

Title Identification of genes differentially expressed at the onset of the ethylene climacteric in banana

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Abstract

The banana (*Musa acuminata* L. AAA group), a typical climacteric fruit, undergoes a postharvest ripening process that plays a crucial role in commercial banana fruit quality and shelf-life. To gain a better understanding of the postharvest ripening of the banana at the molecular level, we conducted a cDNA microarray analysis on banana fruit 10 d after harvest, which was the time of ripening initiation by ethylene biosynthesis. A total of 16 cDNAs were found to be up-regulated and six down-regulated. These results were confirmed by using reverse transcriptase-polymerase chain reaction (RT-PCR). The cDNAs identified are involved in signal transduction, amino acid metabolism, lipid metabolism, proteolysis, citrate biosynthesis and metabolism, and the uptake and transport of potassium. The information generated in this study provides new clues to aid in understanding the regulation of ethylene biosynthesis initiation in postharvest banana ripening.