COLOR AND GENOMIC ANCESTRY OF BRAZILIANS STUDIED WITH FORENSIC MICROSATELLITES

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The population of Brazil, formed by extensive admixture between Amerindians, Europeans and Africans, is one of the most variable in the world. We have recently published a study that used ancestry-informative markers to conclude that in Brazil, at an individual level, color, as determined by physical evaluation, was a poor predictor of genomic ancestry, estimated by molecular markers. To corroborate these findings we undertook the present investigation based on data from 12 commercially available forensic microsatellites that were utilized to estimate the personal genomic origin for each of 752 individuals from the city of São Paulo, belonging to different Brazilian color categories (275 Whites, 192 Intermediates and 285 Blacks). The genotypes permitted the calculation of a personal likelihood-ratio estimator of African or European ancestry. Although the 12 marker set proved capable of discriminating between European and African individuals, we observed very significant overlaps among the three color categories of Brazilians. This was confirmed quantitatively using a Bayesian analysis of population structure that did not demonstrate significant genetic differentiation between the three color groups. These results corroborate and validate our previous conclusions using ancestry-informative markers that in Brazil at the individual level there is significant dissociation of color and genomic ancestry.