

**Genes Involving in Abscission from a Natural
Fruit-Abscission Apple, Akane**

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Akane, an apple cultivar, has a characteristic of natural abscission in lateral fruit, not in central fruit. Abscission is a fundamental and a highly regulated process of plant development. Though abscission in leaf, flower, and fruit has been studied in tomato and arabidopsis, little information has been known about abscission of woody plant. Firstly, we have carried out PCR subtraction using PCR-Select cDNA Subtraction Kit (Clontech), and Akane and Fuji mRNA. The PCR products were subcloned into pGEM-T easy vector (Promega) and transformed into *E. coli* SURE strain. Through dot blot analysis using plasmid pool, and Akane and Fuji cDNA probe, we have isolated several up-regulated Akane-specific cDNAs including cellulase, beta-1,3-glucanase, phosphate transporter, chitinase, nuclease, glyoxal oxidase, protein serine/threonine kinase, and RING finger protein. These cDNAs are stress-responsive genes. Especially it is known that cellulase and beta-1,3-glucanase are involved in abscission as cell wall-degrading enzymes. Molecular characterization such as gene cloning, *in vivo* function, and molecular interaction each other is on progress.

Keywords: Apple, abscission, Akane, cDNA subtraction