

Journal of Chemical, Biological and Physical Sciences



An International Peer Review E-3 Journal of Sciences

Available online at www.jcbpsc.org

Section E: Plant Biotechnology

CODEN (USA): JCBPAT

Research Abstract

Obtaining Hairy Roots of *Acourtia hebeclada* DC for Production of Perezone

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Abstract: Genus *Acourtia* contain more than 110 species that produce and accumulate in their roots a wide variety of sesquiterpene quinones and related compounds. Between such plant species *Acourtia hebeclada* DC, known as pipitzáhuac, produces the sesquiterpene quinone perezone. Perezone forms deep orange color crystals which reduces readily and reoxidizes spontaneously. This substance can be used as pigment, as antimicrobial agent and possesses several pharmacological activities. We established a protocol for obtaining hairy roots from *A. hebeclada* by infecting leaf explants from in vitro cultured seedlings with the *A. rhizogenes* strain ATTC 15834/pTDT-RNAi. Then infected and control explants (not infected) were placed in Murashige and Skoog co-culture medium amended with sucrose, α -naphthaleneacetic acid, 6-benzylaminopurine and acetosyringone. After cocultive explants were subcultured on half strength MS medium containing ceftriaxone and cefotaxime to eliminate *Agrobacterium*. Transformed hairy roots were observed 21 to 28 days after infection under epifluorescence microscope and fluorescent roots were selected. During the selection process we found red fluorescent hairy roots but others that were non fluorescent as well. Selected hairy roots were grown to produce enough biomass to make hexane extracts and HPLC analysis. The chromatograms obtained revealed presence of sesquiterpene related compounds.

Keywords: Perezone, hairy roots, *Acourtia hebeclada*, *Agrobacterium rhizogenes*

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