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INTERNATIONAL CONFERENCE ON MEDICINAL, AROMATIC AND NUTRACEUTICAL PLANTS
FROM MOUNTAINOUS AREAS
February 14 - February 16, 2019
Dehradun, India



Abstract Submission Form

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Elicitation of stilbenoids in hairy roots of muscadine grape

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Stilbenoids are phenolic compounds with important antioxidant and anti-inflammatory properties. These natural products are synthesized by species from unrelated plant families like the Fabaceae and Vitaceae. In order to study the biochemical and molecular regulation of stilbenoid biosynthesis, hairy roots from muscadine grape (*Vitis rotundifolia*), a grapevine native to Southeastern United States, were induced by infecting leaves with *Agrobacterium rhizogenes* strain ATCC 15354. Several hairy root lines were obtained, and line 3A was selected based on their sustained growth in liquid cultures. A growth kinetics analysis of this hairy root line showed an exponential growth between the 6 and 24 days in modified Gamborg's B5 (BDS) medium. Hairy roots were grown for 21 days in BDS medium with and without growth regulators (IBA and BAP) and then treated with 100 μ M methyl jasmonate for 24 hours to induce the synthesis of stilbenoids. The latter compounds were extracted from medium and tissue with ethyl acetate. HPLC analyses of root and media extracts showed the presence of piceid, piceatannol, resveratrol, and *trans*- ϵ -viniferin. The addition of growth regulators to the hairy root cultures had no effect on the biosynthesis of these stilbenoid or in the total biomass of the hairy roots.