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Poster Abstract – D.61

VOLATILE BENZENOID BIOSYNTHESIS IN *VITIS VINIFERA*

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Vitis vinifera, Petunia hybrida, benzenoid production

From the scent producing *P. hybrida* cv Mitchell was recently identified ODORANT1, an R2R3MYB-type transcription factor, which controls the synthesis of volatile benzenoids and regulates, at transcriptional level, shikimate pathway by the capacity to activate EPSPs promoter[1,2]

In this study we would like to identify genes involved in the synthesis of the principal volatile phenolic-benzenoids such as benzaldehyde (bitter almond taste in wine), phenylacetaldhyde, benzyll alcohol, 2-phenylethanol (rose) and vanilline (vanilla) that are found mainly in grape berry skin and that are involved in the primary aromas developing during berry ripening[3].

BlastP analyses were performed against the Genoscope Blast Server (www.genoscope.cns.fr) using the Petunia ODO1 sequence against the grapevine genome. [4].Three putative grapevine genes with the best sequences homology to PhODO1 were identified: VvODO1 (80%omology), VvODO2 (50% homology) and VvODO3 (56% homology) .

The level of the expression of each grapevine genes was analyzed in developing vegetative and reproductive organs of plants of *V. vinifera* cv. Corvina (clone 48) by real time RT-PCR experiments.

The transcriptional profile of these regulatory genes was also studied during development, maturation and withering of berries of *V. vinifera* cv. Corvina sampled in the season 2006.

VvODO1, VvODO2, VvODO3 were indepedently overexpressed in *P. hybrida* cv. Mitchell. Transgenic petunia plants and their flowers, expressing the heterologous genes, were analyzed for the expression levels of structural genes and their floral scent production.

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