FOR THE RECORD

José Arnaldo Soares-Vieira,[1] Ph.D.; Daniel R. Muñoz,[1] Ph.D.; Edna S. M. Iwamura,[1] M.Sc.; Ana Elisa C. Billerbeck,[2] Ph.D.; Paulo A. Otto,[3] Ph.D.

Allele Frequency Distribution of Three STR Loci (CSF1PO, TPOX, and TH01) in a Brazilian Population Sample*

POPULATION: 240 Caucasians and 91 Mulattoes from Brazil

KEYWORDS: forensic science, DNA typing, CSF1PO, TPOX, TH01, Brazil

After informing 331 unrelated Brazilian individuals (240 Caucasians and 91 Mulattoes) and getting their consent, blood samples were collected. DNA was extracted from 5 mL of peripheral blood obtained from each of 331 volunteers by the salting-out procedure (1). PCR analysis was performed using the GenePrint™ STR Multiplex System (CTT Multiplex, Promega Corporation, Madison, WI) under conditions recommended by the manufacturer. The amplified fragments were submitted to electrophoresis on denatured polyacrylamide gels and visualized after silver staining. Allele identification was achieved by comparison of the amplified fragments with the allelic ladder included in the reagent set. Statistical analysis: gene and genotype frequencies were estimated using standard counting procedures; for comparing gene counts between samples and for testing Hardy-Weinberg proportions within each sample, Chi-squared tests were used throughout. All these procedures are described in detail by Weir (2). In order to locate the categories responsible for significant values in contingency tables, the method of adjusted standardized residuals described by Haberman was applied (3,4). Tables 1, 2, and 3 summarize the frequencies and Table 4 describes the observed and expected heterozygosities. The complete data set is available to any interested researcher upon request.

[1] Departamento de Medicina Legal, Faculdade de Medicina da Universidade de São Paulo, Rua Teodoro Sampaio, 115—CEP 05405-000 São Paulo, SP—Brazil.

[2] Laboratório de Hormônios e Genética Molecular da 1˚ Clínica Médica do Hospital das Clínicas, Faculdade de Medicina da Universidade de São Paulo.

[3] Departamento de Biologia, Instituto de Biociências da Universidade de São Paulo.

* This research was supported by LIM-HC-FMUSP, Brazil and Biobrás S/A.

Acknowledgments

We thank Ms. Estela F. Maximiano for technical assistance.

References

1. Miller SA, Dykes DD, Polesky HF. A simple salting-out procedure for extracting DNA from human nucleated cells. Nucleic Acids Res 1988;6:1215.
2. Weir BS. Genetic data analysis II. Sinauer, Sunderland, 1996.
3. Haberman SJ. The analysis of residuals in cross-classified tables. Biometrics 1973;29:205–20.
4. Everitt BS. The analysis of contingency tables. Chapman & Hall, London, 1973.

Additional information and reprint requests:
Dr. José Arnaldo Soares-Vieira
Departamento de Medicina Legal
Faculdade de Medicina, Universidade de São
Paulo, Brasil, Instituto Oscar Freire
Rua Teodoro Sampaio 115
São Paulo, SP Cep 05405-000, Brasil
Tel: (55 11) 3085-9677
Fax: (55 11) 3085-9134
email:josearnaldos.vieira@bol.com.br.

TABLE 1—*Estimates of CSF1PO allele frequencies and their standard errors obtained from the sample of unrelated Brazilian Caucasians and Mulattoes here reported.*

Allele	Caucasians ($n = 240$)	Mulattoes ($n = 91$)
7	0.002 ± 0.002	0.000 ± 0.000
8	0.015 ± 0.005	0.011 ± 0.008
9	0.031 ± 0.008	0.066 ± 0.018
10	0.252 ± 0.020	0.286 ± 0.033
11	0.298 ± 0.021	0.258 ± 0.032
12	0.329 ± 0.021	0.302 ± 0.034
13	0.060 ± 0.011	0.060 ± 0.018
14	0.013 ± 0.005	0.016 ± 0.009
15	0.000 ± 0.000	0.000 ± 0.000

n = number of individuals.

TABLE 2—*Estimates of TPOX allele frequencies and their standard errors obtained from the sample of unrelated Brazilian Caucasians and Mulattoes here reported.*

Allele	Caucasians ($n = 240$)	Mulattoes ($n = 91$)
6	0.010 ± 0.005	0.022 ± 0.011
7	0.002 ± 0.002	0.000 ± 0.000
8	0.494 ± 0.023	0.374 ± 0.036
9	0.127 ± 0.015	0.132 ± 0.025
10	0.063 ± 0.011	0.121 ± 0.024
11	0.267 ± 0.020	0.302 ± 0.034
12	0.035 ± 0.008	0.049 ± 0.016
13	0.002 ± 0.002	0.000 ± 0.000

n = number of individuals.

TABLE 3—*Estimates of TH01 allele frequencies and their standard errors obtained from the sample of unrelated Brazilian Caucasians and Mulattoes here reported.*

Allele	Caucasians ($n = 240$)	Mulattoes ($n = 91$)
5	0.004 ± 0.003	0.000 ± 0.000
6	0.238 ± 0.019	0.181 ± 0.029
7	0.185 ± 0.018	0.291 ± 0.034
8	0.127 ± 0.015	0.176 ± 0.028
9	0.194 ± 0.018	0.137 ± 0.026
9.3	0.192 ± 0.018	0.154 ± 0.027
10	0.060 ± 0.011	0.055 ± 0.017
11	0.000 ± 0.000	0.005 ± 0.005

n = number of individuals.

TABLE 4—*Observed and expected heterozygosities (and standard errors) and Chi-squared values obtained by comparing them for CSF1PO, TPOX, and TH01 loci in the sample of unrelated Brazilian Caucasians and Mulattoes here reported.*

	Heterozygozity			
Caucasians	Observed	Expected	Chi-sq.(1d.f.)	
CSF1PO	0.650 ± 0.031	0.734 ± 0.008	8.753	*($P = 0.003$)
TPOX	0.683 ± 0.030	0.664 ± 0.015	0.416	n.s.
TH01	0.788 ± 0.026	0.815 ± 0.004	1.215	n.s.
	Heterozygozity			
Mulattoes	Observed	Expected	Chi-sq.(1d.f.)	
CSF1PO	0.769 ± 0.044	0.752 ± 0.013	0.145	n.s.
TPOX	0.714 ± 0.047	0.734 ± 0.017	0.184	n.s.
TH01	0.769 ± 0.044	0.806 ± 0.011	0.779	n.s.

n.s. = no significance.