

For the Record

Allele Frequencies for Fourteen STR Loci of the PowerPlex™ 1.1 and 2.1 Multiplex Systems and Penta D Locus In Caucasians, African-Americans, Hispanics, and Other Populations of the United States of America and Brazil

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Keywords: forensic science short tandem repeat, PowerPlex™ 1.1, PowerPlex™ 2.1, multiplex, polymerase chain reaction, DNA typing, forensics, population genetics, FGA, TPOX, D8S1179, vWA, Penta E, D18S51, D21S11, TH01, D3S1358, Penta D, CSF1PO, D16S539, D7S820, D13S317, D5S818

Population Databases:

- NCSBI (1019 individuals): Approximately 372 Caucasian Americans, 383 African Americans, 157 Hispanic Americans⁷ and 107 American Indians (Lumbee⁸).
- PC/BT⁹ (682 individuals): Approximately 172 Caucasian Americans, 139 African Americans, 210 Hispanic Americans and 161 Asian Americans.
- PBSO (617 individuals): Approximately 117 Caucasian Americans, 100 African Americans, 100 Hispanic Americans,

100 “No-Black” Brazilians (RNBP), 100 Black Brazilians (RBP), and 100 American Indians (Central West, BCWP).

- VDFS (551 individuals): Approximately 174 Caucasian Americans, 194 African Americans, and 183 Hispanic Americans.

Blood samples collected from individuals were processed for DNA extraction and subsequent STR analysis with the GenePrint® PowerPlex™ 1.1 and 2.1 multiplex systems as well as with the monoplex Penta D (Promega, Madison, WI) using the FMBIO® detection system and software analysis (Hitachi, Alameda, CA) as described by [Levedakou et al. Characterization and validation studies of PowerPlex™ 2.1, a nine-locus short tandem repeat (STR) multiplex system, and Penta D monoplex. *J Forensic Sci*, submitted] (1), except as noted.^{7,9} The allele frequencies of the 15 STR loci (Tables 1–15) were calculated by simple counting and population studies were performed by Dr. B. Weir for the NCSBI population database, Dr. K. McElfresh for the PC/BT and VDFS population databases, and Dr. R. Chakraborty for the PBSO population database. Independence of inheritance was confirmed for all 15 loci by the exact test for Hardy-Weinberg equilibrium for each database. The statistical results are consistent with populations in equilibrium among loci and confirm previous observations (2). Also, forensic (matching probability) and paternity (power of exclusion and typical paternity index) statistics are presented for PowerPlex™ 1.1, PowerPlex™ 2.1, and the new system PowerPlex™ 16 that includes all 15 loci (Table 16). Statistical analysis data are available upon request from the corresponding author.

Acknowledgments

The authors would like to thank Janis R. Matthews from the NCSBI laboratory and Elizabeth A. Amriott, Laura A. Flanagan, and Nadine A. Nassif from Promega for their contributing efforts to these studies.

References

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⁷ The data for the Hispanic Americans (all except Penta D) of the NCSBI database were analyzed using the ABI PRISM® 310 Genetic Analyzer and the Profiler Plus™/Cofiler™ kits (Perkin-Elmer, Foster City, CA).

⁸ The Lumbee Indians are not recognized by the Federal Government as a native American Indian tribe.

⁹ Promega Corporation analyzed the African and Asian American samples using the PowerPlex™ 16 system and the ABI PRISM® 310 Genetic Analyzer. Bode Technology Group analyzed the Caucasian and Hispanic American samples using the PowerPlex™ 1.1, 2.1 and the monoplex Penta D (Promega, Madison, WI).

TABLE 1—HUMCSFIPO population databases.

US CAUCASIANS											
NCSBI			VDFS			PC/BT			PBSO		
Allele	Count	Frequency	Allele	Count	Frequency	Allele	Count	Frequency	Allele	Count	Frequency
15	2	0.007*	15	0	0.014*	15	2	0.017*	15	0	0.022*
14	5	0.007	14	3	0.014*	14	3	0.017*	14	1	0.022*
13	53	0.076	13	27	0.078	13	18	0.060	13	12	0.052
12	208	0.3	12	125	0.359	12	90	0.300	12	71	0.306
11	202	0.291	11	97	0.279	11	91	0.303	11	88	0.379
10	203	0.293	10	83	0.239	10	90	0.300	10	53	0.228
9	17	0.024	9	11	0.032	9	4	0.017*	9	6	0.026
8	3	0.007*	8	1	0.014*	8	2	0.017*	8	0	0.022*
7	1	0.007*	7	1	0.014*	7	0	0.017*	7	0	0.022*
6	0	0.007*	6	0	0.014*	6	0	0.017*	6	1	0.022*
5	0	0.007*	5	0	0.014*	5	0	0.017*	5	0	0.022*
TOTAL	694		TOTAL	348		TOTAL	300		TOTAL	232	

* = Minimum allele frequency as recommended by the NRC II report.

TABLE 1—Continued.

US HISPANICS											
NCSBI/CMPD			VDFS			PC/BT			PBSO		
Allele	Count	Frequency	Allele	Count	Frequency	Allele	Count	Frequency	Allele	Count	Frequency
15	0	0.016*	15	1	0.014*	15	1	0.017*	15	0	0.026*
14	2	0.016	14	3	0.014*	14	3	0.017*	14	0	0.026*
13	18	0.058	13	20	0.055	13	22	0.076	13	13	0.066
12	111	0.36	12	120	0.331	12	107	0.369	12	73	0.372
11.1	1	0.016*	11.1	0	0.014*	11.1	0	0.017*	11.1	0	0.026*
11	88	0.286	11	109	0.301	11	87	0.300	11	64	0.327
10	81	0.263	10	90	0.249	10	60	0.207	10	43	0.219
9	4	0.016*	9	12	0.033*	9	8	0.028	9	2	0.026*
8	1	0.016*	8	3	0.014*	8	1	0.017*	8	0	0.026*
7	2	0.016*	7	4	0.014*	7	1	0.017*	7	1	0.026*
6	0	0.016*	6	0	0.014*	6	0	0.017*	6	0	0.026*
5	0	0.016*	5	0	0.014*	5	0	0.017*	5	0	0.026*
TOTAL	308		TOTAL	362		TOTAL	290		TOTAL	196	

TABLE 1—Continued.

US AFRICAN-AMERICANS											
NCSBI			VDFS			PC/BT			PBSO		
Allele	Count	Frequency	Allele	Count	Frequency	Allele	Count	Frequency	Allele	Count	Frequency
15	0	0.007*	15	0	0.013*	15	0	0.018*	15	0	0.025*
14	3	0.007	14	2	0.013*	14	0	0.018*	14	0	0.025*
13	35	0.049	13	24	0.062	13	9	0.032	13	12	0.06
12	199	0.281	12	107	0.276	12	71	0.255	12	57	0.285
11	176	0.249	11	90	0.232	11	62	0.223	11	53	0.265
10	175	0.247	10	92	0.237	10	94	0.338	10	49	0.245
9	30	0.042	9	14	0.036	9	9	0.032	9	6	0.03
8	49	0.069	8	29	0.075	8	23	0.083	8	10	0.05
7	40	0.056	7	30	0.077	7	10	0.036	7	13	0.065
6	1	0.007*	6	0	0.013*	6	0	0.018*	6	0	0.025*
5	0	0.007*	5	0	0.013*	5	0	0.018*	5	0	0.025*
TOTAL	708		TOTAL	388		TOTAL	278		TOTAL	200	

TABLE 1—Continued.

OTHERS														
NCSBI-LUMBEE INDIAN			PC/BT-ASIAN			PBSO-BCWP			PBSO-RBP			PBSO-RNBP		
Allele	Count	Frequency	Allele	Count	Frequency	Allele	Count	Frequency	Allele	Count	Frequency	Allele	Count	Frequency
15	1	0.024*	15	1	0.016*	15	0	0.024*	15	0	0.021*	15	0	0.024*
14	8	0.038	14	5	0.016	14	0	0.024*	14	0	0.021*	14	3	0.024*
13	39	0.184	13	6	0.019	13	15	0.072	13	10	0.043	13	11	0.053
12	65	0.307	12	132	0.410	12	60	0.288	12	86	0.368	12	72	0.346
11	42	0.198	11	84	0.261	11	68	0.327	11	51	0.218	11	58	0.279
10	52	0.245	10	78	0.242	10	52	0.25	10	65	0.278	10	67	0.274
9	1	0.024*	9	15	0.047	9	5	0.024	9	7	0.03	9	5	0.024
8	2	0.024*	8	0	0.016*	8	2	0.024*	8	5	0.021	8	2	0.024*
7	2	0.024*	7	1	0.016*	7	6	0.029	7	10	0.043	7	0	0.024*
6	0	0.024*	6	0	0.016*	6	0	0.024*	6	0	0.021*	6	0	0.024*
5	0	0.024*	5	0	0.016*	5	0	0.024*	5	0	0.021*	5	0	0.024*
TOTAL	212		TOTAL	322		TOTAL	208		TOTAL	234		TOTAL	208	

TABLE 2—D16S539 population databases.

US CAUCASIANS											
NCSBI			VDFS			PC/BT			PBSO		
Allele	Count	Frequency	Allele	Count	Frequency	Allele	Count	Frequency	Allele	Count	Frequency
15	1	0.007*	15	1	0.014*	15	0	0.017*	15	0	0.022*
14	15	0.022	14	6	0.017	14	0	0.017*	14	5	0.022
13.3	0	0.007*	13.3	0	0.014*	13.3	0	0.017*	13.3	0	0.022*
13	124	0.18	13	62	0.178	13	47	0.163	13	33	0.142
12	221	0.32	12	112	0.322	12	104	0.361	12	70	0.302
11	206	0.299	11	89	0.256	11	82	0.285	11	78	0.336
10	37	0.054	10	24	0.069	10	22	0.076	10	15	0.085
9	74	0.107	9	48	0.138	9	27	0.094	9	26	0.112
8	12	0.017	8	6	0.017*	8	6	0.021	8	5	0.022
5	0	0.007*	5	0	0.014*	5	0	0.017*	5	0	0.022*
TOTAL	690		TOTAL	348		TOTAL	288		TOTAL	232	

* = Minimum allele frequency as recommended by the NRC II report.

TABLE 2—Continued.

US HISPANICS											
NCSBI/CMPD			VDFS			PC/BT			PBSO		
Allele	Count	Frequency	Allele	Count	Frequency	Allele	Count	Frequency	Allele	Count	Frequency
15	1	0.016*	15	0	0.014*	15	0	0.018*	15	0	0.026*
14	3	0.016*	14	9	0.025	14	6	0.021	14	8	0.041
13	42	0.136	13	58	0.16	13	41	0.146	13	27	0.138
12	76	0.247	12	97	0.268	12	68	0.243	12	64	0.327
11	80	0.26	11	73	0.202	11	79	0.282	11	43	0.219
10	69	0.224	10	55	0.152	10	47	0.168	10	27	0.138
9	34	0.11	9	62	0.171	9	34	0.121	9	24	0.122
8	3	0.016*	8	7	0.019	8	5	0.018	8	3	0.026*
5	0	0.016*	5	1	0.014*	5	0	0.018*	5	0	0.026*
TOTAL	308		TOTAL	362		TOTAL	280		TOTAL	196	

TABLE 2—Continued.

US AFRICAN-AMERICANS											
NCSBI			VDFS			PC/BT			PBSO		
Allele	Count	Frequency	Allele	Count	Frequency	Allele	Count	Frequency	Allele	Count	Frequency
15	0	0.007*	15	1	0.013*	15	0	0.018*	15	0	0.025*
14	15	0.021	14	12	0.031	14	9	0.032	14	0	0.025*
13.3	0	0.007*	13.3	0	0.013*	13.3	1	0.018*	13.3	0	0.025*
13	81	0.115	13	56	0.144	13	40	0.144	13	26	0.13
12	131	0.187	12	73	0.188	12	55	0.198	12	42	0.21
11	223	0.318	11	113	0.291	11	82	0.295	11	55	0.275
10	75	0.107	10	37	0.095	10	24	0.086	10	29	0.145
9	151	0.215	9	81	0.209	9	60	0.216	9	41	0.205
8	25	0.036	8	15	0.039	8	7	0.025	8	7	0.035
5	1	0.007*	5	0	0.013*	5	0	0.018*	5	0	0.025*
TOTAL	702		TOTAL	388		TOTAL	278		TOTAL	200	

TABLE 2—Continued.

OTHERS														
NCSBI-LUMBEE INDIAN			PC/BT-ASIAN			PBSO-BCWP			PBSO-RBP			PBSO-RNBP		
Allele	Count	Frequency	Allele	Count	Frequency	Allele	Count	Frequency	Allele	Count	Frequency	Allele	Count	Frequency
15	0	0.024*	15	1	0.016*	15	0	0.024*	15	0	0.021*	15	0	0.024*
14	2	0.024*	14	7	0.022	14	10	0.048	14	4	0.021*	14	5	0.024*
13	28	0.132	13	36	0.112	13	31	0.149	13	31	0.132	13	38	0.183
12	41	0.193	12	64	0.199	12	54	0.26	12	50	0.214	12	51	0.245
11	93	0.439	11	84	0.261	11	62	0.298	11	61	0.261	11	63	0.303
10	16	0.075	10	46	0.143	10	11	0.053	10	22	0.094	10	15	0.072
9	25	0.118	9	79	0.245	9	34	0.163	9	55	0.235	9	32	0.154
8	7	0.033	8	5	0.016	8	6	0.029	8	11	0.047	8	4	0.024*
5	0	0.024*	5	0	0.016*	5	0	0.024*	5	0	0.021*	5	0	0.024*
TOTAL	212		TOTAL	322		TOTAL	208		TOTAL	234		TOTAL	208	

TABLE 3—D13S317 population databases.

US CAUCASIANS											
NCSBI			VDFS			PC/BT			PBSO		
Allele	Count	Frequency	Allele	Count	Frequency	Allele	Count	Frequency	Allele	Count	Frequency
15	2	0.007*	15	0	0.014*	15	0	0.017*	15	0	0.022*
14	33	0.048	14	15	0.043	14	12	0.040	14	7	0.03
13	69	0.1	13	40	0.115	13	28	0.094	13	34	0.147
12	204	0.296	12	100	0.287	12	96	0.322	12	58	0.25
11	230	0.333	11	102	0.293	11	94	0.315	11	62	0.267
10	35	0.051	10	20	0.057	10	14	0.047	10	18	0.078
9	44	0.064	9	23	0.066	9	23	0.077	9	24	0.103
8	73	0.106	8	48	0.138	8	31	0.104	8	28	0.121
7	0	0.007*	7	0	0.014*	7	0	0.017*	7	1	0.022*
TOTAL	690		TOTAL	348		TOTAL	298		TOTAL	232	

* = Minimum allele frequency as recommended by the NRC II report.

TABLE 3—Continued.

US HISPANICS											
NCSBI/CMPD			VDFS			PC/BT			PBSO		
Allele	Count	Frequency	Allele	Count	Frequency	Allele	Count	Frequency	Allele	Count	Frequency
15	0	0.018*	15	0	0.014*	15	0	0.016*	15	0	0.026*
14	26	0.084	14	27	0.075	14	20	0.065	14	9	0.046
13	31	0.101	13	56	0.155	13	32	0.104	13	22	0.112
12	67	0.218	12	80	0.221	12	81	0.263	12	43	0.219
11	68	0.221	11	79	0.218	11	66	0.214	11	58	0.296
10	32	0.104	10	20	0.055	10	29	0.094	10	17	0.087
9	65	0.211	9	61	0.169	9	59	0.192	9	27	0.138
8	17	0.055	8	39	0.108	8	21	0.068	8	20	0.102
7	1	0.016*	7	0	0.014*	7	0	0.016*	7	0	0.026*
6	1	0.016*	6	0	0.014*	6	0	0.016*	6	0	0.026*
TOTAL	308		TOTAL	362		TOTAL	308		TOTAL	196	

TABLE 3—Continued.

US AFRICAN-AMERICANS											
NCSBI			VDFS			PC/BT			PBSO		
Allele	Count	Frequency	Allele	Count	Frequency	Allele	Count	Frequency	Allele	Count	Frequency
15	0	0.007*	15	1	0.013*	15	0	0.018*	15	0	0.025*
14	38	0.054	14	24	0.062	14	18	0.065	14	15	0.075
13	114	0.162	13	54	0.139	13	58	0.209	13	36	0.18
12	305	0.434	12	158	0.407	12	105	0.378	12	77	0.385
11	192	0.274	11	127	0.327	11	79	0.284	11	63	0.315
10	14	0.02	10	7	0.018	10	8	0.029	10	1	0.025*
9	17	0.024	9	10	0.026	9	6	0.022	9	5	0.025
8	22	0.031	8	7	0.018	8	4	0.018*	8	3	0.025*
7	0	0.007*	7	0	0.013*	7	0	0.018*	7	0	0.025*
TOTAL	702		TOTAL	388		TOTAL	278		TOTAL	200	

TABLE 3—Continued.

OTHERS														
NCSBI-LUMBEE INDIAN			PC/BT-ASIAN			PBSO-BCWP			PBSO-RBP			PBSO-RNBP		
Allele	Count	Frequency	Allele	Count	Frequency	Allele	Count	Frequency	Allele	Count	Frequency	Allele	Count	Frequency
15	0	0.024*	15	0	0.016*	15	0	0.024*	15	0	0.021*	15	1	0.024*
14	0	0.038	14	3	0.016*	14	10	0.048	14	14	0.06	14	11	0.053
13	25	0.118	13	12	0.037	13	27	0.13	13	32	0.137	13	17	0.082
12	75	0.354	12	65	0.202	12	64	0.308	12	77	0.329	12	49	0.236
11	69	0.325	11	100	0.311	11	67	0.322	11	74	0.316	11	63	0.303
10	4	0.024*	10	46	0.143	10	5	0.024	10	7	0.03	10	18	0.087
9	12	0.057	9	34	0.106	9	19	0.091	9	13	0.056	9	15	0.072
8	19	0.09	8	62	0.193	8	16	0.077	8	17	0.073	8	34	0.163
7	0	0.024*	7	0	0.016*	7	0	0.024*	7	0	0.021*	7	0	0.024*
TOTAL	212		TOTAL	322		TOTAL	208		TOTAL	234		TOTAL	208	

TABLE 4—D21S11 population databases.

US CAUCASIANS											
NCSBI			VDFS			PC/BT			PBSO		
Allele	Count	Frequency	Allele	Count	Frequency	Allele	Count	Frequency	Allele	Count	Frequency
35.2	0	0.007*	35.2	1	0.014*	35.2	0	0.015*	35.2	0	0.023*
35	0	0.007*	35	0	0.014*	35	0	0.015*	35	0	0.023*
34.2	3	0.007*	34.2	3	0.014*	34.2	1	0.015*	34.2	0	0.023*
34	0	0.007*	34	0	0.014*	34	0	0.015*	34	0	0.023*
33.2	20	0.029	33.2	13	0.038	33.2	8	0.023	33.2	5	0.023
33	0	0.007*	33	0	0.014*	33	0	0.015*	33	2	0.023*
32.2	63	0.093	32.2	43	0.124	32.2	32	0.093	32.2	16	0.073
32.1	0	0.007*	32.1	1	0.014*	32.1	0	0.015*	32.1	0	0.023*
32	7	0.01	32	8	0.023	32	5	0.015	32	1	0.023*
31.2	56	0.063	31.2	27	0.078	31.2	30	0.087	31.2	18	0.083
31	44	0.065	31	24	0.069	31	18	0.052	31	8	0.037
30.2	24	0.035	30.2	13	0.038	30.2	15	0.044	30.2	5	0.023
30	177	0.261	30	91	0.263	30	77	0.224	30	68	0.312
29.2	0	0.007*	29.2	0	0.014*	29.2	0	0.015*	29.2	1	0.023*
29	140	0.206	29	73	0.211	29	89	0.259	29	47	0.216
28	114	0.168	28	40	0.116	28	58	0.169	28	40	0.183
27	28	0.041	27	7	0.02	27	8	0.023	27	7	0.032
26	1	0.007*	26	0	0.014*	26	2	0.015*	26	0	0.023*
25.2	0	0.007*	25.2	1	0.014*	25.2	0	0.015*	25.2	0	0.023*
25	0	0.007*	25	1	0.014*	25	1	0.015*	25	0	0.023*
24.2	1	0.007*	24.2	0	0.014*	24.2	0	0.015*	24.2	0	0.023*
TOTAL	678		TOTAL	346		TOTAL	344		TOTAL	218	

* = Minimum allele frequency as recommended by the NRC II report.

TABLE 4—Continued.

US HISPANICS											
NCSBI/CMPD			VDFS			PC/BT			PBSO		
Allele	Count	Frequency	Allele	Count	Frequency	Allele	Count	Frequency	Allele	Count	Frequency
37	0	0.016*	37	0	0.014*	37	0	0.012*	37	1	0.026*
36	0	0.016*	36	1	0.014*	36	0	0.012*	36	0	0.026*
35	2	0.016*	35	3	0.014*	35	3	0.012*	35	0	0.026*
34.2	3	0.016*	34.2	2	0.014*	34.2	2	0.012*	34.2	1	0.026*
34	0	0.016*	34	1	0.014*	34	0	0.012*	34	0	0.026*
33.2	16	0.052	33.2	16	0.044	33.2	18	0.043	33.2	6	0.031
33	2	0.016*	33	0	0.014*	33	1	0.012*	33	0	0.026*
32.2	39	0.127	32.2	46	0.126	32.2	59	0.140	32.2	25	0.128
32	4	0.016*	32	5	0.014	32	2	0.012*	32	1	0.026*
31.2	29	0.094	31.2	42	0.115	31.2	38	0.090	31.2	21	0.107
31	15	0.049	31	30	0.082	31	26	0.062	31	12	0.061
30.2	13	0.042	30.2	4	0.014*	30.2	11	0.026	30.2	6	0.031
30	86	0.279	30	88	0.24	30	117	0.277	30	52	0.265
29.2	2	0.016*	29.2	1	0.014*	29.2	2	0.012*	29.2	0	0.026*
29	63	0.205	29	78	0.213	29	97	0.230	29	41	0.209
28.2	0	0.016*	28.2	0	0.014*	28.2	0	0.012*	28.2	0	0.026*
28	33	0.107	28	42	0.115	28	39	0.092	28	26	0.133
27	0	0.016*	27	7	0.019	27	7	0.017	27	3	0.026*
26	1	0.016*	26	0	0.014*	26	0	0.012*	26	1	0.026*
TOTAL	308		TOTAL	366		TOTAL	422		TOTAL	196	

TABLE 4—Continued.

US AFRICAN-AMERICANS											
NCSBI			VDFS			PC/BT			PBSO		
Allele	Count	Frequency	Allele	Count	Frequency	Allele	Count	Frequency	Allele	Count	Frequency
38	0	0.007*	38	0	0.013*	38	1	0.018*	38	1	0.025*
37	0	0.007*	37	0	0.013*	37	1	0.018*	37	0	0.025*
36	6	0.009	36	3	0.013*	36	2	0.018*	36	1	0.025*
35	27	0.039	35	11	0.029	35	12	0.043	35	9	0.045
34.2	3	0.007*	34.2	0	0.013*	34.2	1	0.018*	34.2	0	0.025*
34	2	0.007*	34	4	0.013*	34	2	0.018*	34	3	0.025*
33.2	26	0.037	33.2	11	0.029	33.2	6	0.022	33.2	5	0.025
33.1	3	0.007*	33.1	0	0.013*	33.1	0	0.018*	33.1	0	0.025*
33	2	0.007*	33	3	0.013*	32	2	0.018*	32	3	0.025*
32.2	42	0.06	32.2	30	0.078	32.2	19	0.069	32.2	15	0.075
32	6	0.009	32	3	0.013*	32	2	0.018*	32	5	0.025
31.2	37	0.053	31.2	19	0.049	31.2	16	0.058	31.2	13	0.065
31	55	0.079	31	26	0.068	31	24	0.087	31	14	0.07
30.2	15	0.022	30.2	7	0.018	30.2	5	0.018	30.2	2	0.025*
30	122	0.175	30	74	0.193	30	42	0.152	30	47	0.235
29.2	0	0.007*	29.2	0	0.013*	29.2	1	0.018*	29.2	0	0.025*
29	151	0.217	29	79	0.206	29	57	0.207	29	36	0.18
28.2	1	0.007*	28.2	0	0.013*	28.2	0	0.018*	28.2	1	0.025*
28	170	0.244	28	97	0.253	28	68	0.246	28	35	0.175
27	25	0.036	27	16	0.042	27	14	0.051	27	10	0.005*
26	0	0.007*	26	1	0.013*	26	1	0.018*	26	0	0.025*
25.2	1	0.007*	25.2	0	0.013*	25.2	0	0.018*	25.2	0	0.025*
24.3	1	0.007*	24.3	0	0.013*	24.3	0	0.018*	24.3	0	0.025*
24.2	1	0.007*	24.2	0	0.013*	24.2	0	0.018*	24.2	0	0.025*
TOTAL	696		TOTAL	384		TOTAL	276		TOTAL	200	

TABLE 4—Continued.

OTHERS														
NCSBI-LUMBEE INDIAN			PC/BT-ASIAN			PBSO-BCWP			PBSO-RBP			PBSO-RNBP		
Allele	Count	Frequency	Allele	Count	Frequency	Allele	Count	Frequency	Allele	Count	Frequency	Allele	Count	Frequency
36	0	0.024*	36	0	0.016*	36	1	0.025*	36	1	0.024*	36	0	0.024*
35.2	0	0.024*	35.2	0	0.016*	35.2	1	0.025*	35.2	0	0.024*	35.2	0	0.024*
35	1	0.024*	35	0	0.016*	35	1	0.025*	35	5	0.024	35	2	0.024*
34.2	0	0.024*	34.2	7	0.022	34.2	1	0.025*	34.2	0	0.024*	34.2	3	0.024*
34.1	0	0.024*	34.1	1	0.016*	34.1	0	0.025*	34.1	0	0.024*	34.1	0	0.024*
34	1	0.024*	34	0	0.016*	34	0	0.025*	34	1	0.024*	34	1	0.024*
33.2	17	0.08	33.2	21	0.065	33.2	12	0.059	33.2	12	0.057	33.2	7	0.034
33	0	0.024*	33	1	0.016*	33	0	0.025*	33	0	0.024*	33	0	0.024*
32.2	17	0.08	32.2	32	0.099	32.2	16	0.078	32.2	13	0.062	32.2	20	0.096
32	2	0.024*	32	16	0.050	32	3	0.025*	32	1	0.024*	32	3	0.024*
31.2	13	0.061	31.2	25	0.078	31.2	20	0.098	31.2	18	0.086	31.2	30	0.144
31	10	0.047	31	29	0.090	31	21	0.103	31	11	0.052	31	8	0.038
30.2	5	0.024	30.2	5	0.016	30.2	8	0.039	30.2	5	0.024	30.2	4	0.024*
30	56	0.264	30	65	0.202	30	49	0.24	30	51	0.243	30	48	0.231
29.2	0	0.024*	29.2	0	0.016*	29.2	0	0.025*	29.2	1	0.024*	29.2	0	0.024*
29	35	0.165	29	89	0.276	29	43	0.211	29	43	0.205	29	40	0.192
28	49	0.231	28	29	0.090	28	23	0.113	28	36	0.171	28	36	0.173
27	4	0.024*	27	2	0.016*	27	5	0.025	27	12	0.057	27	4	0.024*
26	1	0.024*	26	0	0.016*	26	0	0.025*	26	0	0.024*	26	1	0.024*
24.2	1	0.024*	24.2	0	0.016*	24.2	0	0.025*	24.2	0	0.024*	24.2	1	0.024*
TOTAL	212		TOTAL	322		TOTAL	204		TOTAL	210		TOTAL	208	

TABLE 5—*D18S51 population databases.*

US CAUCASIANS											
NCSBI			VDFS			PC/BT			PBSO		
Allele	Count	Frequency	Allele	Count	Frequency	Allele	Count	Frequency	Allele	Count	Frequency
23	3	0.007*	23	0	0.014*	23	0	0.015*	23	0	0.023*
22	5	0.007	22	2	0.014*	22	2	0.015*	22	0	0.023*
21	4	0.007*	21	1	0.014*	21	5	0.015	21	2	0.023*
20	13	0.019	20	5	0.014	20	7	0.020	20	4	0.023*
19	30	0.044	19	6	0.017	19	16	0.047	19	10	0.046
18	46	0.068	18	25	0.072	18	20	0.058	18	12	0.055
17	71	0.105	17	51	0.147	17	53	0.154	17	26	0.119
16	85	0.125	16	47	0.136	16	37	0.108	16	26	0.119
15	114	0.168	15	55	0.159	15	56	0.163	15	38	0.174
14	94	0.139	14	55	0.159	14	50	0.145	14	30	0.138
13.2	1	0.007*	13.2	0	0.014*	13.2	1	0.015*	13.2	0	0.023*
13	90	0.133	13	49	0.142	13	49	0.142	13	31	0.142
12	106	0.156	12	43	0.124	12	43	0.125	12	35	0.161
11	11	0.016	11	6	0.017	11	3	0.015*	11	2	0.023*
10.2	0	0.007*	10.2	0	0.014*	10.2	1	0.015*	10.2	1	0.023*
10	5	0.007	10	1	0.014*	10	1	0.015*	10	1	0.023*
TOTAL	578		TOTAL	346		TOTAL	344		TOTAL	218	

* = Minimum allele frequency as recommended by the NRC II report.

TABLE 5—*Continued.*

US HISPANICS											
NCSBI/CMPD			VDFS			PC/BT			PBSO		
Allele	Count	Frequency	Allele	Count	Frequency	Allele	Count	Frequency	Allele	Count	Frequency
25	0	0.016*	25	0	0.014*	25	1	0.012*	25	0	0.026*
24	0	0.016*	24	0	0.014*	24	0	0.012*	24	0	0.026*
23	0	0.016*	23	2	0.014*	23	1	0.012*	23	0	0.026*
22	3	0.016*	22	1	0.014*	22	3	0.012*	22	1	0.026*
21	2	0.016*	21	1	0.014*	21	7	0.017	21	4	0.026*
20	7	0.023	20	10	0.027	20	7	0.017	20	6	0.031
19	12	0.039	19	23	0.063	19	16	0.038	19	9	0.046
18	21	0.068	18	26	0.071	18	28	0.067	18	10	0.051
17	45	0.146	17	55	0.15	17	98	0.233	17	24	0.122
16	34	0.11	16	43	0.117	16	49	0.117	16	33	0.168
15	51	0.166	15	51	0.139	15	52	0.124	15	33	0.168
14	50	0.162	14	60	0.164	14	64	0.152	14	31	0.158
13	41	0.133	13	51	0.139	13	42	0.100	13	17	0.087
12	34	0.11	12	37	0.101	12	45	0.107	12	24	0.122
11	4	0.016*	11	4	0.014*	11	4	0.012*	11	2	0.026*
10.2	0	0.016*	10.2	1	0.014*	10.2	0	0.012*	10.2	0	0.026*
10	4	0.016*	10	1	0.014*	10	2	0.012*	10	2	0.026*
9	0	0.016*	9	0	0.014*	9	1	0.012*	9	0	0.026*
TOTAL	308		TOTAL	366		TOTAL	420		TOTAL	196	

TABLE 5—Continued.

US AFRICAN-AMERICANS											
NCSBI			VDFS			PC/BT			PBSO		
Allele	Count	Frequency	Allele	Count	Frequency	Allele	Count	Frequency	Allele	Count	Frequency
24	1	0.007*	24	0	0.013*	24	0	0.018*	24	0	0.025*
23.2	1	0.007*	23.2	0	0.013*	23.2	0	0.018*	23.2	0	0.025*
23	4	0.007*	23	1	0.013*	23	0	0.018*	23	2	0.025*
22.2	1	0.007*	22.2	0	0.013*	22.2	0	0.018*	22.2	0	0.025*
22	7	0.01	22	4	0.013*	22	2	0.018*	22	3	0.025*
21	16	0.023	21	6	0.016	21	3	0.018*	21	1	0.025*
20.2	1	0.007*	20.2	0	0.013*	20.2	0	0.018*	20.2	0	0.025*
20	29	0.042	20	18	0.047	20	15	0.054	20	11	0.085
19	60	0.086	19	28	0.073	19	27	0.097	19	17	0.085
18	77	0.111	18	46	0.12	18	26	0.094	18	28	0.14
17.2	1	0.007*	17.2	0	0.013*	17.2	0	0.018*	17.2	0	0.025*
17	109	0.157	17	60	0.156	17	47	0.169	17	27	0.135
16	124	0.179	16	68	0.177	16	48	0.173	16	39	0.195
15.2	2	0.007*	15.2	0	0.013*	15.2	0	0.018*	15.2	0	0.025*
15	105	0.151	15	66	0.172	15	56	0.201	15	32	0.16
14.2	5	0.007	14.2	0	0.013*	14.2	1	0.018*	14.2	0	0.025*
14	55	0.079	14	25	0.065	14	18	0.065	14	14	0.07
13.2	6	0.009	13.2	1	0.013*	13.2	0	0.018*	13.2	0	0.025*
13	35	0.05	13	27	0.07	13	15	0.054	13	11	0.055
12	40	0.058	12	28	0.073	12	19	0.068	12	11	0.055
11	9	0.013	11	0	0.013*	11	0	0.018*	11	3	0.025*
10.2	1	0.007*	10.2	3	0.013*	10.2	1	0.018*	10.2	0	0.025*
10	4	0.007*	10	3	0.013*	10	0	0.018*	10	0	0.025*
9	1	0.007*	9	0	0.013*	9	0	0.018*	9	1	0.025*
TOTAL	694		TOTAL	384		TOTAL	278		TOTAL	200	

TABLE 5—Continued.

OTHERS														
NCSBI-LUMBEE INDIAN			PC/BT-ASIAN			PBSO-BCWP			PBSO-RBP			PBSO-RNBP		
Allele	Count	Frequency	Allele	Count	Frequency	Allele	Count	Frequency	Allele	Count	Frequency	Allele	Count	Frequency
24	0	0.024*	24	0	0.016*	24	0	0.025*	24	0	0.024*	24	0	0.024*
23	1	0.024*	23	2	0.016*	23	0	0.025*	23	0	0.024*	23	0	0.024*
22	0	0.024*	22	3	0.016*	22	0	0.025*	22	2	0.024*	22	0	0.024*
21	1	0.024*	21	5	0.016	21	3	0.025*	21	3	0.024*	21	0	0.024*
20	5	0.024	20	14	0.043	20	3	0.025*	20	12	0.057	20	6	0.029
19	17	0.08	19	10	0.031	19	10	0.049	19	18	0.086	19	10	0.048
18.2	0	0.024*	18.2	0	0.016*	18.2	0	0.025*	18.2	1	0.024*	18.2	0	0.024*
18	16	0.075	18	15	0.047	18	22	0.108	18	25	0.119	18	15	0.072
17	36	0.17	17	54	0.168	17	27	0.132	17	22	0.105	17	15	0.072
16	17	0.08	16	26	0.081	16	27	0.132	16	41	0.195	16	32	0.154
15	32	0.151	15	74	0.230	15	30	0.147	15	29	0.138	15	32	0.154
14.2	0	0.024*	14.2	0	0.016*	14.2	0	0.025*	14.2	1	0.024*	14.2	0	0.024*
14	18	0.085	14	47	0.146	14	36	0.176	14	26	0.124	14	40	0.192
13.2	0	0.024*	13.2	0	0.016*	13.2	0	0.025*	13.2	1	0.024*	13.2	1	0.024*
13	21	0.099	13	41	0.127	13	22	0.108	13	17	0.081	13	28	0.135
12	41	0.193	12	30	0.093	12	19	0.093	12	8	0.038	12	26	0.125
11	5	0.024	11	1	0.016*	11	3	0.025*	11	3	0.024*	11	0	0.024*
10.2	0	0.024*	10.2	0	0.016*	10.2	0	0.025*	10.2	0	0.024*	10.2	0	0.024*
10	2	0.024*	10	0	0.016*	10	2	0.025*	10	1	0.024*	10	3	0.024*
TOTAL	212		TOTAL	322		TOTAL	204		TOTAL	210		TOTAL	208	

TABLE 6—D8S1179 population databases.

US CAUCASIANS											
NCSBI			VDFS			PC/BT			PBSO		
Allele	Count	Frequency	Allele	Count	Frequency	Allele	Count	Frequency	Allele	Count	Frequency
18	0	0.007*	18	0	0.014*	18	0	0.015*	18	0	0.023*
17	1	0.007*	17	3	0.014*	17	2	0.015*	17	0	0.023*
16	22	0.032	16	12	0.035	16	8	0.023	16	7	0.032
15	60	0.088	15	31	0.09	15	30	0.087	15	11	0.05
14	136	0.201	14	68	0.197	14	64	0.186	14	41	0.188
13	209	0.308	13	107	0.309	13	109	0.317	13	77	0.353
12	97	0.143	12	49	0.142	12	59	0.172	12	34	0.156
11.3	1	0.007*	11.3	0	0.014*	11.3	0	0.015*	11.3	0	0.023*
11	60	0.088	11	32	0.092	11	26	0.076	11	22	0.101
10	72	0.106	10	37	0.107	10	37	0.108	10	20	0.092
9	8	0.012	9	2	0.014*	9	5	0.015	9	2	0.023*
8	12	0.018	8	5	0.014	8	4	0.015*	8	4	0.023*
7	0	0.007*	7	0	0.014*	7	0	0.015*	7	0	0.023*
TOTAL	678		TOTAL	346		TOTAL	344		TOTAL	218	

* = Minimum allele frequency as recommended by the NRC II report.

TABLE 6—Continued.

US HISPANICS											
NCSBI/CMPD			VDFS			PC/BT			PBSO		
Allele	Count	Frequency	Allele	Count	Frequency	Allele	Count	Frequency	Allele	Count	Frequency
18	0	0.016*	18	0	0.014*	18	0	0.012*	18	0	0.026*
17	3	0.016*	17	0	0.014*	17	1	0.012*	17	0	0.026*
16	10	0.032	16	17	0.046	16	10	0.024	16	3	0.026*
15	41	0.133	15	44	0.12	15	56	0.133	15	22	0.112
14	69	0.224	14	96	0.262	14	129	0.306	14	51	0.26
13	98	0.318	13	118	0.322	13	117	0.277	13	67	0.342
12	41	0.133	12	40	0.109	12	53	0.126	12	19	0.097
11	15	0.049	11	17	0.046	11	22	0.052	11	6	0.031
10	29	0.094	10	30	0.082	10	32	0.076	10	24	0.122
9	2	0.016*	9	1	0.014*	9	0	0.012*	9	1	0.026*
8	0	0.016*	8	3	0.014*	8	2	0.012*	8	3	0.026*
7	0	0.016*	7	0	0.014*	7	0	0.012*	7	0	0.026*
TOTAL	308		TOTAL	366		TOTAL	422		TOTAL	196	

TABLE 6—Continued.

US AFRICAN-AMERICANS											
NCSBI			VDFS			PC/BT			PBSO		
Allele	Count	Frequency	Allele	Count	Frequency	Allele	Count	Frequency	Allele	Count	Frequency
22	0	0.007*	22	0	0.013*	22	0	0.018*	22	0	0.025*
21	0	0.007*	21	0	0.013*	21	0	0.018*	21	0	0.025*
20	0	0.007*	20	0	0.013*	20	0	0.018*	20	0	0.025*
19	0	0.007*	19	0	0.013*	19	0	0.018*	19	0	0.025*
18	2	0.007*	18	0	0.013*	18	1	0.018*	18	1	0.025*
17	9	0.013	17	7	0.018	17	6	0.022	17	1	0.025*
16	43	0.062	16	23	0.06	16	15	0.054	16	9	0.045
15	146	0.21	15	71	0.185	15	44	0.158	15	35	0.175
14	220	0.316	14	114	0.297	14	110	0.396	14	71	0.355
13	144	0.207	13	93	0.242	13	53	0.191	13	36	0.18
12	77	0.111	12	42	0.109	12	28	0.101	12	26	0.13
11	32	0.046	11	19	0.049	11	7	0.025	11	13	0.065
10.2	0	0.007*	10.2	0	0.013*	10.2	0	0.018*	10.2	0	0.025*
10	17	0.024	10	11	0.029	10	10	0.036	10	6	0.03
9.2	0	0.007*	9.2	0	0.013*	9.2	0	0.018*	9.2	0	0.025*
9	2	0.007*	9	2	0.013*	9	4	0.018*	9	1	0.025*
8	4	0.007*	8	2	0.013*	8	0	0.018*	8	1	0.025*
7	0	0.007*	7	0	0.013*	7	0	0.018*	7	0	0.025*
TOTAL	696		TOTAL	384		TOTAL	278		TOTAL	200	

TABLE 6—Continued.

OTHERS														
NCSBI-LUMBEE INDIAN			PC/BT-ASIAN			PBSO-BCWP			PBSO-RBP			PBSO-RNBP		
Allele	Count	Frequency	Allele	Count	Frequency	Allele	Count	Frequency	Allele	Count	Frequency	Allele	Count	Frequency
18	0	0.024*	18	5	0.016	18	0	0.025*	18	0	0.024*	18	0	0.024*
17	0	0.024*	17	5	0.016	17	2	0.025*	17	2	0.024*	17	0	0.024*
16	3	0.024*	16	18	0.056	16	7	0.034	16	12	0.057	16	5	0.024
15	30	0.142	15	44	0.137	15	26	0.127	15	37	0.176	15	26	0.125
14	37	0.175	14	64	0.199	14	55	0.27	14	62	0.295	14	47	0.226
13	86	0.406	13	92	0.286	13	51	0.25	13	56	0.267	13	69	0.332
12	26	0.123	12	17	0.053	12	25	0.123	12	21	0.1	12	22	0.106
11	17	0.08	11	25	0.078	11	17	0.083	11	11	0.052	11	26	0.125
10.2	0	0.024*	10.2	0	0.016*	10.2	0	0.025*	10.2	0	0.024*	10.2	0	0.024*
10	11	0.052	10	51	0.158	10	20	0.098	10	8	0.038	10	8	0.038
9.2	0	0.024*	9.2	0	0.016*	9.2	0	0.025*	9.2	0	0.024*	9.2	0	0.024*
9	0	0.024*	9	0	0.016*	9	0	0.025*	9	1	0.024*	9	4	0.024*
8	2	0.024*	8	1	0.016*	8	1	0.025*	8	0	0.024*	8	1	0.024*
TOTAL	212		TOTAL	322		TOTAL	204		TOTAL	210		TOTAL	208	

TABLE 7—D3S1358 population databases.

US CAUCASIANS											
NCSBI			VDFS			PC/BT			PBSO		
Allele	Count	Frequency	Allele	Count	Frequency	Allele	Count	Frequency	Allele	Count	Frequency
21	0	0.007*	21	0	0.014*	21	0	0.015*	21	0	0.023*
20	1	0.007*	20	2	0.014*	20	1	0.015*	20	0	0.023*
19	8	0.012	19	7	0.02	19	4	0.015*	19	4	0.023*
18	103	0.152	18	51	0.147	18	47	0.137	18	28	0.128
17	140	0.206	17	66	0.191	17	74	0.215	17	40	0.183
16.2	0	0.007*	16.2	0	0.014*	16.2	0	0.015*	16.2	0	0.023*
16	155	0.229	16	89	0.257	16	83	0.241	16	55	0.252
15	172	0.254	15	82	0.237	15	91	0.265	15	61	0.28
14	94	0.139	14	48	0.139	14	42	0.122	14	28	0.128
13	4	0.007*	13	0	0.014*	13	2	0.015*	13	1	0.023*
12	0	0.007*	12	0	0.014*	12	0	0.015*	12	1	0.023*
<12	1	0.007*	11	1	0.014*	11	0	0.015*	11	0	0.023*
TOTAL	678		TOTAL	346		TOTAL	344		TOTAL	218	

* = Minimum allele frequency as recommended by the NRC II report.

TABLE 7—Continued.

US HISPANICS											
NCSBI/CMPD			VDFS			PC/BT			PBSO		
Allele	Count	Frequency	Allele	Count	Frequency	Allele	Count	Frequency	Allele	Count	Frequency
21	0	0.016*	21	1	0.014*	21	0	0.012*	21	0	0.026*
20	0	0.016*	20	0	0.014*	20	0	0.012*	20	0	0.026*
19	0	0.016*	19	3	0.014*	19	4	0.012*	19	0	0.026*
18	27	0.008	18	30	0.082	18	32	0.076	18	25	0.128
17	43	0.14	17	69	0.189	17	64	0.152	17	29	0.148
16.2	0	0.016*	16.2	0	0.014*	16.2	0	0.012*	16.2	0	0.026*
16	87	0.262	16	93	0.254	16	120	0.286	16	50	0.255
15	128	0.416	15	143	0.391	15	160	0.381	15	76	0.388
14	20	0.065	14	26	0.071	14	36	0.086	14	13	0.066
13	3	0.016*	13	1	0.014*	13	3	0.012*	13	1	0.026*
12	0	0.016*	12	0	0.014*	12	1	0.012*	12	1	0.026*
11	0	0.016*	11	0	0.014*	11	0	0.012*	11	1	0.026*
TOTAL	308		TOTAL	366		TOTAL	420		TOTAL	196	

TABLE 7—Continued.

US AFRICAN-AMERICANS											
NCSBI			VDFS			PC/BT			PBSO		
Allele	Count	Frequency	Allele	Count	Frequency	Allele	Count	Frequency	Allele	Count	Frequency
21	0	0.007*	21	0	0.013*	21	0	0.018*	21	0	0.025*
20	0	0.007*	20	0	0.013*	20	1	0.018*	20	0	0.025*
19	7	0.01	19	1	0.013*	19	0	0.018*	19	1	0.025*
18	42	0.06	18	21	0.055	18	15	0.054	18	13	0.065
17	126	0.181	17	81	0.211	17	53	0.191	17	40	0.2
16.2	0	0.007*	16.2	1	0.013*	16.2	0	0.018*	16.2	0	0.025*
16	242	0.348	16	103	0.268	16	92	0.331	16	61	0.305
15	210	0.302	15	124	0.323	15	84	0.302	15	62	0.31
14	61	0.088	14	45	0.117	14	27	0.097	14	19	0.095
13	3	0.007*	13	4	0.013*	13	5	0.018	13	1	0.025*
12	4	0.007*	12	3	0.013*	12	1	0.018*	12	3	0.025*
>12	1	0.007*	11	1	0.013*	11	0	0.018*	11	0	0.025*
TOTAL	696		TOTAL	384		TOTAL	278		TOTAL	200	

TABLE 7—Continued.

OTHERS														
NCSBI-LUMBEE INDIAN			PC/BT-ASIAN			PBSO-BCWP			PBSO-RBP			PBSO-RNBP		
Allele	Count	Frequency	Allele	Count	Frequency	Allele	Count	Frequency	Allele	Count	Frequency	Allele	Count	Frequency
20	0	0.024*	20	0	0.016*	20	0	0.025*	20	0	0.024*	20	0	0.024*
19	0	0.024*	19	0	0.016*	19	1	0.025*	19	0	0.024*	19	5	0.024
18	29	0.137	18	34	0.106	18	37	0.181	18	16	0.076	18	27	0.13
17	26	0.123	17	84	0.261	17	38	0.186	17	35	0.167	17	44	0.212
16	60	0.283	16	104	0.323	16	52	0.255	16	69	0.329	16	44	0.212
15	83	0.392	15	87	0.270	15	60	0.294	15	66	0.314	15	58	0.279
14	13	0.061	14	13	0.040	14	13	0.064	14	21	0.1	14	29	0.139
13	1	0.024*	13	0	0.016*	13	1	0.025*	13	3	0.024*	13	0	0.024*
12	0	0.024*	12	0	0.016*	12	2	0.025*	12	0	0.024*	12	1	0.024*
TOTAL	212		TOTAL	322		TOTAL	204		TOTAL	210		TOTAL	208	

TABLE 8—D7S820 population databases.

US CAUCASIANS											
NCSBI			VDFS			PC/BT			PBSO		
Allele	Count	Frequency	Allele	Count	Frequency	Allele	Count	Frequency	Allele	Count	Frequency
>14	1	0.007*	>14	0	0.014*	>14	0	0.017*	>14	0	0.022*
14	12	0.017	14	3	0.014*	14	1	0.017*	14	1	0.022*
13	22	0.032	13	8	0.023	13	9	0.030	13	6	0.026
12	98	0.142	12	54	0.155	12	32	0.106	12	43	0.185
11	131	0.19	11	66	0.19	11	64	0.212	11	51	0.22
10	163	0.236	10	108	0.31	10	96	0.318	10	61	0.263
9	124	0.18	9	47	0.135	9	54	0.179	9	27	0.116
8	123	0.178	8	52	0.149	8	44	0.146	8	35	0.151
7	15	0.022	7	10	0.029	7	2	0.017*	7	8	0.034
6	1	0.007*	6	0*	0.014*	6	0	0.017*	6	0	0.022*
TOTAL	690		TOTAL	348		TOTAL	302		TOTAL	232	

* = Minimum allele frequency as recommended by the NRC II report.

TABLE 8—Continued.

US HISPANICS											
NCSBI/MPD			VDFS			PC/BT			PBSO		
Allele	Count	Frequency	Allele	Count	Frequency	Allele	Count	Frequency	Allele	Count	Frequency
14	2	0.016*	14	4	0.014*	14	3	0.017*	14	0	0.026*
13	19	0.062	13	6	0.017	13	18	0.061	13	5	0.026
12	53	0.172	12	72	0.199	12	58	0.197	12	43	0.219
11	97	0.315	11	94	0.26	11	78	0.265	11	57	0.291
10.3	1	0.016*	10.3	0	0.014*	10.3	0	0.017*	10.3	0	0.026*
10	78	0.253	10	94	0.26	10	70	0.238	10	47	0.24
9	21	0.068	9	34	0.094	9	26	0.088	9	24	0.122
8	32	0.104	8	55	0.152	8	37	0.126	8	17	0.087
7	5	0.016	7	3	0.014*	7	4	0.017*	7	3	0.026*
6	0	0.016*	6	0	0.014*	6	0	0.017*	6	0	0.026*
TOTAL	308		TOTAL	362		TOTAL	294		TOTAL	196	

TABLE 8—Continued.

US AFRICAN-AMERICANS											
NCSBI			VDFS			PC/BT			PBSO		
Allele	Count	Frequency	Allele	Count	Frequency	Allele	Count	Frequency	Allele	Count	Frequency
14	3	0.007*	14	1	0.013*	14	0	0.018*	14	2	0.025*
13	14	0.02	13	7	0.018	13	6	0.022	13	1	0.025*
12	70	0.1	12	41	0.106	12	24	0.086	12	25	0.125
11	161	0.23	11	90	0.232	11	57	0.205	11	43	0.215
10	246	0.351	10	132	0.34	10	93	0.335	10	73	0.365
9	73	0.104	9	41	0.106	9	29	0.104	9	20	0.1
8	121	0.173	8	73	0.188	8	68	0.245	8	34	0.17
7	11	0.016	7	3	0.013*	7	1	0.018*	7	1	0.025*
6	1	0.007*	6	0	0.013*	6	0	0.018*	6	1	0.025*
TOTAL	700		TOTAL	388		TOTAL	278		TOTAL	200	

TABLE 8—Continued.

OTHERS														
NCSBI-LUMBEE INDIAN			PC/BT-ASIAN			PBSO-BCWP			PBSO-RBP			PBSO-RNBP		
Allele	Count	Frequency	Allele	Count	Frequency	Allele	Count	Frequency	Allele	Count	Frequency	Allele	Count	Frequency
14	1	0.024*	14	2	0.016*	14	1	0.024*	14	0	0.021*	14	1	0.024*
13	3	0.024*	13	8	0.025	13	6	0.029	13	5	0.021	13	5	0.024
12	18	0.085	12	76	0.236	12	36	0.173	12	32	0.137	12	33	0.159
11	62	0.292	11	108	0.335	11	51	0.245	11	50	0.214	11	39	0.188
10.3	0	0.024*	10.3	1	0.016*	10.3	0	0.024*	10.3	0	0.021*	10.3	0	0.024*
10	45	0.212	10	57	0.177	10	56	0.269	10	68	0.291	10	61	0.293
9.1	0	0.024*	9.1	0	0.016*	9.1	0	0.024*	9.1	0	0.021*	9.1	0	0.024*
9	41	0.193	9	22	0.068	9	20	0.096	9	32	0.137	9	30	0.144
8	39	0.184	8	46	0.143	8	33	0.159	8	44	0.188	8	34	0.163
7	3	0.024*	7	2	0.016*	7	5	0.024	7	2	0.021*	7	5	0.024
6	0	0.024*	6	0	0.016*	6	0	0.024*	6	1	0.021*	6	0	0.024*
TOTAL	212		TOTAL	322		TOTAL	208		TOTAL	234		TOTAL	208	

TABLE 9—D5S818 population databases.

US CAUCASIANS											
NCSBI			VDFS			PC/BT			PBSO		
Allele	Count	Frequency	Allele	Count	Frequency	Allele	Count	Frequency	Allele	Count	Frequency
16	0	0.007*	16	0	0.014*	16	0	0.017*	16	0	0.022*
15	1	0.007*	15	0	0.014*	15	0	0.017*	15	0	0.022*
14	7	0.01	14	8	0.023	14	5	0.017	14	2	0.022*
13	112	0.162	13	55	0.158	13	53	0.177	13	36	0.155
12	271	0.393	12	121	0.348	12	111	0.370	12	82	0.353
11	224	0.325	11	128	0.368	11	110	0.367	11	94	0.405
10	43	0.062	10	20	0.057	10	6	0.020	10	16	0.069
9	28	0.041	9	15	0.043	9	14	0.047	9	1	0.022*
8	3	0.007*	8	1	0.014*	8	1	0.017*	8	1	0.022*
7	1	0.007*	7	0	0.014*	7	0	0.017*	7	0	0.022*
TOTAL	690		TOTAL	348		TOTAL	300		TOTAL	232	

* = Minimum allele frequency as recommended by the NRC II report.

TABLE 9—Continued.

US HISPANICS											
NCSBI/CMPD			VDFS			PC/BT			PBSO		
Allele	Count	Frequency	Allele	Count	Frequency	Allele	Count	Frequency	Allele	Count	Frequency
15	0	0.016*	15	0	0.014*	15	0	0.016*	15	0	0.026*
14	1	0.016*	14	3	0.014*	14	3	0.016*	14	2	0.026*
13	31	0.101	13	58	0.16	13	36	0.115	13	17	0.087
12	95	0.308	12	104	0.287	12	86	0.276	12	63	0.321
11	133	0.432	11	126	0.348	11	133	0.426	11	88	0.449
10	20	0.065	10	21	0.058	10	14	0.045	10	3	0.026*
9	16	0.052	9	27	0.075	9	19	0.061	9	13	0.066
8	2	0.016*	8	5	0.014	8	4	0.016*	8	3	0.026*
7	10	0.032	7	18	0.05	7	17	0.054	7	7	0.036
TOTAL	308		TOTAL	362		TOTAL	312		TOTAL	196	

TABLE 9—Continued.

US AFRICAN-AMERICANS											
NCSBI			VDFS			PC/BT			PBSO		
Allele	Count	Frequency	Allele	Count	Frequency	Allele	Count	Frequency	Allele	Count	Frequency
16	0	0.007*	16	0	0.013*	16	1	0.018*	16	0	0.025*
15	0	0.007*	15	0	0.013*	15	2	0.018*	15	0	0.025*
14	9	0.013	14	10	0.026	14	1	0.018*	14	11	0.055
13	163	0.232	13	89	0.229	13	71	0.255	13	49	0.245
12	251	0.358	12	141	0.363	12	100	0.360	12	64	0.32
11	171	0.244	11	99	0.255	11	68	0.245	11	46	0.23
10	52	0.074	10	26	0.067	10	14	0.050	10	14	0.07
9	12	0.017	9	8	0.021	9	9	0.032	9	4	0.025*
8	40	0.057	8	15	0.039	8	12	0.043	8	11	0.055
7	4	0.007*	7	0	0.013*	7	0	0.018*	7	1	0.025*
TOTAL	702		TOTAL	388		TOTAL	278		TOTAL	200	1

TABLE 9—Continued.

OTHERS														
NCSBI-LUMBEE INDIAN			PC/BT-ASIAN			PBSO-BCWP			PBSO-RBP			PBSO-RNBP		
Allele	Count	Frequency	Allele	Count	Frequency	Allele	Count	Frequency	Allele	Count	Frequency	Allele	Count	Frequency
15	0	0.024*	15	0	0.016*	15	0	0.024*	15	0	0.021*	15	0	0.024*
14	2	0.024*	14	1	0.016*	14	4	0.024*	14	5	0.021	14	4	0.024*
13	39	0.186	13	54	0.168	13	24	0.115	13	44	0.188	13	35	0.168
12	82	0.39	12	90	0.280	12	75	0.361	12	79	0.338	12	74	0.356
11	66	0.314	11	93	0.289	11	76	0.365	11	72	0.308	11	75	0.361
10	4	0.024*	10	64	0.199	10	14	0.067	10	17	0.073	10	12	0.058
9	10	0.048	9	15	0.047	9	5	0.024	9	6	0.026	9	7	0.034
8	3	0.024*	8	1	0.016*	8	5	0.024	8	7	0.03	8	0	0.024*
7	4	0.024*	7	4	0.016*	7	5	0.024	7	4	0.021*	7	1	0.024*
TOTAL	210		TOTAL	322		TOTAL	208		TOTAL	234		TOTAL	208	

TABLE 10—HUMVWA population databases.

US CAUCASIANS											
NCSBI			VDFS			PC/BT			PBSO		
Allele	Count	Frequency	Allele	Count	Frequency	Allele	Count	Frequency	Allele	Count	Frequency
21	0	0.007*	21	0	0.014*	21	0	0.015*	21	0	0.023*
20	10	0.015	20	2	0.014*	20	7	0.020	20	3	0.023*
19	63	0.092	19	29	0.083	19	24	0.070	19	22	0.101
18	134	0.195	18	81	0.233	18	65	0.190	18	40	0.183
17	195	0.283	17	96	0.276	17	90	0.263	17	63	0.289
16	145	0.211	16	73	0.21	16	78	0.228	16	50	0.229
15	68	0.099	15	33	0.095	15	41	0.120	15	21	0.096
14	72	0.105	14	33	0.095	14	37	0.108	14	17	0.078
13	1	0.007*	13	1	0.014*	13	0	0.015*	13	2	0.023*
12	0	0.007*	12	0	0.014*	12	0	0.015*	12	0	0.023*
11	0	0.007*	11	0	0.014*	11	0	0.015*	11	0	0.023*
TOTAL	688		TOTAL	348		TOTAL	342		TOTAL	218	

* = Minimum allele frequency as recommended by the NRC II report.

TABLE 10—Continued.

US HISPANICS											
NCSBI/CMPD			VDFS			PC/BT			PBSO		
Allele	Count	Frequency	Allele	Count	Frequency	Allele	Count	Frequency	Allele	Count	Frequency
21	0	0.016*	21	0	0.014*	21	0	0.012*	21	0	0.026*
20	3	0.016*	20	5	0.014	20	7	0.017	20	1	0.026*
19	28	0.091	19	24	0.066	19	30	0.071	19	13	0.066
18	49	0.159	18	52	0.144	18	69	0.164	18	38	0.194
17	86	0.279	17	89	0.246	17	112	0.267	17	61	0.311
16	109	0.354	16	106	0.293	16	127	0.302	16	49	0.25
15	17	0.055	15	53	0.146	15	45	0.107	15	21	0.107
14	15	0.049	14	31	0.086	14	29	0.069	14	11	0.056
13	1	0.016*	13	1	0.014*	13	1	0.012*	13	2	0.026*
12	0	0.016*	12	0	0.014*	12	0	0.012*	12	0	0.026*
11	0	0.016*	11	1	0.014*	11	0	0.012*	11	0	0.026*
TOTAL	308		TOTAL	362		TOTAL	420		TOTAL	196	

TABLE 10—Continued.

US AFRICAN-AMERICANS											
NCSBI			VDFS			PC/BT			PBSO		
Allele	Count	Frequency	Allele	Count	Frequency	Allele	Count	Frequency	Allele	Count	Frequency
21	5	0.007	21	1	0.013*	21	1	0.018*	21	1	0.025*
20	14	0.02	20	11	0.028	20	2	0.018*	20	6	0.03
19	55	0.078	19	28	0.072	19	20	0.072	19	12	0.06
18	81	0.115	18	44	0.113	18	27	0.097	18	25	0.125
17	136	0.194	17	61	0.157	17	50	0.180	17	38	0.19
16	190	0.271	16	110	0.284	16	75	0.270	16	54	0.27
15	154	0.219	15	96	0.247	15	77	0.277	15	46	0.23
14	46	0.066	14	29	0.075	14	15	0.054	14	15	0.075
13	14	0.02	13	6	0.015	13	10	0.036	13	3	0.025*
12	2	0.007*	12	0	0.013*	12	1	0.018*	12	0	0.025*
11	5	0.007	11	2	0.013*	11	0	0.018*	11	0	0.025*
TOTAL	702		TOTAL	388		TOTAL	278		TOTAL	200	

TABLE 10—Continued.

OTHERS														
NCSBI-LUMBEE INDIAN			PC/BT-ASIAN			PBSO-BCWP			PBSO-RBP			PBSO-RNBP		
Allele	Count	Frequency	Allele	Count	Frequency	Allele	Count	Frequency	Allele	Count	Frequency	Allele	Count	Frequency
21	0	0.024*	21	2	0.016*	21	1	0.025*	21	0	0.024*	21	0	0.024*
20	4	0.024*	20	3	0.016*	20	4	0.025*	20	2	0.024*	20	4	0.024*
19	21	0.099	19	25	0.078	19	15	0.074	19	5	0.024	19	15	0.072
18	35	0.165	18	66	0.202	18	29	0.142	18	25	0.119	18	32	0.154
17	71	0.335	17	82	0.255	17	56	0.275	17	53	0.252	17	52	0.25
16	45	0.212	16	67	0.208	16	56	0.275	16	61	0.29	16	56	0.269
15	23	0.108	15	40	0.124	15	23	0.113	15	37	0.176	15	31	0.149
14	12	0.057	14	38	0.118	14	18	0.088	14	20	0.095	14	17	0.082
13	0	0.024*	13	0	0.016*	13	2	0.025*	13	3	0.024*	13	1	0.024*
12	0	0.024*	12	0	0.016*	12	0	0.025*	12	0	0.024*	12	0	0.024*
11	1	0.024*	11	0	0.016*	11	0	0.025*	11	4	0.024*	11	0	0.024*
TOTAL	212		TOTAL	322		TOTAL	204		TOTAL	210		TOTAL	208	

TABLE 11—HUMTH01 population databases.

US CAUCASIANS											
NCSBI			VDFS			PC/BT			PBSO		
Allele	Count	Frequency	Allele	Count	Frequency	Allele	Count	Frequency	Allele	Count	Frequency
11	0	0.007*	11	0	0.014*	11	0	0.015*	11	0	0.022*
10	9	0.013	10	4	0.014*	10	4	0.015*	10	1	0.022*
9.3	229	0.33	9.3	108	0.31	9.3	122	0.355	9.3	72	0.31
9	97	0.14	9	50	0.144	9	43	0.125	9	38	0.164
8.3	0	0.007*	8.3	0	0.014*	8.3	2	0.015*	8.3	0	0.022*
8	76	0.11	8	35	0.101	8	40	0.116	8	22	0.095
7	139	0.2	7	66	0.19	7	55	0.160	7	37	0.159
6	142	0.205	6	83	0.239	6	76	0.221	6	62	0.267
5	2	0.007*	5	2	0.014*	5	2	0.015*	5	0	0.022*
TOTAL	694		TOTAL	348		TOTAL	344		TOTAL	232	

* = Minimum allele frequency as recommended by the NRC II report.

TABLE 11—Continued.

US HISPANICS											
NCSBI/CMPD			VDFS			PC/BT			PBSO		
Allele	Count	Frequency	Allele	Count	Frequency	Allele	Count	Frequency	Allele	Count	Frequency
11	0	0.016*	11	0	0.014*	11	0	0.012*	11	0	0.026*
10	2	0.016*	10	2	0.014*	10	7	0.017	10	2	0.026*
9.3	58	0.188	9.3	73	0.202	9.3	73	0.174	9.3	51	0.26
9	24	0.078	9	49	0.135	9	50	0.119	9	28	0.143
8	21	0.068	8	34	0.094	8	45	0.107	8	18	0.092
7	101	0.328	7	100	0.276	7	121	0.288	7	61	0.311
6	101	0.328	6	104	0.287	6	122	0.290	6	36	0.184
5	0	0.016*	5	0	0.014*	5	2	0.012*	5	0	0.026*
4	1	0.016*	4	0	0.014*	4	0	0.012*	4	0	0.026*
TOTAL	308		TOTAL	362		TOTAL	420		TOTAL	196	

TABLE 11—Continued.

US AFRICAN-AMERICANS											
NCSBI			VDFS			PC/BT			PBSO		
Allele	Count	Frequency	Allele	Count	Frequency	Allele	Count	Frequency	Allele	Count	Frequency
11	0	0.007*	11	0	0.013*	11	0	0.018*	11	0	0.025*
10	5	0.007	10	4	0.013*	10	2	0.018*	10	2	0.025*
9.3	52	0.073	9.3	34	0.088	9.3	15	0.054	9.3	21	0.105
9	96	0.136	9	50	0.129	9	49	0.176	9	33	0.165
8.3	0	0.007*	8.3	0	0.013*	8.3	0	0.018*	8.3	0	0.025*
8	167	0.236	8	96	0.247	8	63	0.227	8	46	0.23
7	291	0.411	7	154	0.397	7	107	0.385	7	69	0.345
6	96	0.136	6	47	0.121	6	39	0.140	6	29	0.145
5	1	0.007*	5	3	0.013*	5	3	0.018*	5	0	0.025*
TOTAL	708		TOTAL	388		TOTAL	278		TOTAL	200	

TABLE 11—Continued.

OTHERS														
NCSBI-LUMBEE INDIAN			PC/BT-ASIAN			PBSO-BCWP			PBSO-RBP			PBSO-RNBP		
Allele	Count	Frequency	Allele	Count	Frequency	Allele	Count	Frequency	Allele	Count	Frequency	Allele	Count	Frequency
11	0	0.024*	11	0	0.016*	11	0	0.025*	11	0	0.023*	11	0	0.024*
10	5	0.024	10	14	0.043	10	1	0.025*	10	2	0.023*	10	2	0.024*
9.3	53	0.25	9.3	45	0.140	9.3	38	0.186	9.3	27	0.127	9.3	47	0.226
9	20	0.094	9	87	0.270	9	35	0.172	9	33	0.155	9	42	0.202
8	31	0.146	8	29	0.090	8	33	0.162	8	56	0.263	8	26	0.125
7	68	0.321	7	104	0.323	7	46	0.225	7	64	0.3	7	56	0.269
6	35	0.165	6	43	0.134	6	50	0.245	6	31	0.146	6	35	0.168
5	0	0.024*	5	0	0.016*	5	1	0.025*	5	0	0.023*	5	0	0.024*
TOTAL	212		TOTAL	322		TOTAL	204		TOTAL	213		TOTAL	208	

TABLE 12—HUMTPOX population databases.

US CAUCASIANS											
NCSBI			VDFS			PC/BT			PBSO		
Allele	Count	Frequency	Allele	Count	Frequency	Allele	Count	Frequency	Allele	Count	Frequency
13	0	0.007*	13	0	0.014*	13	0	0.015*	13	0	0.023*
12	32	0.046	12	18	0.052	12	7	0.020	12	7	0.032
11	192	0.277	11	86	0.247	11	97	0.282	11	54	0.248
10	50	0.072	10	23	0.066	10	28	0.081	10	14	0.064
9	75	0.108	9	31	0.089	9	36	0.105	9	17	0.078
8	342	0.493	8	190	0.546	8	175	0.509	8	126	0.578
7	0	0.007*	7	0	0.014*	7	0	0.015*	7	0	0.023*
6	3	0.007*	6	0	0.014*	6	1	0.015*	6	0	0.023*
TOTAL	694		TOTAL	348		TOTAL	344		TOTAL	218	

* = Minimum allele frequency as recommended by the NRC II report.

TABLE 12—Continued.

US HISPANICS											
NCSBI/CMPD			VDFS			PC/BT			PBSO		
Allele	Count	Frequency	Allele	Count	Frequency	Allele	Count	Frequency	Allele	Count	Frequency
13	1	0.016*	13	2	0.014*	13	0	0.012*	13	0	0.026*
12	32	0.104	12	31	0.086	12	33	0.079	12	20	0.102
11	78	0.253	11	100	0.276	11	103	0.245	11	54	0.276
10	13	0.042	10	19	0.052	10	23	0.055	10	11	0.056
9	21	0.068	9	31	0.086	9	22	0.052	9	16	0.082
6	158	0.513	8	169	0.467	8	236	0.562	6	95	0.485
7	3	0.016*	7	3	0.014*	7	2	0.012*	7	0	0.026*
6	2	0.016*	6	7	0.019	6	1	0.012*	6	0	0.026*
TOTAL	308		TOTAL	362		TOTAL	420		TOTAL	196	

TABLE 12—Continued.

US AFRICAN-AMERICANS											
NCSBI			VDFS			PC/BT			PBSO		
Allele	Count	Frequency	Allele	Count	Frequency	Allele	Count	Frequency	Allele	Count	Frequency
13	0	0.007*	13	1	0.013*	13	9	0.032	13	0	0.025*
12	13	0.018	12	8	0.021	12	71	0.255	12	5	0.025
11	174	0.246	11	88	0.227	11	62	0.223	11	47	0.235
10	49	0.069	10	32	0.082	10	94	0.338	10	18	0.09
9	181	0.256	9	86	0.222	9	9	0.032	9	31	0.155
8	237	0.335	8	138	0.356	8	23	0.083	8	79	0.395
7	8	0.011	7	6	0.015	7	10	0.036	7	4	0.025*
6	46	0.065	6	29	0.075	6	0	0.018*	6	16	0.08
TOTAL	708		TOTAL	388		TOTAL	278		TOTAL	200	

TABLE 12—Continued.

OTHERS														
NCSBI-LUMBEE INDIAN			PC/BT-ASIAN			PBSO-BCWP			PBSO-RBP			PBSO-RNBP		
Allele	Count	Frequency	Allele	Count	Frequency	Allele	Count	Frequency	Allele	Count	Frequency	Allele	Count	Frequency
15	0	0.024*	15	1	0.016*	15	0	0.025*	15	0	0.024*	15	0	0.024*
14	0	0.024*	14	5	0.016	14	0	0.025*	14	0	0.024*	14	0	0.024*
13	0	0.024*	13	6	0.019	13	1	0.025*	13	0	0.024*	13	1	0.024*
12	9	0.042	12	132	0.410	12	3	0.025*	12	11	0.052	12	7	0.034
11	51	0.241	11	84	0.261	11	73	0.358	11	55	0.262	11	65	0.313
10	10	0.047	10	78	0.242	10	17	0.083	10	14	0.067	10	18	0.087
9	27	0.127	9	15	0.047	9	19	0.093	9	34	0.162	9	22	0.106
8	113	0.533	8	0	0.016*	8	89	0.436	8	82	0.39	8	92	0.442
7	1	0.024*	7	1	0.016*	7	0	0.025*	7	3	0.024*	7	0	0.024*
6	1	0.024*	6	0	0.016*	6	2	0.025*	6	11	0.052	6	3	0.024*
TOTAL	212		TOTAL	322		TOTAL	204		TOTAL	210		TOTAL	208	

TABLE 13—FGA population databases.

US CAUCASIANS											
NCSBI			VDFS			PC/BT			PBSO		
Allele	Count	Frequency	Allele	Count	Frequency	Allele	Count	Frequency	Allele	Count	Frequency
34	0	0.007*	34	0	0.014*	34	0	0.015*	34	1	0.023*
31	0	0.007*	31	0	0.014*	31	0	0.015*	31	1	0.023*
28	2	0.007*	28	0	0.014*	28	1	0.015*	28	0	0.023*
27	1	0.007*	27	4	0.014*	27	0	0.015*	27	0	0.023*
26	16	0.024	26	14	0.04	26	8	0.023	26	4	0.023*
25	46	0.068	25	31	0.09	25	21	0.061	25	16	0.073
24.2	0	0.007*	24.2	0	0.014*	24.2	0	0.015*	24.2	0	0.023*
24	87	0.128	24	43	0.124	24	45	0.131	24	27	0.124
23.2	3	0.007*	23.2	0	0.014*	23.2	0	0.015*	23.2	2	0.023*
23	102	0.15	23	45	0.13	23	49	0.142	23	41	0.188
22.2	1	0.007*	22.2	4	0.014*	22.2	0	0.015*	22.2	1	0.023*
22	145	0.214	22	56	0.162	22	70	0.203	22	29	0.133
21.2	2	0.007*	21.2	0	0.014*	21.2	0	0.015*	21.2	0	0.023*
21	119	0.176	21	66	0.191	21	63	0.183	21	39	0.179
20.2	1	0.007*	20.2	0	0.014*	20.2	1	0.015*	20.2	0	0.023*
20	104	0.153	20	58	0.168	20	59	0.172	20	37	0.17
19.2	0	0.007*	19.2	1	0.014*	19.2	0	0.015*	19.2	0	0.023*
19	41	0.06	19	20	0.058	19	19	0.055	19	16	0.073
18	8	0.012	18	3	0.014*	18	7	0.020	18	4	0.023*
17	0	0.007*	17	1	0.014*	17	0	0.015*	17	0	0.023*
16	0	0.007*	16	0	0.014*	16	1	0.015*	16	0	0.023*
TOTAL	678		TOTAL	346		TOTAL	344		TOTAL	218	

* = Minimum allele frequency as recommended by the NRC II report.

TABLE 13—Continued.

US HISPANICS											
NCSBI/CMPD			VDFS			PC/BT			PBSO		
Allele	Count	Frequency	Allele	Count	Frequency	Allele	Count	Frequency	Allele	Count	Frequency
46.2	0	0.016*	46.2	0	0.014*	46.2	1	0.012*	46.2	0	0.026*
45.2	0	0.016*	45.2	1	0.014*	45.2	0	0.012*	45.2	0	0.026*
30	0	0.016*	30	1	0.014*	30	0	0.012*	30	1	0.026*
29	0	0.016*	29	1	0.014*	29	1	0.012*	29	1	0.026*
28	1	0.016*	28	2	0.014*	28	3	0.012*	28	0	0.026*
27	8	0.026	27	9	0.025	27	9	0.022	27	7	0.036
26.1	0	0.016*	26.1	1	0.014*	26.1	0	0.012*	26.1	0	0.026*
26	32	0.104	26	25	0.068	26	44	0.106	26	10	0.051
25	58	0.188	25	47	0.128	25	46	0.111	25	19	0.097
24.1	0	0.016*	24.2	0	0.014*	24.2	0	0.012*	24.2	0	0.026*
24	53	0.172	24	58	0.158	24	79	0.190	24	25	0.128
23.2	1	0.016*	23.2	0	0.014*	23.2	0	0.012*	23.2	1	0.026*
23	36	0.117	23	46	0.126	23	48	0.115	23	34	0.173
22.2	1	0.016*	22.2	1	0.014*	22.2	6	0.014	22.2	0	0.026*
22	35	0.114	22	36	0.098	22	56	0.135	22	31	0.158
21.2	0	0.016*	21.2	1	0.014*	21.2	0	0.012*	21.2	0	0.026*
21	27	0.088	21	65	0.178	21	57	0.137	21	22	0.112
20	21	0.068	20	40	0.109	20	23	0.055	20	25	0.128
19.2	1	0.016*	19.2	0	0.014*	19.2	0	0.012*	19.2	0	0.026*
19	30	0.097	19	31	0.085	19	38	0.091	19	18	0.092
18	3	0.016*	18	1	0.014*	18	5	0.012	18	2	0.026*
17.2	1	0.016*	17.2	0	0.014*	17.2	0	0.012*	17.2	0	0.026*
TOTAL	308		TOTAL	366		TOTAL	416		TOTAL	196	

TABLE 13—Continued.

US AFRICAN-AMERICANS											
NCSBI			VDFS			PC/BT			PBSO		
Allele	Count	Frequency	Allele	Count	Frequency	Allele	Count	Frequency	Allele	Count	Frequency
>46.2	1	0.007*	>46.2	0	0.013*	>46.2	0	0.018*	>46.2	0	0.025*
46.2	1	0.007*	46.2	1	0.013*	46.2	1	0.018*	46.2	0	0.025*
44.2	0	0.007*	44.2	2	0.013*	44.2	0	0.018*	44.2	0	0.025*
43.2	0	0.007*	43.2	0	0.013*	43.2	1	0.018*	43.2	0	0.025*
42.2	0	0.007*	42.2	1	0.013*	42.2	0	0.018*	42.2	0	0.025*
32	0	0.007*	32	0	0.013*	32	0	0.018*	32	1	0.025*
31.2	0	0.007*	31.2	0	0.013*	31.2	1	0.018*	31.2	0	0.025*
31	0	0.007*	31	1	0.013*	31	0	0.018*	31	0	0.025*
30.2	0	0.007*	30.2	1	0.013*	30.2	0	0.018*	30.2	0	0.025*
30	2	0.007*	30	0	0.013*	30	1	0.018*	30	0	0.025*
29	5	0.007	29	2	0.013*	29	2	0.018*	29	5	0.025
28	11	0.016	28	7	0.018	28	2	0.018*	28	3	0.025*
27	24	0.034	27	11	0.029	27	5	0.018	27	6	0.03
26	35	0.05	26	18	0.047	26	11	0.040	26	8	0.04
25	58	0.083	25	33	0.086	25	24	0.086	25	18	0.09
24	105	0.151	24	54	0.141	24	51	0.183	24	34	0.17
23	124	0.178	23	66	0.172	23	60	0.216	23	29	0.145
22.2	1	0.007*	22.2	0	0.013*	22.2	1	0.018*	22.2	0	0.025*
22	138	0.198	22	77	0.201	22	44	0.158	22	33	0.165
21.2	1	0.007*	21.2	1	0.013*	21.2	1	0.018*	21.2	0	0.025*
21	76	0.109	21	39	0.102	21	28	0.101	21	25	0.125
20.2	4	0.007*	20.2	1	0.013*	20.2	0	0.018*	20.2	0	0.025*
20	42	0.06	20	30	0.078	20	17	0.061	20	17	0.085
19.3	1	0.007*	19.3	0	0.013*	19.3	0	0.018*	19.3	0	0.025*
19.2	3	0.007*	19.2	1	0.013*	19.2	1	0.018*	19.2	1	0.025*
19	48	0.069	19	25	0.065	19	20	0.072	19	13	0.065
18.2	10	0.014	18.2	9	0.023	18.2	2	0.018*	18.2	2	0.025*
18	5	0.007	18	4	0.013*	18	5	0.018	18	4	0.025*
17	0	0.007*	17	0	0.013*	17	0	0.018*	17	1	0.025*
<17	1	0.007*	<17	0	0.013*	<17	0	0.018*	<17	0	0.025*
TOTAL	696		TOTAL	384		TOTAL	278		TOTAL	200	

TABLE 13—Continued.

OTHERS														
NCSBI-LUMBEE INDIAN			PC/BT-ASIAN			PBSO-BCWP			PBSO-RBP			PBSO-RNBP		
Allele	Count	Frequency	Allele	Count	Frequency	Allele	Count	Frequency	Allele	Count	Frequency	Allele	Count	Frequency
>46.2	1	0.024*	>46.2	0	0.016*	>46.2	0	0.025*	>46.2	0	0.024*	>46.2	0	0.024*
43.2	0	0.024*	43.2	0	0.016*	43.2	0	0.025*	43.2	1	0.024*	43.2	0	0.024*
31.2	3	0.024*	31.2	0	0.016*	31.2	1	0.025*	31.2	1	0.024*	31.2	0	0.024*
30.2	0	0.024*	30.2	0	0.016*	30.2	0	0.025*	30.2	1	0.024*	30.2	0	0.024*
30	0	0.024*	30	0	0.016*	30	1	0.025*	30	2	0.024*	30	0	0.024*
28	7	0.033	28	1	0.016*	28	0	0.025*	28	6	0.029	28	2	0.024*
27	3	0.024*	27	5	0.016	27	1	0.025*	27	4	0.024*	27	3	0.024*
26	1	0.024*	26	35	0.109	26	10	0.049	26	10	0.048	26	8	0.038
25.2	1	0.024*	25.2	1	0.016*	25.2	0	0.025*	25.2	0	0.024*	25.2	0	0.024*
25	18	0.085	25	45	0.140	25	27	0.132	25	21	0.1	25	16	0.077
24.2	0	0.024*	24.2	0	0.016*	24.2	0	0.025*	24.2	0	0.024*	24.2	0	0.024*
24	36	0.17	24	48	0.149	24	25	0.123	24	30	0.143	24	30	0.144
23.2	2	0.024*	23.2	1	0.016*	23.2	1	0.025*	23.2	0	0.024*	23.2	0	0.024*
23	36	0.17	23	51	0.158	23	37	0.181	23	34	0.162	23	28	0.135
22.2	1	0.024*	22.2	2	0.016*	22.2	0	0.025*	22.2	0	0.024*	22.2	0	0.024*
22	42	0.198	22	52	0.161	22	23	0.113	22	33	0.157	22	32	0.154
21.2	1	0.024*	21.2	0	0.016*	21.2	0	0.025*	21.2	0	0.024*	21.2	1	0.024*
21	25	0.118	21	28	0.087	21	34	0.167	21	36	0.171	21	47	0.226
20.2	1	0.024*	20.2	0	0.016*	20.2	0	0.025*	20.2	1	0.024*	20.2	0	0.024*
20	16	0.075	20	20	0.062	20	24	0.118	20	13	0.062	20	26	0.125
19	16	0.075	19	30	0.093	19	17	0.083	19	14	0.067	19	14	0.067
18	2	0.024*	18	2	0.006	18	3	0.025*	18	2	0.024*	18	0	0.024*
17	0	0.024*	17	0	0.016*	17	0	0.025*	17	1	0.024*	17	1	0.024*
16	0	0.024*	16	1	0.016*	16	0	0.025*	16	0	0.024*	16	0	0.024*
14	0	0.024*	14	0	0.016*	14	0	0.025*	14	0	0.024*	14	0	0.024*
TOTAL	212		TOTAL	322		TOTAL	204		TOTAL	210		TOTAL	208	

TABLE 14—Penta D population databases.

US CAUCASIANS					
NCSBI			PC/BT		
Allele	Count	Frequency	Allele	Count	Frequency
>17	1	0.007*	>17	0	0.015*
17	0	0.007*	17	1	0.015*
16	1	0.007*	16	4	0.015*
15	11	0.016	15	9	0.026
14	55	0.081	14	19	0.055
13	132	0.195	13	72	0.209
12	154	0.227	12	82	0.238
11	93	0.137	11	51	0.148
10	87	0.128	10	40	0.116
9	128	0.189	9	59	0.172
8	9	0.013	8	5	0.015
7	4	0.007*	7	1	0.015*
6	1	0.007*	6	0	0.015*
5	1	0.007	5	1	0.015*
3.2	0	0.007*	3.2	0	0.015*
2.2	1	0.007*	2.2	0	0.015*
TOTAL	678		TOTAL	344	

* = Minimum allele frequency as recommended by the NRC II report.

TABLE 14—Continued.

US AFRICAN-AMERICANS					
NCSBI			PC/BT		
Allele	Count	Frequency	Allele	Count	Frequency
>17	0	0.007*	>17	0	0.018*
16	0	0.007*	16	1	0.018*
15	2	0.007*	15	2	0.018*
14	16	0.023	14	4	0.018*
13	65	0.093	13	29	0.104
12	81	0.116	12	30	0.108
11.2	1	0.007*	11.2	0	0.018*
11	101	0.145	11	47	0.169
10	73	0.105	10	28	0.101
9	125	0.18	9	39	0.140
8	76	0.109	8	41	0.147
7	20	0.029	7	6	0.022
6	8	0.011	6	0	0.018*
5	35	0.05	5	13	0.047
3.2	2	0.007*	3.2	4	0.018*
2.2	91	0.131	2.2	34	0.122
TOTAL	696		TOTAL	278	

TABLE 14—Continued.

US HISPANICS					
NCSBI/CMPD			PC/BT		
Allele	Count	Frequency	Allele	Count	Frequency
>17	1	0.017*	>17	0	0.012*
17	0	0.017*	17	1	0.012*
16	1	0.017*	16	1	0.012*
15	4	0.017*	15	5	0.012
14	19	0.063	14	23	0.055
13.2	0	0.017*	13.2	1	0.012*
13	51	0.169	13	75	0.179
12	41	0.136	12	66	0.157
11	44	0.146	11	74	0.176
10	64	0.212	10	78	0.186
9	58	0.192	9	78	0.186
8	9	0.03	8	10	0.024
7	0	0.017*	7	2	0.012*
6	0	0.017*	6	0	0.012*
5	5	0.017	5	2	0.012*
3.2	0	0.017*	3.2	0	0.012*
2.2	5	0.017	2.2	4	0.012*
TOTAL	302		TOTAL	420	

TABLE 14—Continued.

OTHERS					
NCSBI-LUMBEE INDIAN			PC/BT-ASIAN		
Allele	Count	Frequency	Allele	Count	Frequency
17	0	0.024*	17	0	0.016*
16	1	0.024*	16	2	0.016*
15	2	0.024*	15	0	0.016*
14	15	0.071	14	23	0.071
13	42	0.198	13	34	0.106
12	35	0.165	12	43	0.134
11	23	0.108	11	28	0.087
10	43	0.203	10	55	0.171
9.3	0	0.024*	9.3	1	0.016*
9	23	0.108	9	115	0.357
8	12	0.057	8	17	0.053
7	5	0.024	7	4	0.016*
6	0	0.024*	6	0	0.016*
5	4	0.024*	5	0	0.016*
3.2	0	0.024*	3.2	0	0.016*
2.2	7	0.033	2.2	0	0.016*
TOTAL	212		TOTAL	322	

TABLE 15—Penta E population databases.

US CAUCASIANS											
NCSBI			VDFS			PC/BT			PBSO		
Allele	Count	Frequency	Allele	Count	Frequency	Allele	Count	Frequency	Allele	Count	Frequency
22	2	0.007*	22	0	0.021*	22	0	0.015*	22	0	0.023*
21	0	0.007*	21	0	0.021*	21	2	0.015*	21	5	0.023
20	4	0.007*	20	3	0.021*	20	2	0.015*	20	1	0.023*
19	19	0.028	19	5	0.021	19	5	0.015	19	4	0.023*
18	18	0.027	18	3	0.021*	18	6	0.017	18	5	0.023
17	39	0.058	17	11	0.046	17	17	0.049	17	3	0.023*
16	39	0.058	16	9	0.038	16	17	0.049	16	16	0.073
15	27	0.04	15	20	0.083	15	13	0.038	15	5	0.023
14	40	0.059	14	11	0.046	14	21	0.061	14	18	0.083
13.2	1	0.007*	13.2	0	0.021*	13.2	0	0.015*	13.2	0	0.023*
13	79	0.117	13	18	0.075	13	33	0.096	13	18	0.083
12	112	0.166	12	41	0.171	12	72	0.209	12	34	0.156
11	80	0.118	11	30	0.125	11	35	0.102	11	27	0.124
10	62	0.092	10	19	0.079	10	32	0.093	10	18	0.083
9	5	0.007	9	2	0.021*	9	3	0.015*	9	1	0.023*
8	7	0.01	8	2	0.021*	8	3	0.015*	8	2	0.023*
7	104	0.154	7	50	0.208	7	60	0.174	7	40	0.183
6	0	0.007*	6	0	0.021*	6	0	0.015*	6	2	0.023*
5	38	0.056	5	16	0.067	5	23	0.067	5	19	0.087
TOTAL	676		TOTAL	240		TOTAL	344		TOTAL	218	

* = Minimum allele frequency as recommended by the NRC II report.

TABLE 15—Continued.

US HISPANICS											
NCSBI/CMPD			VDFS			PC/BT			PBSO		
Allele	Count	Frequency	Allele	Count	Frequency	Allele	Count	Frequency	Allele	Count	Frequency
25	0	0.017*	25	1	0.014*	25	0	0.012*	25	0	0.026*
24	0	0.017*	24	0	0.014*	24	0	0.012*	24	1	0.026*
23	0	0.017*	23	1	0.014*	23	1	0.012*	23	0	0.026*
22	2	0.017*	22	4	0.014*	22	3	0.012*	22	1	0.026*
21	4	0.017*	21	8	0.022	21	9	0.022	21	2	0.026*
20	8	0.027	20	4	0.014*	20	13	0.031	20	0	0.026*
19	12	0.04	19	12	0.033	19	9	0.022	19	6	0.031
18	13	0.043	18	14	0.039	18	14	0.033	18	4	0.026*
17	24	0.06	17	16	0.044	17	23	0.055	17	13	0.066
16	36	0.12	16	27	0.075	16	35	0.084	16	6	0.031
15	27	0.09	15	32	0.088	15	43	0.103	15	25	0.128
14	26	0.087	14	28	0.077	14	34	0.081	14	14	0.071
13	26	0.087	13	29	0.08	13	48	0.115	13	20	0.102
12	53	0.177	12	58	0.16	12	79	0.189	12	36	0.184
11	15	0.05	11	21	0.058	11	26	0.062	11	23	0.117
10	10	0.033	10	27	0.075	10	16	0.038	10	5	0.026
9	6	0.02	9	6	0.017	9	3	0.012*	9	2	0.026*
8	8	0.027	8	21	0.058	8	16	0.038	8	3	0.026*
7	18	0.06	7	34	0.094	7	33	0.079	7	21	0.107
5	12	0.04	5	19	0.052	5	13	0.031	5	14	0.071
TOTAL	300		TOTAL	362		TOTAL	418		TOTAL	196	

TABLE 15—Continued.

US AFRICAN-AMERICANS											
NCSBI			VDFS			PC/BT			PBSO		
Allele	Count	Frequency	Allele	Count	Frequency	Allele	Count	Frequency	Allele	Count	Frequency
22	1	0.007*	22	0	0.015*	22	0	0.018*	22	0	0.025*
21	0	0.007*	21	1	0.015*	21	0	0.018*	21	0	0.025*
20	4	0.007*	20	3	0.015*	20	0	0.018*	20	0	0.025*
19	8	0.012	19	0	0.015*	19	2	0.018*	19	0	0.025*
18	14	0.02	18	4	0.015*	18	2	0.018*	18	2	0.025*
17	29	0.042	17	12	0.036	17	9	0.032	17	8	0.04
16	29	0.042	16	10	0.03	16	13	0.047	16	5	0.025
15	38	0.055	15	18	0.054	15	11	0.040	15	8	0.04
14	54	0.078	14	20	0.06	14	14	0.050	14	14	0.07
13	85	0.122	13	46	0.137	13	35	0.126	13	23	0.115
12	86	0.124	12	33	0.098	12	34	0.122	12	25	0.125
11	46	0.066	11	26	0.077	11	14	0.050	11	18	0.09
10	27	0.039	10	16	0.048	10	14	0.050	10	8	0.04
9	31	0.045	9	12	0.036	9	15	0.054	9	7	0.035
8	125	0.18	8	64	0.19	8	39	0.140	8	32	0.16
7	67	0.097	7	37	0.11	7	37	0.133	7	28	0.14
5	50	0.072	5	34	0.101	5	39	0.140	5	22	0.11
TOTAL	694		TOTAL	336		TOTAL	278		TOTAL	200	

TABLE 15—Continued.

OTHERS														
NCSBI-LUMBEE INDIAN			PC/BT-ASIAN			PBSO-BCWP			PBSO-RBP			PBSO-RNBP		
Allele	Count	Frequency	Allele	Count	Frequency	Allele	Count	Frequency	Allele	Count	Frequency	Allele	Count	Frequency
24	0	0.024*	24	1	0.016*	24	0	0.025*	24	0	0.024*	24	0	0.024*
23	0	0.024*	23	4	0.016*	23	1	0.025*	23	0	0.024*	23	0	0.024*
22	0	0.024*	22	1	0.016*	22	0	0.025*	22	0	0.024*	22	0	0.024*
21	0	0.024*	21	8	0.025	21	2	0.025*	21	1	0.024*	21	2	0.024*
20.3	0	0.024*	20.3	2	0.016*	20.3	0	0.025*	20.3	0	0.024*	20.3	0	0.024*
20	0	0.024*	20	11	0.034	20	3	0.025*	20	2	0.024*	20	0	0.024*
19	13	0.061	19	26	0.081	19	3	0.025*	19	3	0.024*	19	5	0.024
18	6	0.028	18	15	0.047	18	7	0.034	18	4	0.024*	18	7	0.034
17	4	0.024*	17	31	0.096	17	8	0.039	17	11	0.052	17	6	0.029
16	12	0.057	16	35	0.109	16	10	0.049	16	10	0.048	16	4	0.024*
15	8	0.038	15	35	0.109	15	6	0.029	15	10	0.048	15	13	0.063
14	10	0.047	14	22	0.068	14	15	0.074	14	21	0.1	14	11	0.053
13	9	0.042	13	20	0.062	13	21	0.103	13	20	0.095	13	24	0.115
12	32	0.151	12	36	0.112	12	45	0.221	12	32	0.152	12	37	0.178
11	30	0.142	11	40	0.124	11	23	0.113	11	16	0.076	11	31	0.149
10	8	0.038	10	10	0.031	10	16	0.078	10	10	0.048	10	17	0.082
9	20	0.094	9	3	0.016*	9	3	0.025*	9	5	0.024	9	3	0.024*
8	9	0.042	8	0	0.016*	8	5	0.025	8	17	0.081	8	5	0.024
7	25	0.123	7	9	0.028	7	19	0.093	7	33	0.157	7	30	0.144
6	0	0.024*	6	0	0.016*	6	0	0.025*	6	0	0.024*	6	1	0.024*
5	25	0.118	5	13	0.040	5	17	0.083	5	15	0.071	5	12	0.058
TOTAL	212		TOTAL	322		TOTAL	204		TOTAL	210		TOTAL	208	

TABLE 16—Forensic and paternity statistics of PowerPlex™ 1.1, 2.1, and 16.

	PowerPlex™ 1.1				PowerPlex™ 2.1				PowerPlex™ 16			
	Caucasian	Black	Hispanic	Asian	Caucasian	Black	Hispanic	Asian	Caucasian	Black	Hispanic	Asian
Forensic Statistics												
Matching Probability (general)	8.69×10^{-9}	3.61×10^{-9}	6.89×10^{-9}	7.58×10^{-9}	1.18×10^{-11}	3.28×10^{-12}	9.79×10^{-12}	6.57×10^{-12}	5.46×10^{-18}	7.07×10^{-19}	3.41×10^{-18}	2.67×10^{-18}
Matching Probability (siblings)	6.95×10^{-4}	5.25×10^{-4}	6.28×10^{-4}	5.61×10^{-4}	8.94×10^{-5}	9.06×10^{-5}	1.45×10^{-4}	7.19×10^{-5}	3.14×10^{-7}	2.59×10^{-7}	4.30×10^{-7}	2.57×10^{-7}
Paternity Statistics												
Power of Exclusion	0.9968863	0.9982042	0.9973367	0.9981793	0.9999254	0.9999204	0.9997132	0.9999759	0.9999994	0.9999996	0.9999983	0.9999998
Typical Paternity Index	2.62×10^2	4.97×10^2	3.18×10^2	4.71×10^2	1.35×10^4	1.29×10^4	3.24×10^3	4.18×10^4	1.52×10^6	2.51×10^6	5.22×10^5	4.11×10^6