

FOR THE RECORD

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Distribution of HLA-DQA1, LDLR, GYPA, HBGG, D7S8 and Gc Alleles in a Black Population Sample from São Paulo, Brazil

POPULATION: Black Brazilians, São Paulo City, Brazil.

KEYWORDS: forensic science, DNA typing, polymerase chain reaction, population genetics, HLA-DQA1, LDLR, GYPA, HBGG, D7S8, Gc, Brazil

TABLE 1—Estimates of PM + DQA1 loci allele frequencies among Brazilian Blacks from the city of São Paulo.

Allele	LDLR	GYPA	HBGG	D7S8	Gc	HLADQA1
A	0.274	0.559	0.417	0.573	0.177	...
B	0.726	0.441	0.330	0.427	0.579	...
C	...	...	0.253	...	0.243	...
1.1	...	...	...	...	...	0.121
1.2	...	...	...	...	...	0.267
1.3	...	...	...	...	...	0.049
2	...	...	...	...	...	0.118
3	...	...	...	...	...	0.142
4.1	...	...	...	...	...	0.233
4.2/4.3	...	...	...	...	...	0.070
H _{ex}	0.398	0.493	0.653	0.489	0.573	0.818
H _{ob}	0.382	0.535	0.576	0.438	0.535	0.806

Total number of alleles: 288; H_{ex} expected Heterozygosity; H_{ob} observed Heterozygosity.

Whole blood samples were collected from 144 unrelated Black Brazilian individuals under informed consent. DNA was extracted from 5 mL of peripheral blood by the salting-out procedure (1). PCR and reverse dot-blot analysis were performed using the Ampli-type PM + DQA1 PCR Amplification and Typing Kit (Polymarker Multiplex, Applied Biosystems, Foster City, CA) under conditions recommended by the manufacturer.

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The estimates of allele frequencies for all studied loci were obtained by applying standard counting methods described in detail by Weir (2), Evett & Weir (3), and Sham (4). Their standard errors were calculated after $s.e.(p_i) = \sqrt{\text{var}(p_i)}$, where $\text{var}(p_i) = p_i(1 - p_i)/2N = (p_i - p_i^2)/2N$ (binomial expected value if the population genotypes are in Hardy-Weinberg ratios) or $\text{var}(p_i) = [p_i + n(\alpha_i \alpha_i)/N - 2p_i^2]/2N$ (variance estimated from population samples in which genotypes are not necessarily distributed binomially). Genotype distributions for these loci did not deviate significantly from Hardy-Weinberg proportions. We detected no significant associations between the loci out of a total of 15 possible pairwise comparisons. Other population studies from Caucasians and Mulattoes from Brazil for comparison can be found in Ref (5). The complete data are available to any interested researcher upon request.

References

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TABLE 2—*Biological relationship exclusion probabilities (test powers) for Brazilian Blacks from São Paulo.*

Relationship	P (exclusion/relationship = false)						
	LDLR	GYPA	HGBB	D7S8	GC	HLA-DQA1	All Loci
identity	0.5585	0.6214	0.8058	0.6195	0.7534	0.9428	0.9998
monozygosity	0.3387	0.4019	0.5281	0.3996	0.4750	0.6448	0.9791
maternity	0.0793	0.1215	0.2134	0.1197	0.1644	0.4663	0.7502
paternity	0.1594	0.1857	0.3600	0.1848	0.3078	0.6412	0.9113
joint parentage	0.2473	0.2719	0.5399	0.2779	0.4796	0.8312	0.9842