CHARACTERIZATION OF cDNA scARP1 HOMOLOGOUS AP ENDONUCLEASE IN SUGARCANE

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It was found two possible genes (scARP1 and scARP3) that had homology to an AP endonuclease in sugarcane genome. This enzyme is associated with Base Excision Repair pathway and it recognizes the abasic site. This BER pathway is characterized in bacteria, yeast and human, however in plants is not well know. The aim of this work is to characterize the scARP1 cDNA in plants by the construction of an overexpression cassette. In order to do this, it was used a plasmid that has the strong promoter 35CaMV. As the plasmid and the scARP1 do not have compatible ends, both were digested with different restriction enzymes, treated with T4 DNA polimerase, ligated and then transformed into *E. coli* DH10B cells. Minipreps were done, it was identified one clone with antisense orientation. This clone was transferred to a binary vector, introduced into *Agrobacterium tumefaciens*, and tobacco and Arabidopsis plants were transformed. It was obtained one transgenic tobacco plant. This plant has a slow development and the flowers are not setting seeds. As it was observed by semi-quantitative RT-PCR the scARP1 cDNA is expressed in all tissues during sugarcane development. The _expression of this cDNA and others BER genes are being analyzed in the transgenic tobacco plant in order to understand the role of these genes in plants.

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