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BLOOD GROUPS IN TUCANO INDIANS

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THE purpose of this paper is to present the results of a study made on blood groups among the Tucano Indians of the Uaupés region, upper Negro River, State of Amazonas, Brazil. The Tucanos constitute a linguistic family that extends along the Uaupés River to a little below its meeting with the Negro River. They are composed of several tribes, the most important of which are the Tucanos, the Deçana and the Piratapuaia. These tribes are exogamous and should present common genetic characteristics, therefore, we elected to study them together as one group. The region in which we worked is considered a contact zone, therefore, these Indians, in a phase of acculturation, should present traces of miscegenation with the local tri-hybrid population.

SAMPLES AND METHODS

The initial sample studied was composed of 111 individuals without close family relationship belonging to the 3 tribes cited above, and collected at random from Indians residing at and near the Salesian Mission in Uaupés. Later, the number was increased to 131, with blood samples being gathered by Biocca during his expedition to the upper Negro River in 1963, and belonging to the same group.

In the sample, we studied blood groups of the ABO, MN, Rh (C, c, D, e, C, E, Coombs), Ortho (M, N, e) and Schering (Duffy and Kidd); also used Duffy and Kidd systems.

The blood, collected from the veins in a mixture of oxalates, was kept under refrigeration, air-expressed to Manaus, and classified. For the classifications we used commercial serums of Johnson of Brazil (ABO, D, e, C, E, Coombs), Ortho (M, N, e) and Schering (Duffy and Kidd); the Diego serum was kindly donated to us by Dr. Miguel Layrisse. For reasons of technical and material nature, not all the blood could be utilized for all classifications.

TABLE 1

ABO system (131 classifications)

PHENOTYPES				
No. of Individuals		%	Gene Frequencies	
O	127	97.0	p	0.012
A	3	2.3	q	0.004
B	1	0.7	r	0.985
AB	0	0		

TABLE 2

MN system (75 classifications)

PHENOTYPES				
No. of Individuals		%	Gene Frequencies	
M	56	74.6	M	0.86
N	17	22.7	N	0.14
MN	2	2.7		

TABLE 3

Diego system (131 classifications)

PHENOTYPES				
No. of Individuals		%	Gene Frequencies	
Di (a+)	46	35.1	Di ^a	0.19
Di (a—)	85	64.9	Di ^b	0.81

TABLE 4

Rh system (125 classifications)

PHENOTYPES	GENES MORE PROBABLE	NO.
CDe	R ¹ R ¹	18
cDE	R ² R ²	9
CDE	R ² R ²	12
cDe	R ⁰ R ⁰	9
CcDEe	R ¹ R ²	34
CcDe	R ¹ R ⁰	17
CDEe	R ¹ R ²	17
CcDE	R ² R ²	9

This data gives us the following chromosomic frequencies:

R¹(CDe): 0.41; R²(cDE): 0.25; R²(CDE): 0.20; R⁰(cDe): 0.14.

RESULTS

The results appear below, showing the number of classifications done under each system, the number and percentage of individuals found in each group, and the gene frequencies.

In Duffy and Kidd systems, the number of determinations was too small for us to calculate the gene frequencies, so we cite only the number of individuals found in each type.

TABLE 5

Duffy and Kidd systems (20 classifications)

DUFFY SYSTEM		KIDD SYSTEM	
Fy (a+):	8	Jk (a+):	8
Fy (a-):	12	Jk (a-):	12

DISCUSSION

The Tucanos are one of the most accessible Indian groups in Amazonas because of scheduled airlines to the area and assistance given to them by the Salesian Mission. Because of this fact we chose them for our initial study, though they had been studied before in relation to the ABO and MN systems (Biocca and Ottensooser, 1944). Our results agree with the results of these authors in regard to the MN system, although differ with them on the ABO system by our finding of A and B individuals, formerly not observed. This might be explained by the miscegenation of the Indians living in the area.

As to the other systems, nothing is known of this or of any other groups of Indians in Amazonas. We therefore were encouraged in presenting the results of our research, in spite of the frequencies obtained for the Rh system. These should be looked to, however, with reserve, due to the high proportions of R^z and R^o found and the complete absence of the R^2r phenotype, not observed among Indians in general. Further observations, of course, will have to be made before these results can be accepted or denied.

The frequencies of Diego, one of the highest found among South American Indians, are very close to those observed in other Brazilian groups (Junqueira and Wishart, 1956; Pantin and Junqueira, 1952). Regarding the Duffy and Kidd systems, the number of determinations was too small for us to reach any conclusion. However, the frequency

of Duffy was similar to the findings among the Carajá Indians (Junqueira and Wishart, 1956).

SUMMARY AND ABSTRACT

Among 131 Tucano Indians of the Uaupés region, upper Negro River, State of Amazonas, Brasil, a study of blood groups of the ABO, MN, Rh and Diego systems, was made along with a small number of samples of the Duffy and Kidd systems. Among other findings, tests revealed 97% O, 75% M, 35% Di (a+) phenotypes. High frequencies of cDe (R^o) and CDE (R^z) remain unexplained and their interpretation will depend upon the future studies.

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LITERATURE CITED

- BIOCCA, E. AND F. OTTENSOOSER 1944 Estudos etno-biológicos entre índios do alto Rio Negro, Amazonas. I. Grupos comuns e fatores M e N, *Arq. Biol.*, 28: 1-8.
- JUNQUEIRA, P. C. AND P. J. WISHART 1949 Blood types of Brazilian Indians (Mato-Grosso), *Amer. J. Human Genet.*, 1: 141-145.
- PANTIN, A. M. AND P. C. JUNQUEIRA 1952 Blood groups of Brazilian Indians, *Amer. J. Phys. Anthrop.*, 10: 395-405.