Ancestry distribution effect on distribution of allelic frequency of *NFKB1* (rs28362491) in Brazilian population

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INTRODUCTION: Transcription factor NFKB1 plays an important role in the inflammatory process. It can also influence cancer development and aggressiveness, increasing tumour angiogenesis and repressing the immune response. The *NFKB1* gene carries an INDEL polymorphism in the promoter region (−94 indel ATTG, rs28362491) that may affect regulatory effect on gene expression by microRNA. Among major ethnic or continental groups, this variant presents different allelic frequencies. In admixed populations, such as the Brazilian population, data is limited on distribution of these polymorphisms. **OBJECTIVES:** The aim of this study was to investigate the influence of genetic ancestry on deletion allele of rs28362491, which the literature describes as polymorphisms with a risk of cancer or worse prognosis for cancer. **MATERIAL AND METHODS:** We collected samples of whole blood from Rio Grande do Norte population (n = 279). The polymorphism and ancestry distribution were typed by Multiplex polymerase chain reaction (PCR) using the ABI PRISM 3130 and analyzed with GeneMapper ID v3.2. The ancestry distribution of participants were estimated assuming three parental populations (European, African and

Amerindian) and were also stratified each 10%. **RESULTS AND DISCUSSION:** Comparing the average ancestry distribution among carrier group D allele, we observed a significant difference in the African contribution (p=0.006). Moreover, an increased probability of an individual being a carrier of the allele D were observed when analyzing the cumulative effect of the African contribution on the population studied. **CONCLUSION:** In summary, our study showed the probability of observing the D allele may have influenced the ancestral contribution of the African population. These genetic data may be useful for future studies on the association between these polymorphisms and cancer in the investigated populations.

Key words: Admixed Population, INDEL , Polymorphism on promoter region.
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