Poster Abstract – E.15

IDENTIFICATION AND CLONING OF A XYLOGLUCAN ENDO-TRANSGLYCOSYLASE GENE FROM *PRUNUS ARMENIACA*

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In the framework of a project aimed at studying ripening in apricot (*Prunus armeniaca*) we have employed a transcript profiling technique (cDNA-AFLP) to identify genes that show differential profiles during the onset of maturation. Following a database search, one of the transcript-derived fragments (TDF) showed significant similarity to xyloglucan endo-transglycosylase XET genes.

Xyloglucan is thought to be an important structural polysaccharide that binds cellulose and links together cellulose microfibrils. In plants there are at least three types of enzymes that modify the xyloglucan link, xyloglucan endo-transglycosylase being one of these.

XETs mediate the cleavage of the β -(1-4) bond of a xyloglucan of the primary cell wall and the transfer of the xyloglucanyl moiety onto the O-4 of the non-reducing terminal glucose residue of an acceptor, frequently another xyloglucan molecule. XETs perform not only cell wall assembly and expansion but also cell wall loosening. For that reason they are crucial in the mechanism of fruit softening.

Three different full-length cDNA clones were isolated by PCR techniques. Sequence analysis revealed the presence of single nucleotide polymorphisms (SNP) which could uniquely differentiate the three clones. Expression profiles during ripening were assessed by Northern analysis.

Phylogenetic analysis of the apricot XET was performed following multiple sequence alignment against 41 heterologous XET sequences available in the database.