

Title Screening and expression of differentially expressed genes for peel pitting of citrus fruit
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Citation ISHS Acta Horticulturae 712: 473-480. 2006.
Keywords citrus; peel pitting; suppression subtractive hybridization (SSH); differential expression gene

Abstract

Peel pitting is one of the important disorders of citrus that could affect the quality and decrease the market value of citrus due to deterioration of the peel. Searching the genes differentially expressed in citrus peel pitting would be an effective tool to protect citrus fruit quality. In this study, navel orange was used to screen differentially expressed genes in citrus peel pitting by suppression subtractive hybridization (SSH). The pitting peel and no-pitting peel were selected as the tester and driver, respectively. A SSH cDNA library was constructed. The library includes ~ 200 clones and the average insert size was around 300bp. Positive clones were randomly picked up and sequenced. Based on homology comparison with GenBank, six out of 50 clones haven't found homologic sequences and three were with unknown function. Four homologic genes: Ca²⁺ binding protein gene; cysteine proteinase gene; NAC-domain protein gene; expansin gene; were chosen to examine the relationship between their expression and citrus peel pitting through semi-quantitative RT-PCR analysis in pitting and no-pitting fruits. Results showed that the expression of those genes were all higher in the pitting peel than the control, which suggests that they may be linked with pitting and could serve as targets for future investigation.