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Effect of growth regulators on the production of thymol in suspension cultures of *Nigella sativa* Linn.

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Nigella sativa is an extensively studied plant for its medicinal properties which are attributed because of the active constituents like thymoquinone, thymol, p-cymene, pinene, dithymoquinone etc. Present study deals enhanced production of thymol (2-isopropyl-5-methylphenol) a natural monoterpene phenol in the suspension culture of the *Nigella sativa* cultured in Erlenmeyer flasks (250 ml) placed in an incubator shaker at 110 rpm and at 25±1°C with a 16 hr photoperiod each containing 100 ml of Murashige & Skoog medium. Friable, soft and white calli of epicotyl region of the in vitro grown seedlings were used for the initiation of suspension cultures. Different combinations and concentrations of the growth hormones were tried to elucidate their effect on the thymol production. Presence of thymol was detected by employing one dimensional thin layer chromatography with toluene:chloroform:etanol (40:10:10) as mobile phase and keeping thymol as standard. Results showed the culture supplemented with KN (2 ppm) +NAA (1 ppm) gave a large pink spot with R_f value of 0.74 as compared to the standard and negative control which gave a small pink spot with Rf value 0.75 and diminished spot with R_f value 0.70 respectively. Therefore, this study can be efficiently used to specifically produce and enhance the production medicinally important compound thymol by employing plant tissue culture techniques.

Biography

Hera Chaudhry is pursuing Ph.D. from Integral University, Lucknow, India from the Department of Biosciences. She is awarded with national level scholarship. She has got many research abstracts published related to her Ph.D. work. She has actively attended many national and international level conferences and symposiums. She has been awarded for her presentations in these conferences.

Anti-inflammatory and antioxidant activities of leaf extract of *Petersianthus macrocarpus* (Lecythidaceae)

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Petersianthus macrocarpus (Lecythidaceae) leaf is widely used in the folk medicine of the South East of Nigeria to relieve pain and "re-current" fever associated with malaria. Methanolic leaf extract of *Petersianthus macrocarpus* was investigated for its antioxidant activity using, scavenging of 1,1-diphenyl-2-picrylhydrazyl (DPPH) radical, assessment of reducing power and iron chelating activity. Total phenolic content was evaluated according to the Folin-Ciocalteu procedure. The anti-inflammatory activity of the extract was evaluated by the use of carrageenan and egg albumin induced paw oedema model in rat. The radical scavenging ability of the extract increased with concentration. The IC50 values obtained for the extract and for Vit. C in the study were 0.15 mg/ml and 0.03 mg/ml respectively, indicating that Vit. C has stronger scavenging power than the extract. The radical scavenging activities of aqueous and ethylacetate fractions (0.1 mg/ml; 93.72% and 93.42% respectively) were slightly higher than ascorbic acid (93.19%). Chloroform and hexane produced significantly lower activity, 40.55% and 28.55% respectively. The extract shows good reducing power ability compared to the standard antioxidant (Vit. C) in a dose dependent manner. In comparison with EFDA, the extract has poor chelating property. The total phenolic content was 84.00 mg/g. The extract (500 mg/kg) and the control, acetyl salicylic acid (100 mg/Kg) reduced significantly the formation of carrageenan induced oedema, 87.39%/90 min and 90.02%/90 min respectively. The extract showed a lower activity in the egg albumin model of anti-inflammation activity compared to control, acetyl salicylic acid ((54%; 3 hr and 60%, 3 hr respectively).

It can be concluded that the extract of *Petersianthus macrocarpus* leaf has anti-inflammatory and antioxidant activities, which justifies its use in herbal medicine to relief pain.

Keywords: *Petersianthus macrocarpus*, Anti-inflammation, Antioxidant