

Abstract

Ripening in climacteric fruit is triggered by the action of ethylene and results in activation of several cell wall hydrolases. Their action on cell walls results in wall disassembly leading to softening. One of the exotic varieties of mango, 'Dashehari' (*Mangifera indica* cv. Dashehari), grown mainly in Northern India, suffers from rapid and uneven ripening making it unfit for export. Several biochemical and physiological studies have been performed to understand the process of ripening in this mango. However, there have so far been no substantial data on the molecular analysis of genes related to softening, in 'Dashehari', and other varieties of mango in general. We report here isolation and characterization of an α -expansin gene, *MiExpA1* that is correlated with softening in mango. The expression of this gene is under dual control, being triggered by ethylene treatment within 90 min followed by a ripening associated peak in transcript accumulation on the third day after ethylene treatment. At the protein level, expression of the expansin is detectable from the second day itself and continues throughout the course of softening. Treatment with 1-MCP inhibits both ripening/softening as well as *MiExpA1* transcript and protein accumulation. It is suggested that *MiExpA1* expression is ethylene dependent and its expression increases with the progression of ripening. This gene could be a good candidate for manipulating ripening in mango.