Bioactivities, phenolic compounds and in-vitro propagation

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Abstract

The aqueous and alcoholic extracts of the fresh aerial parts of Lippia citriodora Kunth,
family Verbenaceae, cultivated in Egypt, exhibited variable antiinflammatory, antipyretic, analgesic
and antioxidant properties. Three phenolic compounds; two phenolic acids, dihydrocaffeic acid (1)
and 4-hydroxycinnamic acid (3) and a flavonoid glycoside, luteolin-7-O-glucoside (2), were isolated
and identified from the ethyl acetate fraction of the plant. The structures of the isolated compounds
were elucidated on the basis of spectral analysis. The effects of explant type, method of sterilization
and growth regulators on the in-vitro callus formation of L. citriodora were studied. Shoot tips and
leaf explants (cut in the midrib region) sterilized by soaking in 0.2% mercuric chloride for 5 min,
then washed twice with sterilized distilled water gave callus, on Murashige and Skoog (MS) medium
impregnated with 4 mg/L 6-benzyl amino purine (BAP). Spectrophotometric estimation of the total
flavonoids showed that the fresh in-vitro formed callus contained 68.4% of the total flavonoids of
the fresh aerial parts of the conventional plant.

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