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## INTRODUCTION

Cervical cancer is the third most frequent tumor in the female population and the fourth cause of cancer death in Brazil. The APOBEC3 (A3) family of proteins comprises seven members (A3A, -B, -C, -D, -F and -G). A common polymorphism present in the A3B gene has been associated with increased risk of breast and ovarian cancer and also reported as an important risk factor for the development of cervical cancer. A polymorphic deletion of 29.5-kb spanning from exon 5 in APOBEC3A to exon 8 in APOBEC3B creates a hybrid gene. The derived hybrid transcript is more stable than the wild-type versions; therefore, it may lead to increased intracellular levels, with subsequent higher DNA damage caused by APOBEC3 activity.

## OBJECTIVE

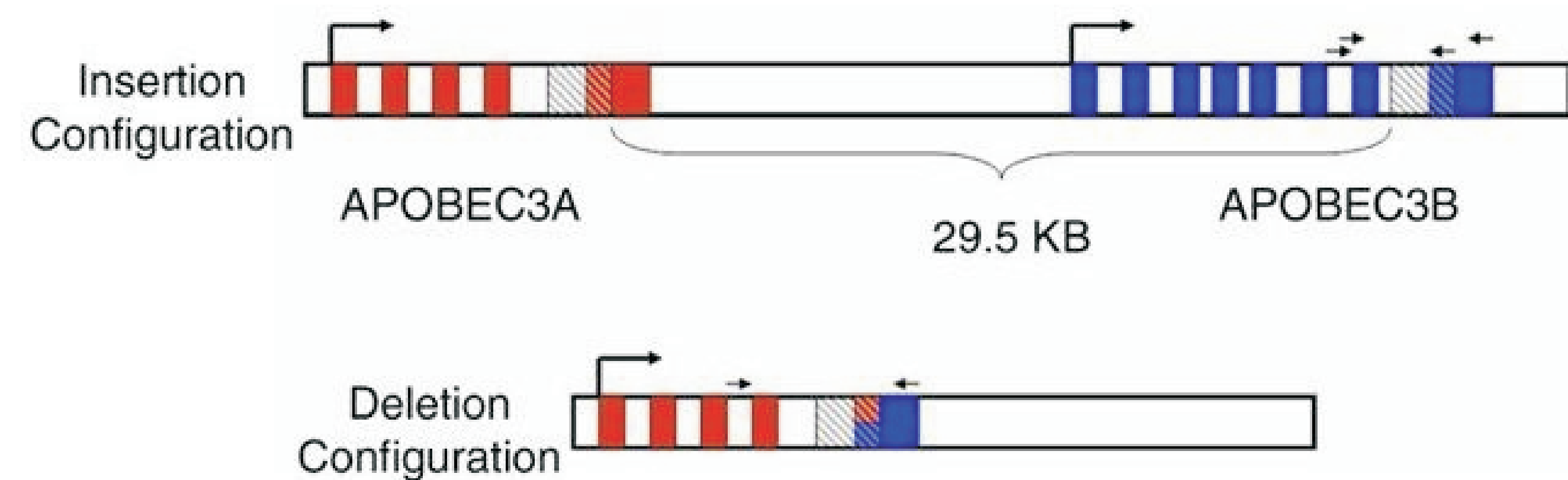
This study aimed to investigate the role of this polymorphism on the risk of cervical cancer development and also to determine its frequency in women from different regions of Brazil (South, Southeast and North).

## METODOLOGY

**South**  
430 control samples

**Southeast**  
414 control samples and 361 samples with cervical cancer

**North**  
128 samples with cervical cancer



Genotyping of A3 insertion/deletion was performed using PCR as described by Kidd et al. (2007).

## RESULTS

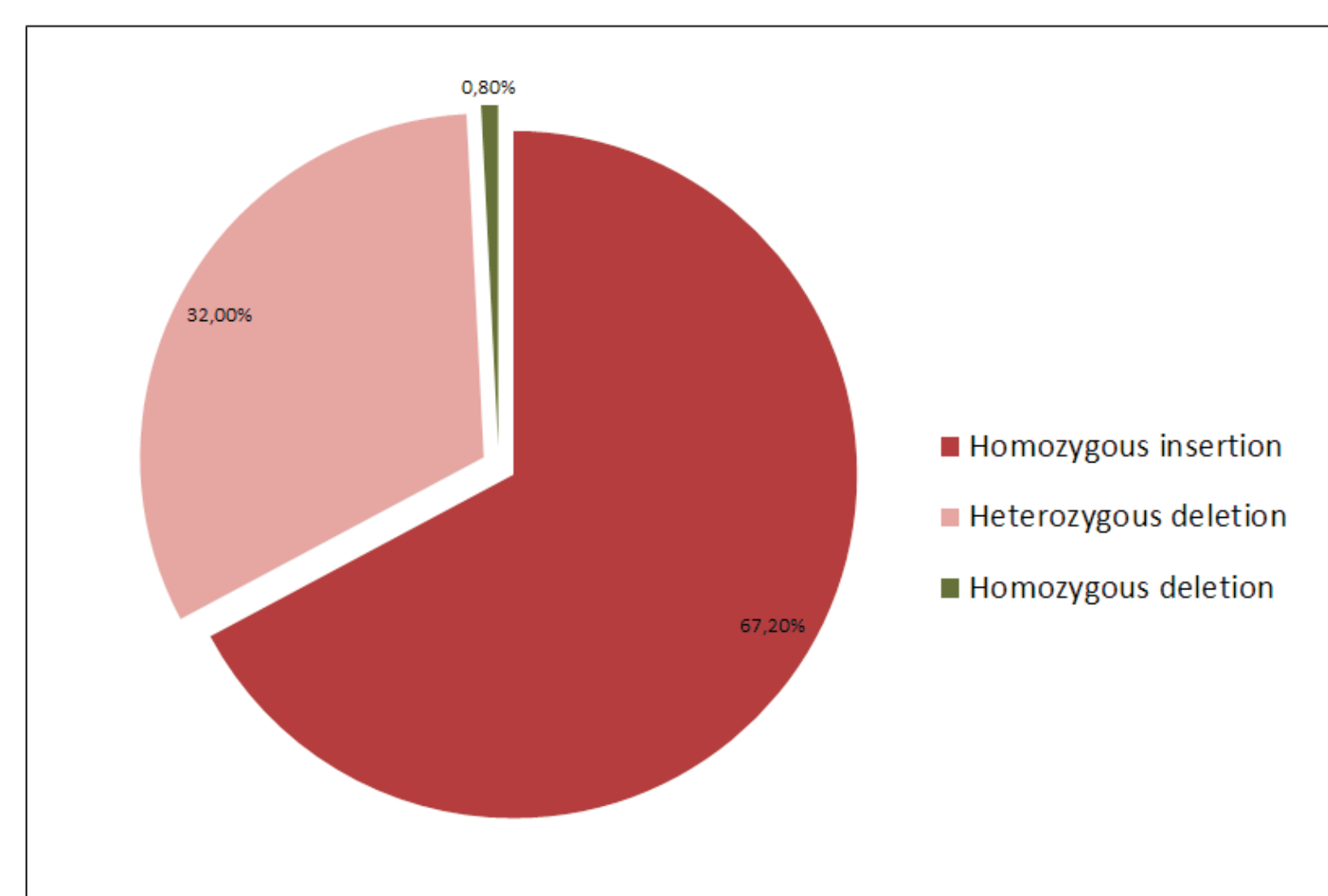


Figure 1: Distribution of the APOBEC3B deletion genotypes in women with cervical cancer in the Northern region.

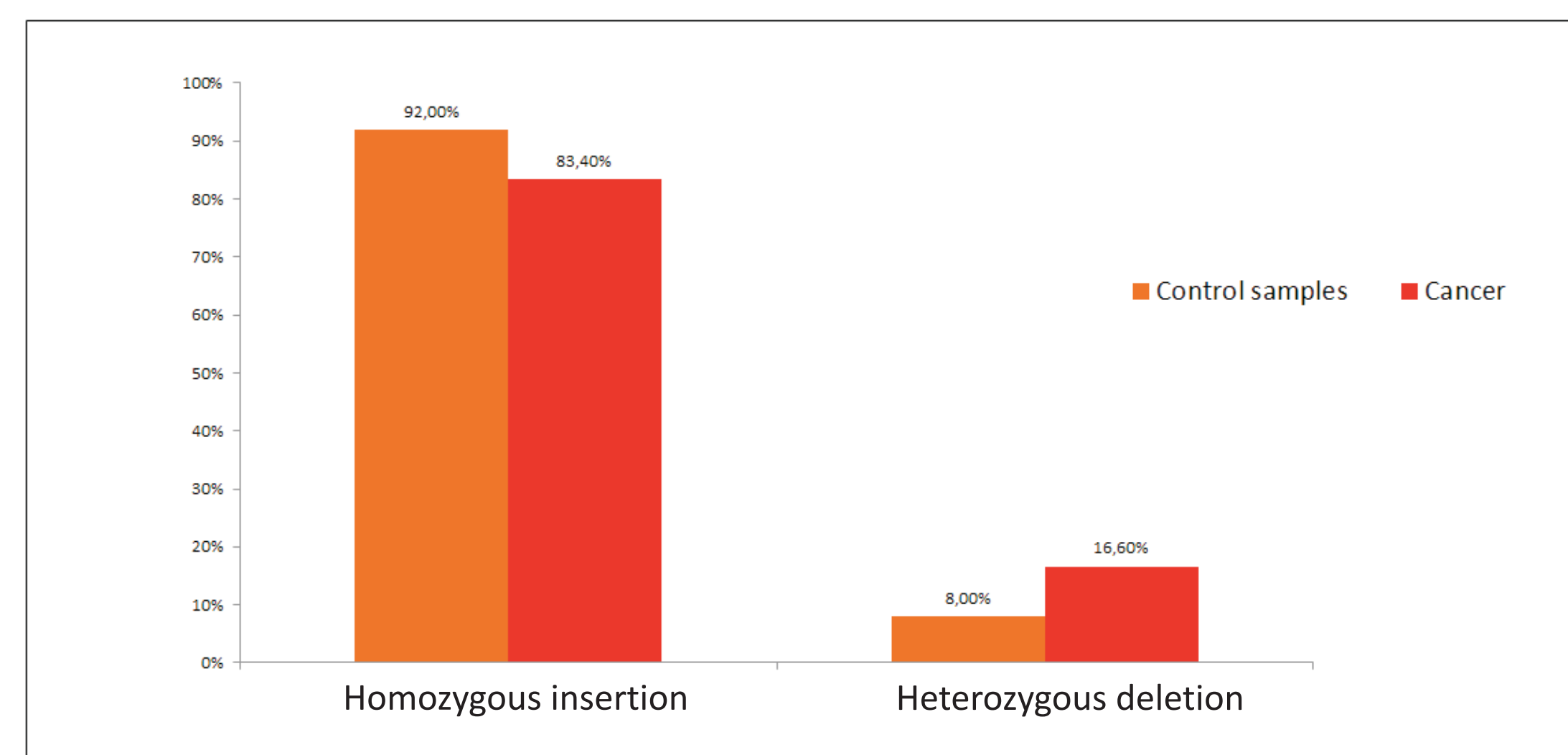


Figure 2: Distribution of the APOBEC3B deletion genotypes in control samples and with cervical cancer in the Southeast region ( $p < 0,001$ )

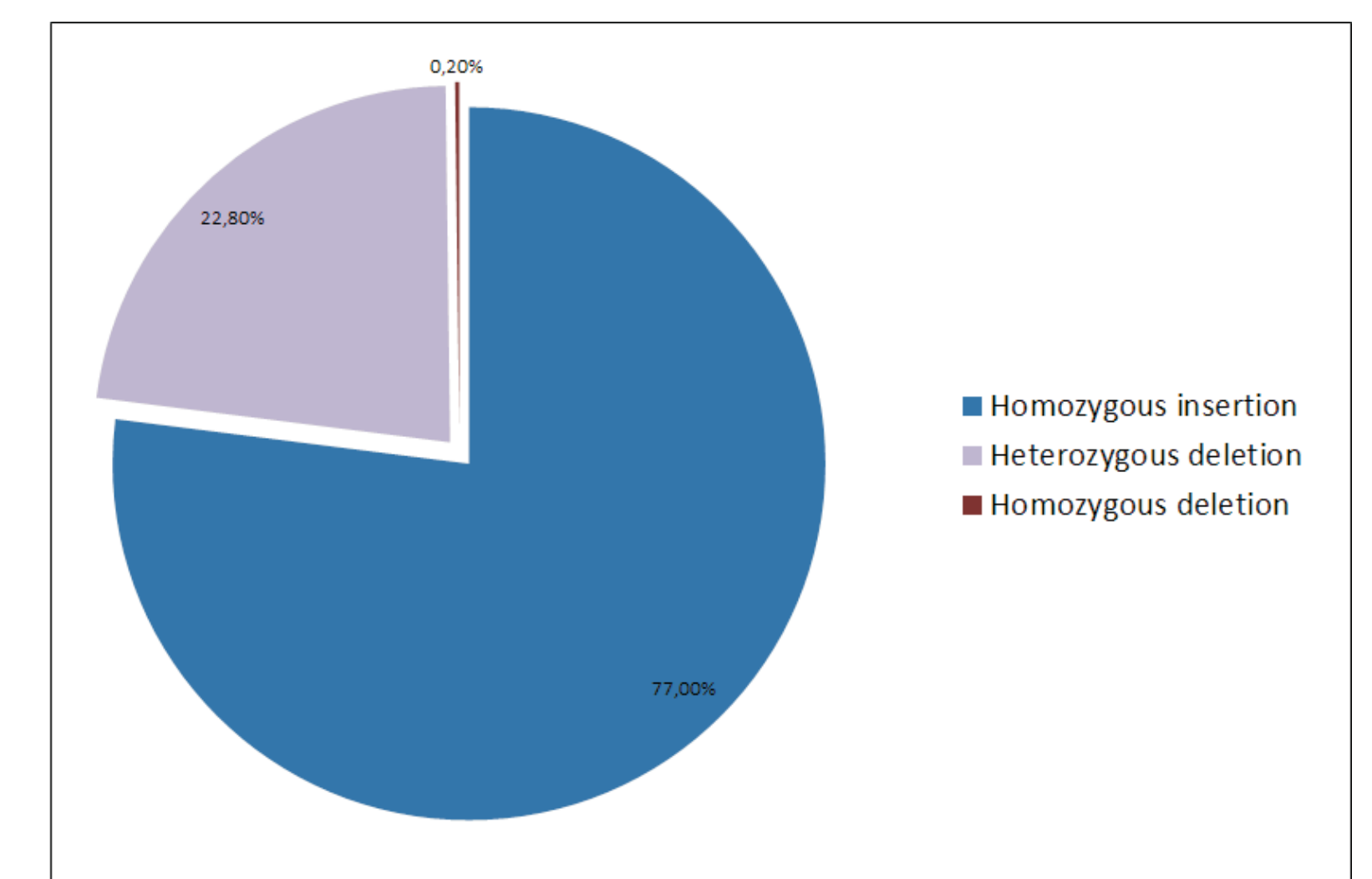


Figure 3: Distribution of the APOBEC3B deletion genotypes in control samples in the South region.

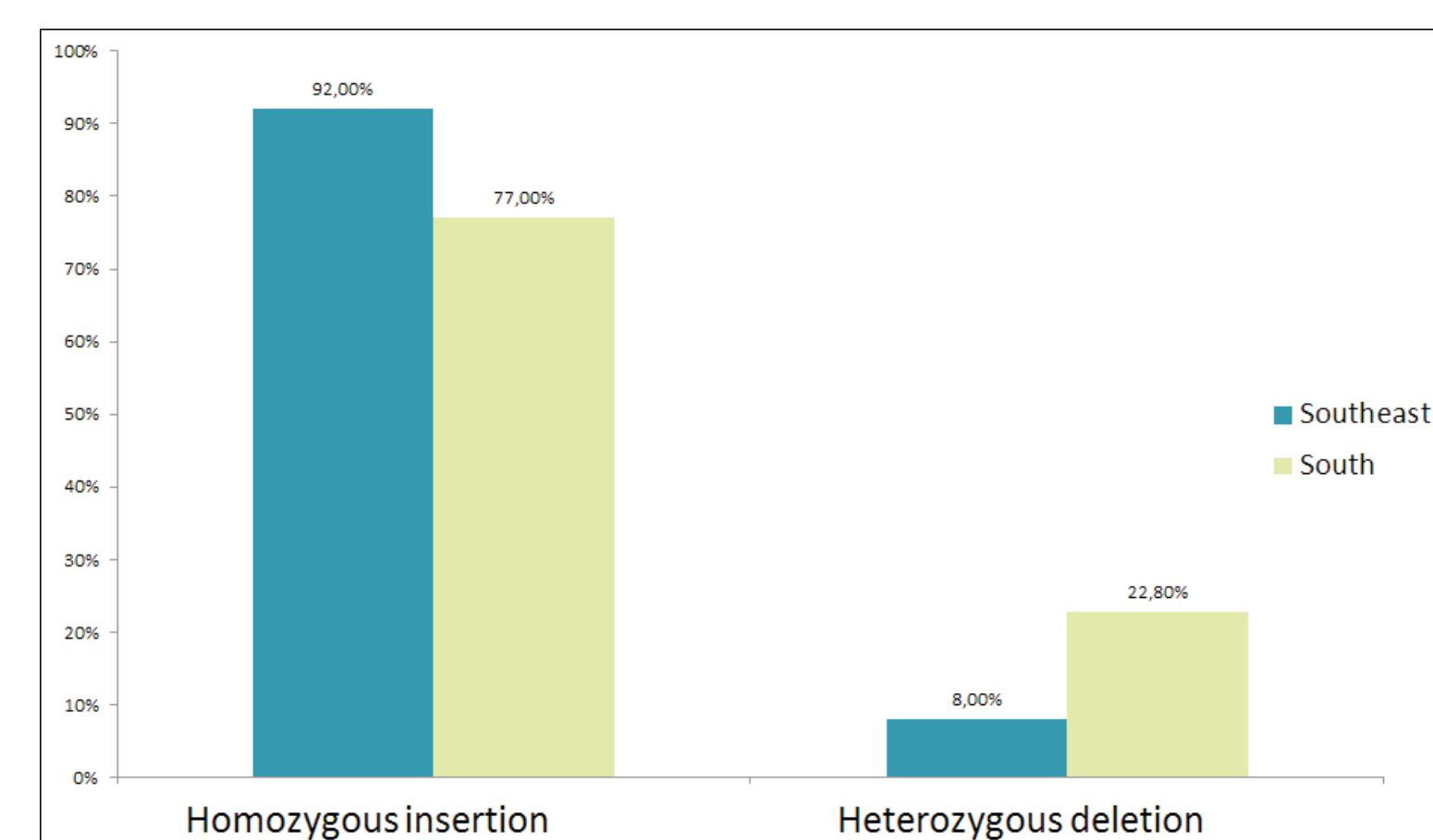


Figure 4: Distribution of the APOBEC3B deletion genotypes in control samples in the South ( $p < 0,001$ ) and Southeast region.

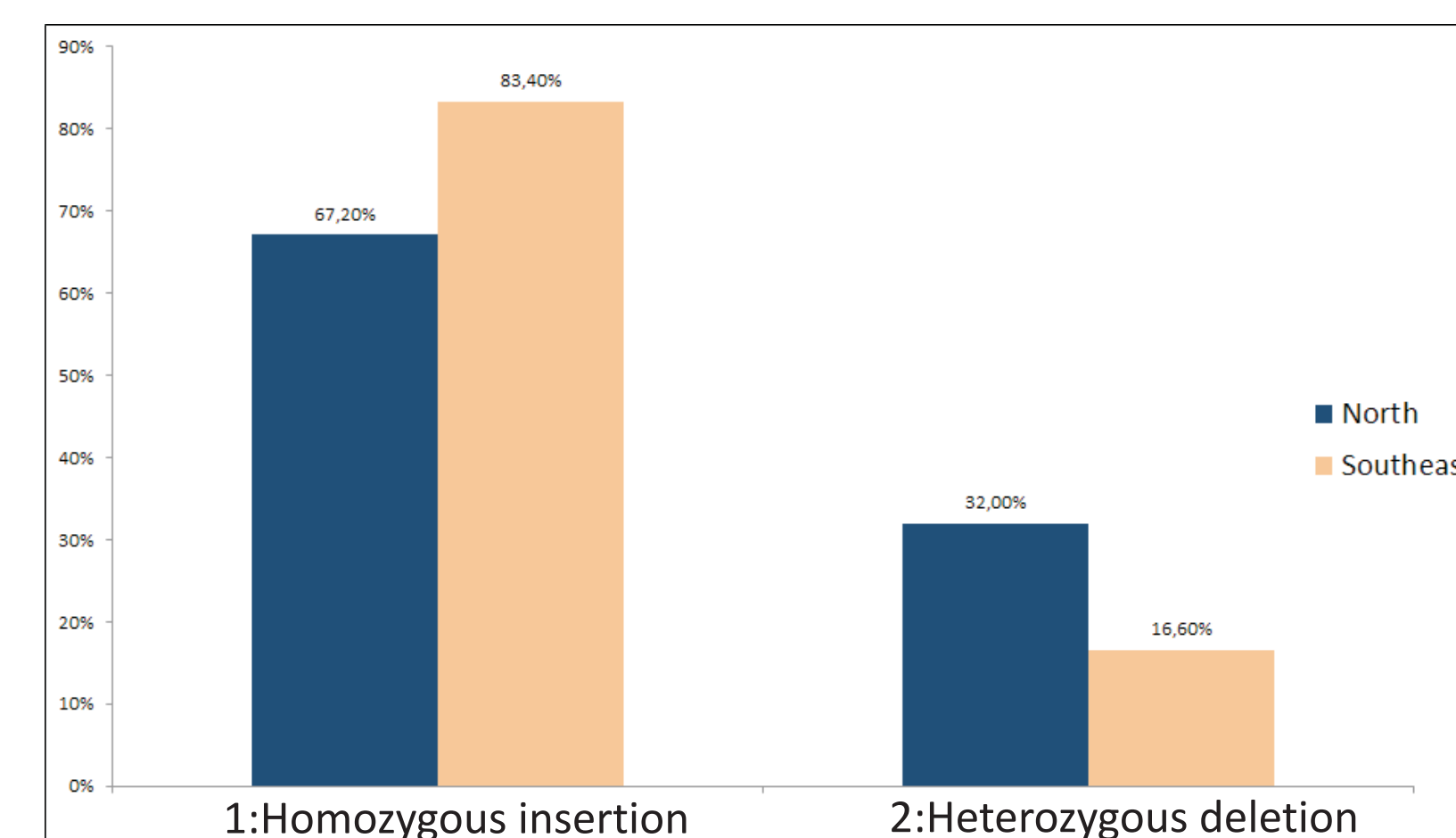


Figure 5: Distribution of the APOBEC3B deletion genotypes in samples with cervical cancer in the North ( $p < 0,001$ ) and Southeast region.

## CONCLUSION

This is the first study to describe A3B deletion polymorphism frequencies in different regions in Brazil and it also corroborates A3B relevance for cervical cancer.