

CHARACTERIZATION OF THE ACYL CARRIER PROTEIN GENE IN OLIVE

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Acyl carrier protein (ACP) is a small acidic protein that acts as an essential cofactor in many biosynthetic pathways depending on acyl transfer reactions.

In particular, ACP is a very abundant component of the fatty acid synthesis, due to the fact that most of the enzymes require acyl-ACP in their reactions.

Due to the main role played by ACP in the process of oil synthesis in olive fruits, the identification and characterization of the ACP gene was carried out.

In a first step of the work the complete 763 bp cDNA clone was identified and its expression during olive fruit ripening was evaluated.

Recently, the entire olive ACP gene, for a length of 2,920 bp, has been sequenced, in order to evaluate its structure, the number of loci and the number of haplotypes among different cultivars.

Three different loci have been identified, as expected from what observed in other species, each locus carrying different haplotype forms.

The three introns, respectively 729, 1,088 and 575 bp long, hold a high variability.

A 1,200 bp fragment, including the first and second intron, was sequenced on a pool of 90 cultivars in order to identify SNP and indel polymorphisms useful for cultivar discrimination and to establish the relationships between molecular profile and phenotypical behaviour.