

12th Euro Biotechnology Congress

November 07-09, 2016 Alicante, Spain

Callus induction and secondary metabolites production in *Piper cf. cumanense* Kunth (Piperaceae)

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Piper cf. cumanense is a species of which have been isolated some compounds with promissory bioactivity, particularly to pest control in economically important crops and with potential use in parasitic diseases. However, these compounds have been obtained in low concentrations being important to use biotechnology strategies in order to obtain more quantities of bioactive substances. This study contributes to the investigations on this species in the development of strategies that improve the production of these compounds. Mature seeds were placed in MS medium supplemented with 3% (w/v) sucrose and 0.02 mg/L of gibberellic acid (AG3) for germination. Laminae and petioles were excised from young plants obtained *in vitro* and were cultured in MS medium supplemented with benzylaminopurine (BAP) and 2,4-dichlorophenoxyacetic acid (2,4-D) in combination at different concentrations for organogenesis and callus establishment. Excised young plants and callus were freeze-dried, powdered and extracted with ethyl acetate and analyzed by HPLC. The major production of friable callus was obtained using petiole as explant on MS medium supplemented with 2,4-D (1.0 mg/L) and BAP (0.5 mg/L). Callus presented oxidation and to overcome it, some strategies were used being frequent subcultures the most effective. HPLC chromatograms exhibited different patterns in major metabolites of the organs evaluated highlighting differences between *in vitro* and *ex vitro* leaves. This research provides basis for applying different strategies to increase metabolites production on *in vitro* cultures and for the development of biosynthetic studies.

Biography

Laura Katherine Rodriguez Sanchez is a Biologist, currently pursuing MSc in Biotechnology as a Member of the research group 'Estudio químico y de actividad biológica de Rutaceae y Myristicaceae colombianas' of the Universidad Nacional de Colombia on the lines of plant biotechnology, phytochemistry and chemoprospecting. Her areas of interest on research are plant biotechnology, phytochemistry and plant physiology.

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