873
PIC	0.7191	0.6388	0.6807	0.7013	0.7348	0.8649	0.6931	0.7888	0.7478	0.7588	0.8168	0.8655	0.7676	0.8310	0.9137
PE	0.5261	0.4095	0.4632	0.4641	0.5604	0.7520	0.4332	0.6121	0.5922	0.5709	0.6980	0.7577	0.5762	0.6695	0.8095
He	0.7566	0.6835	0.7278	0.7406	0.7683	0.8781	0.7332	0.8138	0.7813	0.7882	0.8359	0.8784	0.7982	0.8494	0.9198
HWE*	0.1525	0.5255	0.4305	0.2285	0.7705	0.5625	0.1175	0.8125	0.5560	0.7315	0.1535	0.6790	0.1855	0.7935	0.3205
N	1031	1031	1029	1031	1031	1031	1031	1031	1031	1031	1031	1030	1031	1031	1031

MAF: minimum allele frequency; PD: power of discrimination; PE: power of exclusión; He: observed heterocigocity; N: number of individuals tested; HWE: Hardy-Weinberg equilibrium (X^2 test, 2000 shufflings).

TABLE 3—*Powerplex 16 data for Boyaca.*

	TH01	TPOX	CSF1PO	D3S1358	VWA	FGA	D5S818	D13S317	D7S820	D8S1179	D21S11	D18S51	D16S539	Penta D	Penta E
2.2														0.0029	
3.2														0.0006	
5	0.0006													0.0012	0.0332
6	0.4215	0.0029												0.0012	0.0012
6.1	0.0006														
7	0.2312	0.0006	0.0018				0.0373		0.0134					0.0035	0.0775
8	0.0578	0.4903	0.0029				0.0047	0.0903	0.0828	0.0076			0.0111	0.0216	0.0175
9	0.1185	0.0504	0.0181				0.0769	0.1725	0.0705	0.0111			0.1314	0.1951	0.0087
9.3	0.1611														
10	0.0088	0.0510	0.2482				0.0542	0.0728	0.2768	0.0660		0.0064	0.1787	0.2161	0.0443
10.2												0.0006			
11		0.2630	0.3008				0.4003	0.1923	0.3054	0.0870		0.0117	0.2634	0.1904	0.0793
12		0.1388	0.3499	0.0006			0.2943	0.2791	0.2168	0.1186		0.1020	0.2792	0.1495	0.1731
13		0.0029	0.0718	0.0058	0.0006		0.1224	0.1189	0.0309	0.3516		0.1171	0.1174	0.1536	0.0769
14			0.0047	0.0956	0.0607		0.0093	0.0723	0.0035	0.2354		0.1713	0.0187	0.0432	0.0921
15			0.0018	0.3794	0.0753		0.0006	0.0017		0.0987		0.1603		0.0164	0.1125
16				0.3019	0.3629					0.0234		0.1177		0.0035	0.0455
17				0.1218	0.2859	0.0023				0.0006		0.1573		0.0012	0.0379
18				0.0851	0.1663	0.0140						0.0612			0.0355
18.2						0.0006									
19				0.0087	0.0432	0.0606						0.0373			0.0472
20				0.0012	0.0053	0.0810						0.0361			0.0536
20.2						0.0029									
21						0.1049						0.0117			0.0321
21.2						0.0017									
22						0.1235						0.0047			0.0210
22.2						0.0041									
23						0.1171						0.0017			0.0076
23.2						0.0012									
24						0.1777						0.0017			0.0023
24.2											0.0006				
25						0.1836						0.0006			0.0012
26						0.0956					0.0035	0.0006			
26.2											0.0006				
27						0.0262					0.0135				
28						0.0017					0.0943				
28.2											0.0006				
29						0.0012					0.2084				
29.2											0.0006				
30											0.2998				
30.2											0.0211				
31											0.0533				
31.2											0.0884				
32											0.0269				
32.2											0.1358				
33											0.0012				
33.2											0.0445				
34.2											0.0047				
35											0.0018				
36.2											0.0006				
MAF	0.0034	0.0033	0.0033	0.0034	0.0035	0.0039	0.0034	0.0037	0.0034	0.0035	0.0037	0.0039	0.0036	0.0036	0.0041
PD	0.8991	0.8377	0.8728	0.8873	0.8961	0.9698	0.8877	0.9463	0.9136	0.9247	0.9505	0.9703	0.9225	0.9493	0.9864
PIC	0.6854	0.6173	0.6685	0.6921	0.7089	0.8615	0.6871	0.7997	0.7342	0.7568	0.8053	0.8624	0.7571	0.8076	0.9101
PE	0.4803	0.4049	0.4297	0.5008	0.5244	0.7406	0.4622	0.6421	0.4852	0.5382	0.6338	0.7638	0.5801	0.6213	0.8332
He	0.7325	0.6858	0.7006	0.7445	0.7593	0.8728	0.7223	0.8226	0.7351	0.7661	0.8195	0.8845	0.7906	0.8117	0.9183
HWE*	0.4080	0.2605	0.4320	0.1485	0.9945	0.1490	0.8410	0.8550	0.6770	0.6965	0.3515	0.4695	0.3230	0.8590	0.7615
N	856	853	855	857	856	857	857	857	857	855	853	857	855	855	857

MAF: minimum allele frequency; PD: power of discrimination; PE: power of exclusión; He: observed heterocigocity; N: number of individuals tested; HWE: Hardy-Weinberg equilibrium (X^2 test, 2000 shufflings).

TABLE 4—*Powerplex 16 data for Santander.*

	TH01	TPOX	CSF1PO	D3S1358	VWA	FGA	D5S818	D13S317	D7S820	D8S1179	D21S11	D18S51	D16S539	Penta D	Penta E
2.2														0.0125	
5														0.0025	0.0308
6	0.3733	0.0067	0.0008												0.0017
7	0.2050	0.0042	0.0017				0.0375		0.0125					0.0117	0.0942
8	0.0758	0.4933	0.0100				0.0033	0.0975	0.1112	0.0042			0.0150	0.0167	0.0250
9	0.1258	0.0560	0.0125				0.0558	0.1333	0.0819	0.0075			0.1386	0.1686	0.0092
9.3	0.2142														
10	0.0050	0.0435	0.2584				0.0583	0.0658	0.2885	0.0600		0.0058	0.1486	0.1995	0.0583
11	0.0008	0.3152	0.2818				0.3900	0.2267	0.2701	0.0833		0.0100	0.2755	0.1820	0.0842
12		0.0803	0.3436				0.3133	0.2800	0.1965	0.1242		0.1219	0.2679	0.1694	0.1783
13		0.0008	0.0819	0.0050	0.0042		0.1333	0.1233	0.0343	0.3000		0.1052	0.1336	0.1586	0.0692
14			0.0059	0.0743	0.0742		0.0083	0.0725	0.0050	0.2792		0.1653	0.0200	0.0584	0.1058
15			0.0033	0.3790	0.1008			0.0008		0.1175		0.1319	0.0008	0.0167	0.1100
16				0.2705	0.3350					0.0233		0.1302		0.0025	0.0500
17				0.1661	0.2742	0.0008				0.0008		0.1486		0.0008	0.0408
18				0.1010	0.1475	0.0134						0.0793			0.0292
19				0.0033	0.0492	0.0668						0.0376			0.0367
20					0.0125	0.1018						0.0351			0.0417
20.2						0.0017									
21					0.0025	0.1018						0.0200			0.0242
22						0.1285						0.0025			0.0075
22.2						0.0008									
23						0.1294						0.0033			0.0025
23.2						0.0008									
24						0.1795						0.0033			0.0008
24.2											0.0008				
25						0.1561									
26						0.0902					0.0025				
27						0.0234					0.0225				
28						0.0033					0.1002				
29						0.0017					0.2154				
29.2											0.0008				
30											0.2888				
30.2											0.0242				
31											0.0701				
31.2											0.0843				
32											0.0159				
32.2											0.1177				
33											0.0033				
33.2											0.0467				
34.2											0.0050				
35											0.0008				
37											0.0008				
MAF	0.0049	0.0046	0.0048	0.0049	0.0050	0.0055	0.0048	0.0052	0.0051	0.0050	0.0051	0.0055	0.0051	0.0053	0.0056
PD	0.8977	0.8200	0.8797	0.8903	0.9133	0.9705	0.8739	0.9424	0.9169	0.9281	0.9507	0.9718	0.9217	0.9519	0.9839
PIC	0.7128	0.5894	0.6799	0.6991	0.7397	0.8632	0.6808	0.7945	0.7524	0.7629	0.8115	0.8689	0.7617	0.8200	0.9038
PE	0.5069	0.3559	0.4371	0.5148	0.5655	0.7645	0.4762	0.6303	0.5793	0.5358	0.6171	0.7476	0.6203	0.6944	0.7954
He	0.7483	0.6505	0.7057	0.7529	0.7817	0.8848	0.7300	0.8167	0.7893	0.7650	0.8097	0.8765	0.8114	0.8498	0.9000
HWE*	0.8040	0.9690	0.1145	0.4940	0.8240	0.9725	0.6550	0.7705	0.4140	0.4310	0.3525	0.4475	0.5735	0.5530	0.2390
N	600	598	598	599	600	599	600	600	598	600	599	599	599	599	600

MAF: minimum allele frequency; PD: power of discrimination; PE: power of exclusión; He: observed heterocigocity; N: number of individuals tested; HWE: Hardy-Weinberg equilibrium (X^2 test, 2000 shufflings).

TABLE 5—*Powerplex 16 data for Tolima.*

	TH01	TPOX	CSF1PO	D3S1358	VWA	FGA	D5S818	D13S317	D7S820	D8S1179	D21S11	D18S51	D16S539	Penta D	Penta E
2.2														0.0047	
3.2														0.0028	
5														0.0066	0.0428
6	0.3892	0.0047							0.0009					0.0009	0.0009
7	0.2346	0.0019	0.0094				0.0364	0.0168						0.0057	0.0791
8	0.0633	0.4748	0.0047				0.0037	0.0989	0.1101	0.0093			0.0112	0.0141	0.0270
9	0.1276	0.0709	0.0216				0.0830	0.1576	0.0961	0.0112			0.1437	0.1977	0.0056
9.3	0.1778														
10	0.0074	0.0373	0.2251	0.0009			0.0625	0.0653	0.2593	0.0745		0.0084	0.1735	0.2062	0.0642
11		0.2873	0.2749	0.0009			0.3871	0.2108	0.2901	0.0680		0.0047	0.2603	0.1883	0.0857
12		0.1194	0.3949				0.2817	0.2509	0.1875	0.1192		0.1222	0.2509	0.1544	0.1685
13		0.0028	0.0572	0.0009	0.0009		0.1409	0.1381	0.0336	0.3287		0.1026	0.1362	0.1488	0.1015
14		0.0009	0.0103	0.0764	0.0773		0.0037	0.0756	0.0047	0.2365		0.1763	0.0233	0.0508	0.1043
15			0.0019	0.4050	0.0912		0.0009	0.0028	0.0009	0.1276		0.1399	0.0009	0.0132	0.0931
16				0.2905	0.3324					0.0242		0.1287		0.0038	0.0680
17				0.1387	0.2700	0.0009				0.0009		0.1726		0.0019	0.0345
18				0.0838	0.1695	0.0121						0.0588			0.0307
19				0.0028	0.0512	0.0549						0.0382			0.0214
20					0.0074	0.1052						0.0261			0.0317
20.2						0.0009									
21						0.1220						0.0093			0.0298
21.2						0.0009									
22						0.1359						0.0084			0.0065
22.2						0.0037									
23						0.1341						0.0037			0.0019
24						0.1629									0.0009
24.2											0.0009				
25						0.1406									0.0019
26						0.0978					0.0028				
26.2											0.0009				
27						0.0177					0.0113				
28						0.0084					0.0985				
29						0.0009					0.1839				
30											0.3096				
30.2											0.0272				
31											0.0610				
31.2											0.0910				
32											0.0197				
32.2											0.1417				
33											0.0009				
33.2											0.0403				
34											0.0019				
34.2											0.0038				
35											0.0038				
35.2											0.0009				
48.2						0.0009									
MAF	0.0055	0.0052	0.0053	0.0052	0.0055	0.0062	0.0055	0.0059	0.0057	0.0057	0.0058	0.0060	0.0058	0.0057	0.0065
PD	0.8877	0.8424	0.8682	0.8799	0.9146	0.9709	0.8868	0.9489	0.9237	0.9311	0.9472	0.9690	0.9273	0.9508	0.9843
PIC	0.7019	0.6211	0.6646	0.6752	0.7369	0.8655	0.6998	0.8067	0.7599	0.7677	0.8062	0.8580	0.7693	0.8119	0.9058
PE	0.5202	0.3831	0.4426	0.4115	0.5299	0.7829	0.5194	0.6780	0.5928	0.6004	0.6365	0.7111	0.6313	0.5928	0.8401
He	0.7561	0.6698	0.7092	0.6890	0.7616	0.8939	0.7556	0.8414	0.7966	0.8007	0.8199	0.8582	0.8172	0.7966	0.9218
HWE*	0.5535	0.5005	0.5910	0.2015	0.7080	0.4860	0.0900	0.9310	0.1375	0.6055	0.3085	0.5030	0.8660	0.5410	0.9645
N	537	536	533	537	537	537	536	536	536	537	533	536	536	531	537

MAF: minimum allele frequency; PD: power of discrimination; PE: power of exclusión; He: observed heterocigocity; N: number of individuals tested; HWE: Hardy-Weinberg equilibrium (X^2 test, 2000 shufflings).

TABLE 6—*Powerplex 16 data for Cundinamarca.*

	TH01	TPOX	CSF1PO	D3S1358	VWA	FGA	D5S818	D13S317	D7S820	D8S1179	D21S11	D18S51	D16S539	Penta D	Penta E
2.2														0.0039	
3.2														0.0010	
5														0.0030	0.0384
6	0.3829	0.0030												0.0020	0.0030
7	0.2421		0.0020				0.0295		0.0157					0.0010	0.0787
8	0.0472	0.4714	0.0049					0.0994	0.0738				0.0049	0.0079	0.0207
9	0.1289	0.0493	0.0197				0.0876	0.1782	0.0709				0.1398	0.1782	0.0079
9.3	0.1939														
10	0.0049	0.0365	0.2490				0.0571	0.0571	0.2776	0.0561		0.0069	0.1535	0.2431	0.0541
11		0.3057	0.2825				0.4222	0.2047	0.3337	0.0837		0.0059	0.2746	0.1850	0.0856
12		0.1203	0.3671	0.0010			0.2835	0.2608	0.1801	0.1201		0.1339	0.2697	0.1545	0.1654
13		0.0138	0.0659	0.0020			0.1083	0.1112	0.0404	0.3268		0.1220	0.1319	0.1457	0.0965
14			0.0089	0.0945	0.0702		0.0118	0.0866	0.0079	0.2520		0.1644	0.0256	0.0551	0.0886
15				0.3868	0.0929			0.0020		0.1122		0.1358		0.0128	0.1073
16				0.2530	0.3172					0.0315		0.1250		0.0049	0.0650
17				0.1575	0.2787	0.0020				0.0010		0.1319		0.0020	0.0276
18				0.1014	0.1769	0.0089				0.0010		0.0591			0.0285
19				0.0039	0.0553	0.0522						0.0413			0.0374
20					0.0069	0.1043						0.0482			0.0394
20.2						0.0030									
21					0.0020	0.1132						0.0138			0.0276
21.2						0.0010									
22						0.1407						0.0069			0.0157
23						0.1211						0.0039			0.0089
23.2											0.0010				
24						0.1486						0.0010			0.0010
25						0.1772									0.0020
26						0.0915					0.0030				
27						0.0325					0.0148				0.0010
28						0.0030					0.0935				
29						0.0010					0.1959				
29.2											0.0010				
30											0.3248				
30.2											0.0207				
31											0.0679				
31.2											0.0856				
32											0.0236				
32.2											0.1083				
33.2											0.0522				
34.2											0.0030				
35											0.0010				
35.2											0.0010				
36											0.0020				
38											0.0010				
MAF	0.0057	0.0054	0.0056	0.0056	0.0059	0.0065	0.0056	0.0062	0.0058	0.0059	0.0060	0.0062	0.0060	0.0061	0.0067
PD	0.8893	0.8349	0.8664	0.8971	0.9111	0.9703	0.8813	0.9432	0.9063	0.9276	0.9463	0.9730	0.9230	0.9445	0.9857
PIC	0.6964	0.6126	0.6678	0.7033	0.7399	0.8632	0.6764	0.8025	0.7318	0.7638	0.8002	0.8688	0.7591	0.8031	0.9098
PE	0.4931	0.3785	0.4575	0.4543	0.5530	0.7626	0.4325	0.6840	0.5371	0.5831	0.6234	0.6879	0.6197	0.6572	0.8148
He	0.7402	0.6667	0.7185	0.7165	0.7747	0.8839	0.7028	0.8445	0.7657	0.7913	0.8130	0.8465	0.8110	0.8307	0.9094
HWE*	0.9545	0.4115	0.2795	0.5945	0.4300	0.5515	0.7320	0.0750	0.1500	0.6355	0.0605	0.1615	0.7340	0.5340	0.5330
N	508	507	508	508	506	508	508	508	508	508	508	508	508	508	508

MAF: minimum allele frequency; PD: power of discrimination; PE: power of exclusión; He: observed heterocigocity; N: number of individuals tested; HWE: Hardy-Weinberg equilibrium (X^2 test, 2000 shufflings).

TABLE 7—*Powerplex 16 data for Norte de Santander.*

	TH01	TPOX	CSF1PO	D3S1358	VWA	FGA	D5S818	D13S317	D7S820	D8S1179	D21S11	D18S51	D16S539	Penta D	Penta E
2.2														0.0095	
3.2														0.0014	
5	0.0014													0.0027	0.0351
6	0.4108	0.0027													0.0014
7	0.2000		0.0027				0.0378		0.0095					0.0054	0.0878
8	0.0743	0.5096	0.0027				0.0068	0.1000	0.0986	0.0041		0.0014	0.0149	0.0243	0.0203
9	0.1216	0.0505	0.0230				0.0703	0.1486	0.0797	0.0068			0.1698	0.1865	0.0054
9.3	0.1824														
10	0.0095	0.0355	0.2311				0.0649	0.0676	0.2784	0.0637		0.0095	0.1332	0.2000	0.0473
11		0.3101	0.2892				0.3932	0.1878	0.2932	0.0786		0.0068	0.2772	0.1959	0.0919
12		0.0861	0.3743	0.0014			0.2932	0.3176	0.2014	0.0962		0.0919	0.2609	0.1378	0.1581
13		0.0055	0.0649	0.0027	0.0027		0.1203	0.1351	0.0324	0.3320		0.1176	0.1182	0.1541	0.0730
13.2												0.0014			
14			0.0108	0.0784	0.0637		0.0122	0.0419	0.0068	0.2669		0.1824	0.0258	0.0568	0.1365
15			0.0014	0.3743	0.0894		0.0014	0.0014		0.1274		0.1216		0.0216	0.1081
16				0.2838	0.3645					0.0244		0.1230		0.0027	0.0568
17				0.1527	0.2602	0.0041						0.1689		0.0014	0.0459
18				0.0932	0.1612	0.0135						0.0743			0.0311
18.2						0.0027									
19				0.0135	0.0528	0.0581						0.0351			0.0351
20					0.0041	0.0851						0.0419			0.0365
20.2						0.0041									
21					0.0014	0.1297						0.0162			0.0203
22						0.1324						0.0041			0.0054
23						0.1135						0.0027			0.0014
23.2						0.0014									
24						0.1662						0.0014			0.0014
24.2						0.0014					0.0014				
25						0.1527									0.0014
26						0.1000					0.0027				
26.2											0.0014				
27						0.0297					0.0136				
28						0.0041					0.0908				
29						0.0014					0.2114				
29.2											0.0027				
30											0.2927				
30.2											0.0285				
31											0.0596				
31.2											0.0989				
32											0.0149				
32.2											0.1287				
33											0.0041				
33.2											0.0420				
34.2											0.0027				
35											0.0041				
MAF	0.0078	0.0074	0.0077	0.0077	0.0080	0.0089	0.0076	0.0082	0.0081	0.0080	0.0082	0.0089	0.0081	0.0084	0.0089
PD	0.8938	0.8003	0.8657	0.8942	0.9041	0.9712	0.8892	0.9371	0.9119	0.9228	0.9505	0.9707	0.9212	0.9516	0.9840
PIC	0.7001	0.5749	0.6679	0.7007	0.7233	0.8679	0.6950	0.7824	0.7449	0.7523	0.8088	0.8646	0.7630	0.8192	0.9032
PE	0.4983	0.3518	0.4625	0.4847	0.5440	0.7789	0.4581	0.6142	0.5990	0.5682	0.6132	0.7734	0.5820	0.6658	0.7789
He	0.7432	0.6475	0.7216	0.7351	0.7696	0.8919	0.7189	0.8081	0.8000	0.7832	0.8076	0.8892	0.7908	0.8351	0.8919
HWE*	0.6490	0.5580	0.0825	0.3270	0.2900	0.3375	0.2680	0.7895	0.5620	0.5550	0.6770	0.9290	0.0855	0.0885	0.5540
N	370	366	370	370	369	370	370	370	370	369	369	370	368	370	370

MAF: minimum allele frequency; PD: power of discrimination; PE: power of exclusión; He: observed heterocigocity; N: number of individuals tested; HWE: Hardy-Weinberg equilibrium (X^2 test, 2000 shufflings).

TABLE 8—*Powerplex 16 data for Cesar.*

	TH01	TPOX	CSF1PO	D3S1358	VWA	FGA	D5S818	D13S317	D7S820	D8S1179	D21S11	D18S51	D16S539	Penta D	Penta E
2.2														0.0280	
3.2														0.0059	
5	0.0044													0.0118	0.0752
6	0.3392	0.0147												0.0044	
7	0.2670	0.0074	0.0103				0.0398		0.0147					0.0162	0.0988
8	0.0988	0.4676	0.0133				0.0251	0.0841	0.1386	0.0074			0.0162	0.0339	0.0693
8.2									0.0015						
9	0.1224	0.0900	0.0133				0.0487	0.1268	0.0811	0.0030		0.0015	0.1622	0.1475	0.0103
9.3	0.1490														
10	0.0192	0.0590	0.2094				0.0442	0.0605	0.2876	0.0501		0.0074	0.1490	0.2035	0.0457
11		0.2906	0.3009				0.3864	0.2183	0.2625	0.0678		0.0059	0.2788	0.2035	0.0767
12		0.0678	0.3614	0.0059			0.3171	0.2994	0.1770	0.1372		0.0914	0.2478	0.1416	0.1608
13		0.0030	0.0723	0.0074	0.0103		0.1283	0.1490	0.0295	0.3024		0.1077	0.1342	0.1372	0.0693
13.2												0.0030			
14			0.0177	0.0782	0.0560		0.0089	0.0575	0.0074	0.2611		0.1357	0.0118	0.0413	0.0959
14.2												0.0015			
15			0.0015	0.3466	0.1342			0.0044		0.1386		0.1681		0.0118	0.0959
16				0.2670	0.2920		0.0015			0.0265		0.1283		0.0089	0.0472
17				0.1844	0.3068					0.0059		0.1519		0.0015	0.0442
18				0.0973	0.1431	0.0118						0.0826		0.0030	0.0206
19				0.0133	0.0442	0.0767						0.0442			0.0442
20					0.0118	0.0752						0.0310			0.0221
21					0.0015	0.1180						0.0251			0.0162
21.2						0.0015						0.0015			
22						0.1401						0.0074			0.0044
23						0.1298						0.0059			0.0030
24						0.1681									
24.2						0.0015					0.0059				
25						0.1534									
26						0.0841									
26.2						0.0015									
27						0.0310					0.0236				
28						0.0044					0.1239				
29						0.0015					0.1991				
29.2											0.0015				
30											0.2670				
30.2											0.0206				
31											0.1003				
31.2											0.0796				
32											0.0133				
32.2											0.1047				
33											0.0030				
33.2											0.0442				
34											0.0015				
34.2											0.0030				
35											0.0044				
35.2											0.0015				
36											0.0030				
46.2						0.0015									
MAF	0.0083	0.0079	0.0086	0.0085	0.0085	0.0093	0.0084	0.0087	0.0085	0.0090	0.0091	0.0099	0.0089	0.0092	0.0099
PD	0.9129	0.8572	0.8774	0.9059	0.9163	0.9711	0.8811	0.9361	0.9279	0.9241	0.9570	0.9720	0.9234	0.9590	0.9846
PIC	0.7309	0.6335	0.6828	0.7213	0.7438	0.8655	0.6852	0.7855	0.7590	0.7660	0.8257	0.8718	0.7628	0.8350	0.9092
PE	0.4643	0.3458	0.5237	0.5136	0.5136	0.7115	0.4739	0.5655	0.5035	0.6481	0.6709	0.8190	0.6145	0.6882	0.8250
He	0.7675	0.6815	0.7301	0.7599	0.7779	0.8794	0.7281	0.8116	0.7912	0.7956	0.8444	0.8846	0.7951	0.8535	0.9167
HWE*	0.0970	0.2320	0.9120	0.1275	0.4520	0.0725	0.3070	0.2045	0.2810	0.2645	0.8640	0.2050	0.9475	0.3940	0.3885
N	339	339	339	339	339	339	339	339	339	339	339	339	339	339	339

MAF: minimum allele frequency; PD: power of discrimination; PE: power of exclusión; He: observed heterocigocity; N: number of individuals tested; HWE: Hardy-Weinberg equilibrium (X^2 test, 2000 shufflings).

TABLE 9—*Powerplex 16 data for Meta.*

	TH01	TPOX	CSF1PO	D3S1358	VWA	FGA	D5S818	D13S317	D7S820	D8S1179	D21S11	D18S51	D16S539	Penta D	Penta E
2.2														0.0015	
3.2														0.0015	
5														0.0015	0.0422
6	0.3840	0.0061												0.0015	
7	0.2500	0.0030	0.0030				0.0286		0.0166					0.0105	0.1054
8	0.0633	0.5030	0.0045				0.0030	0.0904	0.0949	0.0075			0.0211	0.0181	0.0196
9	0.1431	0.0456	0.0105				0.0873	0.1611	0.0813	0.0075			0.1401	0.1596	0.0136
9.3	0.1491														
10	0.0105	0.0426	0.2334				0.0663	0.0813	0.2892	0.0633		0.0060	0.1551	0.2590	0.0512
11		0.2766	0.2440				0.3946	0.2395	0.2997	0.0602		0.0120	0.2485	0.1461	0.0783
12		0.1185	0.4337				0.2816	0.2470	0.1792	0.1205		0.1205	0.2696	0.1642	0.1747
13		0.0046	0.0617	0.0030	0.0030		0.1280	0.0979	0.0346	0.3584		0.1220	0.1386	0.1596	0.1099
14			0.0090	0.0949	0.0816		0.0090	0.0813	0.0045	0.2575		0.1446	0.0256	0.0602	0.0768
15				0.3313	0.0831		0.0015	0.0015		0.1054		0.1521	0.0015	0.0090	0.1009
16				0.2937	0.3444					0.0196		0.1627		0.0060	0.0452
17				0.1762	0.2885							0.1235		0.0015	0.0301
18				0.0919	0.1284	0.0091						0.0602			0.0331
19				0.0090	0.0589	0.0725						0.0497			0.0271
20					0.0091	0.1224						0.0286			0.0422
20.2						0.0015									
21					0.0030	0.1103						0.0105			0.0346
22						0.1284						0.0030			0.0075
22.2															
23						0.1314							0.0030		0.0045
24						0.1480									0.0015
25						0.1299						0.0015			0.0015
26						0.1042									
27						0.0317					0.0120				
28						0.0060					0.1054				
29											0.2123				
29.2											0.0030				
30						0.0015					0.2877				
30.2											0.0226				
31											0.0753				
31.2											0.0828				
32											0.0271				
32.2											0.1250				
33											0.0015				
33.2											0.0361				
34.2											0.0060				
35											0.0030				
MAF	0.0086	0.0082	0.0081	0.0086	0.0091	0.0098	0.0088	0.0092	0.0089	0.0089	0.0092	0.0096	0.0088	0.0094	0.0101
PD	0.8910	0.8235	0.8570	0.9033	0.9038	0.9715	0.8805	0.9463	0.9089	0.9145	0.9516	0.9712	0.9327	0.9444	0.9853
PIC	0.7038	0.6017	0.642	0.7162	0.7305	0.8712	0.6967	0.8019	0.7440	0.7405	0.8106	0.8650	0.7727	0.8074	0.9048
PE	0.4995	0.3685	0.3602	0.4744	0.6058	0.7714	0.5359	0.6526	0.5681	0.5573	0.6353	0.7356	0.5306	0.6937	0.8213
He	0.7440	0.6596	0.6536	0.7289	0.8036	0.8882	0.7651	0.8283	0.7831	0.7771	0.8193	0.8705	0.7620	0.8494	0.9127
HWE*	0.6055	0.1965	0.2510	0.6190	0.0565	0.0595	0.2170	0.2025	0.4945	0.8410	0.6295	0.7810	0.2105	0.0860	0.8690
N	332	329	332	332	331	331	332	332	332	332	332	332	332	332	332

MAF: minimum allele frequency; PD: power of discrimination; PE: power of exclusión; He: observed heterocigocity; N: number of individuals tested; HWE: Hardy-Weinberg equilibrium (X^2 test, 2000 shufflings).

TABLE 10—*Powerplex 16 data for Magdalena.*

	TH01	TPOX	CSF1PO	D3S1358	VWA	FGA	D5S818	D13S317	D7S820	D8S1179	D21S11	D18S51	D16S539	Penta D	Penta E
2.2														0.0517	
3.2														0.0037	
5														0.0148	0.0461
6	0.3413	0.0203													0.0018
7	0.2362	0.0111	0.0185				0.0277		0.0074					0.0129	0.0923
8	0.1199	0.4133	0.0203				0.0295	0.0738	0.1513	0.0092			0.0221	0.0332	0.0627
9	0.1273	0.1015	0.0314				0.0424	0.1734	0.0849	0.0092		0.0019	0.1808	0.1421	0.0148
9.3	0.1661														
10	0.0092	0.0498	0.2103				0.0498	0.0498	0.2638	0.0590		0.0074	0.1513	0.2048	0.0609
10.2												0.0019			
11		0.3100	0.2970				0.4041	0.2030	0.2841	0.0572		0.0185	0.2546	0.1974	0.0849
12		0.0941	0.3524				0.2934	0.2860	0.1734	0.1218		0.1093	0.2509	0.1439	0.1439
13			0.0627	0.0018	0.0037		0.1458	0.1144	0.0277	0.3266		0.1037	0.1144	0.1162	0.0849
13.2												0.0019			
14			0.0074	0.1033	0.0701		0.0074	0.0959	0.0074	0.2417		0.1574	0.0240	0.0535	0.0941
14.2												0.0037			
15				0.3801	0.1218			0.0037			0.1236	0.1704	0.0018	0.0185	0.0996
16				0.2657	0.3376						0.0424	0.1204	0.0074	0.0074	0.0535
16.2						0.0018									
17				0.1494	0.2601	0.0018					0.0092	0.1204			0.0443
18				0.0978	0.1568	0.0111						0.0685			0.0203
18.2															
19			0.0018	0.0018	0.0443	0.0812						0.0463			0.0314
19.2						0.0018									
20					0.0018	0.0941						0.0241			0.0221
20.2						0.0018									
21					0.0037	0.1162						0.0259			0.0258
21.2						0.0018									
22						0.1642						0.0111			0.0111
23						0.1199						0.0056			0.0055
23.2						0.0018									
24						0.1476						0.0019			
24.2						0.0018					0.0037				
25						0.1439									
26						0.0609									
27						0.0332					0.0221				
28						0.0092					0.1310				
29						0.0037					0.2030				
30											0.2528				
30.2											0.0221				
31											0.0498				
31.2											0.0812				
32											0.0185				
32.2											0.1531				
33.2											0.0443				
34											0.0018				
34.2											0.0074				
35											0.0074				
36											0.0018				
45.2						0.0018									
MAF	0.0105	0.0105	0.0103	0.0104	0.0107	0.0117	0.0103	0.0113	0.0110	0.0111	0.0111	0.0114	0.0107	0.0116	0.0122
PD	0.9133	0.8693	0.8806	0.8942	0.9143	0.9719	0.8853	0.9416	0.9167	0.9307	0.9527	0.9740	0.9301	0.9619	0.9850
PIC	0.7342	0.6660	0.6939	0.7026	0.7384	0.8704	0.6815	0.7927	0.7568	0.7697	0.8235	0.8750	0.7734	0.8412	0.9145
PE	0.5019	0.4957	0.4532	0.4772	0.5402	0.7290	0.4532	0.6635	0.6004	0.6211	0.6351	0.6695	0.5337	0.7216	0.8113
He	0.7454	0.7417	0.7159	0.7306	0.7675	0.8672	0.7159	0.8339	0.8007	0.8118	0.8192	0.8370	0.7638	0.8635	0.9077
HWE*	0.6800	0.6920	0.1705	0.8230	0.6980	0.0715	0.2545	0.3975	0.1645	0.6150	0.3595	0.6540	0.0625	0.5030	0.2075
N	271	271	271	271	271	271	271	271	271	271	271	270	271	271	271

MAF: minimum allele frequency; PD: power of discrimination; PE: power of exclusión; He: observed heterocigocity; N: number of individuals tested; HWE: Hardy-Weinberg equilibrium (X^2 test, 2000 shufflings).

TABLE 11—*Powerplex 16 data for Nariño.*

	TH01	TPOX	CSF1PO	D3S1358	VWA	FGA	D5S818	D13S317	D7S820	D8S1179	D21S11	D18S51	D16S539	Penta D	Penta E
2.2														0.0022	
5														0.0022	0.0288
6	0.3333												0.0022		
7	0.2511	0.0045					0.0664		0.0089					0.0066	0.0597
8	0.0667	0.5179	0.0022				0.0044	0.0597	0.0819	0.0066			0.0111	0.0022	0.0111
9	0.1311	0.0628	0.0177				0.1261	0.1792	0.0509	0.0089			0.1615	0.2212	0.0155
9.3	0.2111														
10	0.0067	0.0493	0.2898				0.0465	0.0708	0.2788	0.0841		0.0044	0.1836	0.2434	0.0465
11		0.2287	0.2699				0.4314	0.1814	0.2810	0.0487		0.0067	0.2566	0.1394	0.0796
12		0.1300	0.3296	0.0022			0.2168	0.2544	0.2412	0.1460		0.0600	0.2633	0.0996	0.1814
13		0.0067	0.0774				0.0929	0.1748	0.0509	0.3850		0.0822	0.1084		0.0907
14			0.0133	0.0951	0.0376		0.0133	0.0796	0.0066	0.2058		0.2511	0.0133	0.0819	0.0531
15				0.4757	0.0531		0.0022			0.0885		0.1622		0.0089	0.1195
16				0.2146	0.3473					0.0177		0.1333		0.0022	0.0619
17				0.1106	0.3429	0.0111				0.0089		0.1844			0.0420
18				0.1018	0.1482	0.0066						0.0556		0.0022	0.0708
19					0.0575	0.0752						0.0267			0.0465
20					0.0111	0.0708						0.0156			0.0553
21					0.0022	0.0907						0.0044			0.0221
22						0.1350						0.0111			0.0066
22.2						0.0022									
23						0.1283						0.0022			0.0089
24						0.1792									
25						0.1504									
25.2						0.0022									
26						0.0973									
27						0.0442					0.0178				
28						0.0044					0.0933				
29											0.2356				
30						0.0022					0.2289				
30.2											0.0156				
31											0.0333				
31.2											0.1089				
32											0.0089				
32.2											0.1844				
33.2											0.0733				
MAF	0.0125	0.0118	0.0127	0.0121	0.0128	0.0139	0.0120	0.0141	0.0130	0.0127	0.0130	0.0131	0.0136	0.0130	0.0153
PD	0.9020	0.8377	0.8640	0.8623	0.8763	0.9685	0.8980	0.9402	0.9085	0.9177	0.9491	0.9561	0.9166	0.9435	0.9817
PIC	0.7204	0.6128	0.6782	0.6573	0.6892	0.8680	0.7028	0.8014	0.7375	0.7420	0.8089	0.8262	0.7612	0.7957	0.9058
PE	0.4817	0.3373	0.5289	0.4201	0.5444	0.7380	0.4067	0.7648	0.5843	0.5289	0.5826	0.5908	0.6853	0.5843	0.8827
He	0.7333	0.6368	0.7611	0.6947	0.7699	0.8717	0.6858	0.8850	0.7920	0.7611	0.7911	0.7956	0.8451	0.7920	0.9425
HWE*	0.6070	0.5525	0.0610	0.7145	0.4765	0.5430	0.1605	0.7310	0.4605	0.1330	0.2730	0.5190	0.1540	0.8535	0.2680
N	225	223	226	226	226	226	226	226	226	226	225	225	226	226	226

MAF: minimum allele frequency; PD: power of discrimination; PE: power of exclusión; He: observed heterocigocity; N: number of individuals tested; HWE: Hardy-Weinberg equilibrium (X^2 test, 2000 shufflings).

TABLE 12—*Powerplex 16 data for Casanare.*

	TH01	TPOX	CSF1PO	D3S1358	VWA	FGA	D5S818	D13S317	D7S820	D8S1179	D21S11	D18S51	D16S539	Penta D	Penta E
2.2														0.0047	
5															0.0403
6	0.3957	0.0071													
7	0.2417	0.0024	0.0024				0.0427	0.0024	0.0071					0.0071	0.0853
8	0.0758	0.4621	0.0071					0.0995	0.1043	0.0095			0.0143	0.0190	0.0261
9	0.1161	0.0640	0.0190				0.0972	0.1517	0.0758	0.0142			0.1548	0.1919	0.0095
9.3	0.1635														
10	0.0071	0.0355	0.1943				0.0687	0.0427	0.2678	0.0545		0.0071	0.1786	0.2180	0.0403
10.2												0.0047			
11		0.3175	0.2701				0.3910	0.1848	0.2796	0.0664		0.0071	0.2667	0.1754	0.0711
12		0.1043	0.4218				0.2820	0.3246	0.2180	0.1659		0.0924	0.2452	0.1374	0.1635
13		0.0071	0.0735	0.0024	0.0047		0.1043	0.1066	0.0355	0.3128		0.1043	0.1262	0.1706	0.0900
14			0.0118	0.0806	0.0640		0.0118	0.0829	0.0118	0.2322		0.1896	0.0143	0.0498	0.1066
15				0.3294	0.0829		0.0024	0.0047		0.1280		0.1398		0.0166	0.1209
16				0.3460	0.4218					0.0142		0.1374		0.0071	0.0640
17				0.1706	0.2512					0.0024		0.1754		0.0024	0.0190
18				0.0640	0.1303	0.0024						0.0450			0.0332
19				0.0071	0.0403	0.0806						0.0308			
20					0.0047	0.0877						0.0379			
20.2						0.0071									
21						0.0972						0.0118			0.0213
22						0.1351						0.0071			0.0118
22.2						0.0047									
23						0.1019						0.0095			0.0071
24						0.1991									
25						0.1635									
26						0.0900									
27						0.0237					0.0095				
28						0.0024					0.0857				
29						0.0047					0.2048				
30											0.2810				
30.2											0.0310				
31											0.0833				
31.2											0.0571				
32											0.0310				
32.2											0.1643				
33											0.0048				
33.2											0.0405				
34											0.0024				
34.2											0.0024				
35											0.0024				
MAF	0.0134	0.0131	0.0129	0.0131	0.0138	0.0150	0.0131	0.0144	0.0136	0.0136	0.0150	0.0150	0.0137	0.0145	0.0169
PD	0.8850	0.8138	0.8636	0.8887	0.8879	0.9679	0.9012	0.9372	0.9195	0.9307	0.9438	0.9650	0.9253	0.9464	0.9808
PIC	0.6997	0.6159	0.6570	0.6873	0.6921	0.8594	0.7032	0.7834	0.7517	0.7686	0.8111	0.8571	0.7657	0.8117	0.9061
PE	0.5077	0.4529	0.4087	0.4529	0.5746	0.7578	0.4453	0.6730	0.5407	0.5323	0.7471	0.7483	0.5471	0.6916	0.9133
He	0.7488	0.7156	0.6872	0.7156	0.7867	0.8815	0.7109	0.8389	0.7678	0.7630	0.8762	0.8768	0.7714	0.8483	0.9573
HWE*	0.4195	0.5295	0.5080	0.8580	0.5710	0.8015	0.1625	0.5335	0.5260	0.3320	0.2395	0.2825	0.7510	0.4435	0.1520
N	211	211	211	211	211	211	211	211	211	211	210	211	210	211	211

MAF: minimum allele frequency; PD: power of discrimination; PE: power of exclusión; He: observed heterocigocity; N: number of individuals tested; HWE: Hardy-Weinberg equilibrium (X^2 test, 2000 shufflings).

TABLE 13—*Powerplex 16 data for Atlantico.*

Allele	TH01	TPOX	CSF1PO	D3S1358	VWA	FGA	D5S818	D13S317	D7S820	D8S1179	D21S11	D18S51	D16S539	Penta D	Penta E
2.2														0.0316	
3.2														0.0026	
5	0.0053													0.0105	0.0500
6	0.3053	0.0238												0.0053	0.0026
7	0.2868	0.0026	0.0079				0.0237		0.0158					0.0079	0.0974
8	0.1079	0.4444	0.0185				0.0184	0.0974	0.1184	0.0079			0.0105	0.0132	0.0553
9	0.1395	0.0847	0.0265				0.0474	0.1342	0.1026	0.0053			0.1737	0.1737	0.0132
9.3	0.1500														
10	0.0053	0.0529	0.2354				0.0447	0.0500	0.2553	0.0684		0.0026	0.1500	0.2053	0.0711
11		0.2646	0.2937				0.3921	0.2342	0.3079	0.0895		0.0132	0.2684	0.1632	0.0947
12		0.1270	0.3624	0.0026			0.2974	0.3158	0.1789	0.1579		0.1158	0.2447	0.1658	0.1605
13			0.0556	0.0026	0.0106		0.1658	0.0921	0.0184	0.2789		0.0921	0.1368	0.1474	0.1105
14				0.1237	0.0559		0.0105	0.0711	0.0026	0.2289		0.1789	0.0132	0.0474	0.0632
14.2												0.0053			
15				0.3368	0.0904			0.0053		0.1316		0.1553	0.0026	0.0158	0.0868
16				0.2737	0.3644					0.0316		0.1342		0.0079	0.0632
17				0.1632	0.2633							0.1474		0.0026	0.0263
18				0.0921	0.1516	0.0079						0.0632			0.0289
19				0.0053	0.0479	0.0921						0.0316			0.0368
20					0.0160	0.0947						0.0342			0.0158
20.2						0.0079									
21						0.1289						0.0184			0.0211
22						0.1289						0.0026			0.0026
23						0.1132						0.0053			
24						0.2026									
24.2											0.0026				
25						0.1132					0.0053				
26						0.0684					0.0237				
27						0.0289					0.1079				
28						0.0053					0.2026				
29						0.0026					0.2789				
30											0.2789				
30.2											0.0263				
31											0.0658				
31.2											0.0842				
32											0.0026				
32.2											0.1316				
33											0.0026				
33.2											0.0474				
34											0.0053				
34.2											0.0026				
35											0.0079				
36											0.0026				
44.2						0.0026									
45.2						0.0026									
MAF	0.0150	0.0147	0.0141	0.0151	0.0150	0.0171	0.0146	0.0155	0.0157	0.0157	0.0156	0.0169	0.0149	0.0158	0.0175
PD	0.9107	0.8632	0.8815	0.9055	0.9077	0.9678	0.8793	0.9299	0.9109	0.9358	0.9523	0.9657	0.9268	0.9567	0.9807
PIC	0.7349	0.6635	0.6737	0.7237	0.7269	0.8645	0.6817	0.7761	0.7503	0.7889	0.8188	0.8627	0.7655	0.8294	0.9073
PE	0.5418	0.4764	0.3711	0.5511	0.5098	0.8062	0.4701	0.6187	0.6387	0.6387	0.6287	0.7847	0.5234	0.6589	0.8386
He	0.7684	0.7302	0.6614	0.7737	0.7500	0.9053	0.7263	0.8105	0.8211	0.8211	0.8158	0.8947	0.7579	0.8316	0.9211
HWE	0.1825	0.1310	0.8395	0.9035	0.5810	0.5435	0.0970	0.5500	0.6460	0.6650	0.1675	0.2015	0.0880	0.7330	0.5135
N	190	189	189	190	188	190	190	190	190	190	190	190	190	190	190

MAF: minimum allele frequency; PD: power of discrimination; PE: power of exclusión; He: observed heterocigocity; N: number of individuals tested; HWE: Hardy-Weinberg equilibrium (X^2 test, 2000 shufflings).

TABLE 14—*Powerplex 16 data for La Guajira.*

	TH01	TPOX	CSF1PO	D3S1358	VWA	FGA	D5S818	D13S317	D7S820	D8S1179	D21S11	D18S51	D16S539	Penta D	Penta E
2.2														0.0412	
5														0.0309	0.0567
6	0.3041	0.0052							0.0103						
7	0.2320	0.0052	0.0258				0.0258		0.0052					0.0258	0.0773
8	0.1134	0.4845	0.0258				0.0206	0.0515	0.1495	0.0052			0.0052	0.0464	0.0567
9	0.1701	0.0979	0.0309				0.0464	0.0876	0.1082	0.0155		0.0052	0.1649	0.1443	0.0103
9.3	0.1804														
10		0.0670	0.2113				0.0876	0.0361	0.3247	0.0464		0.0155	0.1340	0.1907	0.0567
11		0.2990	0.2784				0.3144	0.2371	0.1959	0.0876		0.1082	0.3711	0.2165	0.0928
12		0.0412	0.3454		0.0103		0.3093	0.4021	0.1546	0.1392		0.1082	0.2320	0.0928	0.1804
12.2														0.0052	
13			0.0619	0.0052	0.0103		0.1649	0.1495	0.0515	0.2526		0.0876	0.0773	0.1392	0.1082
13.2												0.0052			
14			0.0155	0.0773	0.0928		0.0309	0.0309		0.2371		0.0928	0.0103	0.0567	0.0722
15			0.0052	0.3351	0.1598			0.0052		0.1598		0.1598	0.0052	0.0103	0.1186
16				0.2680	0.2887					0.0515		0.1340			0.0464
16.2						0.0052									
17				0.1959	0.2474	0.0052					0.0052	0.1753			0.0258
18				0.1082	0.1289	0.0052						0.0876			0.0206
18.2						0.0103									
19				0.0103	0.0567	0.0464						0.0464			0.0155
20					0.0052	0.0619						0.0309			0.0103
21						0.1546						0.0206			0.0258
22						0.1443						0.0155			0.0155
22.2						0.0052									
23						0.1856						0.0103			0.0103
24						0.1701									
24.2											0.0052				
25						0.1237						0.0052			
26						0.0567									
27						0.0103					0.0722				
28						0.0103					0.1546				
29											0.2216				
29.2											0.0052				
30											0.2732				
30.2											0.0155				
31						0.0052					0.0464				
31.2											0.0773				
32											0.0103				
32.2											0.0670				
33											0.0103				
33.2											0.0155				
34											0.0052				
35											0.0103				
36											0.0103				
MAF	0.0276	0.0266	0.0266	0.0280	0.0306	0.0316	0.0295	0.0280	0.0282	0.0303	0.0293	0.0319	0.0286	0.0312	0.0306
PD	0.9136	0.8254	0.9034	0.8968	0.9131	0.9565	0.8883	0.9033	0.9272	0.9394	0.9463	0.9715	0.8988	0.9519	0.9787
PIC	0.7442	0.6076	0.7130	0.7214	0.7735	0.8525	0.7316	0.7131	0.7674	0.7990	0.8144	0.8751	0.7211	0.8437	0.9006
PE	0.4625	0.3688	0.3688	0.4966	0.7061	0.7681	0.6261	0.4966	0.5142	0.6857	0.6067	0.7891	0.5503	0.7473	0.7061
He	0.7834	0.6634	0.7561	0.7636	0.8054	0.8714	0.7704	0.7510	0.7995	0.8266	0.8378	0.8905	0.7611	0.8636	0.9122
HWE*	0.1100	0.2020	0.4020	0.1580	0.2100	0.6465	0.3145	0.6715	0.7445	0.4155	0.2690	0.9815	0.3545	0.1375	0.0525
N	97	97	97	97	97	97	97	97	97	97	97	97	97	97	97

MAF: minimum allele frequency; PD: power of discrimination; PE: power of exclusión; He: observed heterocigocity; N: number of individuals tested; HWE: Hardy-Weinberg equilibrium (X^2 test, 2000 shufflings).