Int J Hum Genet, 2(3): 153-159 (2002)
PRINT: ISSN 0972-3757 ONLINE: 2456-6360
DOI: 10.31901/24566330.2002/02.03.02

Heterogeneous Distribution of HbS and HbC Alleles in Afro-derived Brazilian Populations

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KEY WORDS Screening; Afro-derived Brazilian populations; sickle cell diseases; HbS and HbC

ABSTRACT Africans brought to Brazil as slaves established communities known as *Quilombos.* As a consequence of this migration, sickle cell diseases are currently the most frequent hemoglobinopathy in the country. We sampled and analyzed for the presence of HbS and HbC 1182 individuals belonging to 11 remnants of *Quilombo* communities, distributed over three administrative regions of Brazil. Our results were pooled with literature data, resulting in the analysis of 2601 individuals from 24 populations distributed over the five Brazilian administrative regions. There were differences among weighted averages frequencies for the five Brazilian regions, and there were remarkable heterogeneities among all populations and the ones located in the same region. Additionally, we evaluated the utilization of the test of solubility and its efficiency in the field in three communities, reinforcing the reliability of the test as a first screening of hemoglobinopathy. Frequencies of hemoglobin S allele ranged from 0 to 13% and HbC allele was absent in 18 out of the 24 communities. The distribution of HbS and HbC alleles in remnants of *Quilombos* are heterogeneous and independent of geographic location probably due to differences in their history of foundation and miscegenation.

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