

## Abstract

Broccoli (*Brassica oleracea* L. var. Italica) senescens very rapidly at room temperature after harvest. Postharvest high temperature treatment reduced ethylene production and delayed yellowing of florets during storage. High temperature treatment suppressed 1-aminocyclopropane-1-carboxylic acid (ACC) synthase (ACS) activity and the accumulation of ACS transcripts (*BO-ACSI*). Increase in activity was correlated with that of ethylene production. Changes in ACC synthase activity seemed to reflect the expression of the *BO-ACSI* gene with a 1 day lag. High temperature treatment also suppressed ACC oxidase (ACO) activity. However, the changes did not seem to be related to those in ethylene production. High temperature treatment seemed to affect the accumulation of ACO transcripts (*BO-ACO1* and *BO-ACO2*) differently; the accumulation of *BO-ACO1* transcripts was delayed and that of *BO-ACO2* decreased. These results suggest that inhibition of ethylene production with high temperature treatment could be due to suppression of *BO-ACSI* gene expression.