

# **Anthocyanins biosynthesis triggered by some biotic and abiotic elicitors treatment, in callus extracts of two *Vitis vinifera* L. varieties**

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Anthocyanin biosynthesis has been extensively studied based on its large biotechnological applicability. Plant cell culture proved to be a feasible experimental system for anthocyanin biosynthesis using *V. vinifera* L. cultivars. Elicitation with biotic and abiotic stimuli provides an opportunity to enhance production of these compounds over levels found in intact plants and to identify possibilities for improving the biosynthesis using tissue culture.

In this context, we analyzed the possibility to stimulate anthocyanin biosynthesis using elicitors in a *long-term* callus culture initiated from *Vitis vinifera* L. cvs. Isabelle pericarp and in a primary callus culture of *Vitis vinifera* L. cvs. Negru Vartos initiated from leaf fragments. The results of the experiments revealed that the highest concentration of anthocyanins in the callus extracts of *Vitis vinifera* cvs. Isabelle could be achieved using a *two-stage* culture system. This involves the presence of combined elicitors treatment such as 2mM mannitol for the proliferative stage and 40  $\mu$ M jasmonic acid for the biosynthetic stage. The use of abscisic acid (20  $\mu$ M) in the second stage of culture proved to be the most efficient regarding anthocyanin biosynthesis in *Vitis vinifera* cvs. Negru Vartos. The original data obtained by us permitted to design possible new systems for the modulation of callus biosynthetic potential regarding anthocyanins.