## Poster Abstract - E.03

## APPLICATION OF cDNA-AFLP TO IDENTIFY SEQUENCE EXPRESSED BY THE VERAISON ON THE BERRY SKIN (*VITIS VINIFERA* CV. SANGIOVESE)

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## berry skin, ripening, cDNA-AFLP, TDF, putative function

The maturation of grape berries, like many other fruit, is accompanied by considerable physical and biochemical changes, which happened in particular during the veraison; a stage signaling the end of the berries development period and the onset of the ripening process.

The transformation involves also the berry skin, that progressively reduce its photosynthetic activities, increase the wall cells elasticity, and start to synthesize a lot of secondary metabolism compounds involved in the grape color, taste and pathogen resistance. The accumulation of this kind of substances is evident especially in red varieties, which start to be colored by the veraison moment, and is important for the qualitative and healthy property of the wine.

In order to investigate the molecular basis regulating the metabolic events taking place in this tissue by the veraison, amplified fragment length polymorphism (AFLP) based mRNA fingerprinting (cDNA-AFLP) was applied on berry skins (*Vitis vinifera* cv. Sangiovese) in three different development stage; 2 weeks pre-veraison (green stage), veraison (green-red stage), and 2 weeks post-veraison (red stage).

The cDNA-AFLP fragments, obtained by the three samples, were separated in parallel by acrylamide gel electrophoresis. Sixteen primers combination were tested and the AFLP bands, corresponding to gene expressed in the veraison and post veraison and absent in the pre-veraison stage, were identified. Twelve of these transcript-derived fragments (TDF) were extracted from the gel, cloned and sequenced. The analysis of their putative function revealed that the TDF are involved in different cellular activities related to the ripening process, as pathogen defense, cell walls modification, cell-behavior interaction and transcription regulation. Eight of the twelve TDF correspond to sequences already published in the vitis section of public database (NCBI and TIGR Gene Index ) and the other four are never characterized before in this kind of organism. Some of the TDF are analyzed by Real Time PCR and confirm that their expression start to increase during veraison, demonstrating that the cDNA-AFLP is a useful tool to isolate gene related to biological process.