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과제 일련번호: 9

Characterization of two Myb cDNA clones for mRNAs expressed during development of melon (*Cucumis melo* L.) fruits

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Two Myb genes (CmMyb1 and CmMyb2) were cloned by differential screening using High Density cDNA Library Array during fruit development in charentais melon. The CmMyb1 cDNA clone composed of 1274bp nucleotides which contains a 358bp 5' leader sequence, a 795bp open reading frame encoding a 265 amino acid, and a 121bp 3' untranslated sequence. The CmMyb2 cDNA clone is full-length, corresponded to a mRNA of 780bp encoding a 260 amino acid. Amino acid sequence analysis of the CmMyb1 showed the highest degree of conservation with MYB transcriptional factor of *Heava brasiliensis*, while the CmMyb2 was related with Myb(R2/R3) subgroup. Southern blot analysis revealed that CmMyb1 and CmMyb2 were encoded by single copy number genes. To study the subcellular localization of CmMyb1 protein, the gene was fused with soluble modified GFP gene and introduced into plast. CmMyb1:GFP fusion protein was likely to be localized in the nucleus. The amount of the CmMyb1 mRNA decreased rapidly from 18 day after pollination through subsequent stage of fruit development, while the CmMyb2 mRNA only accumulates during very early developmental stage. The accumulation pattern of mRNAs homologous to these Myb clones suggest that the genes have very important role in the initial stage of fruit development. To analysis the function of CmMyb1 and CmMyb2 in melon, we constructed the plant expression vectors, pCAMBIA3300 (35S/NOS):CmMyb1(S), pCAMBIA3300(35S/NOS):CmMyb1RNAi, pCAMBIA3300(35S/NOS):CmMyb2(S), pCAMBIA3300(35S/NOS):CmMyb2RNAi which contains baster resistance gene. Future works to generate sense and antisense transgenic melon plants using these clones, and analysis of the fruit phenotype, may help us to clarify their roles in development of melon fruits.

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