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In vitro antimicrobial activity of carrot callus extracts as affected by tyrosine and tryptophan precursor

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Abstract : Antimicrobial activities of crude ethanolic and water extracts of the calli cultures of *Daucus carota* were investigated. Stem, petiole and root derived calli were obtained on solid MS medium supplemented with 1 mg/l BAP + 2 mg/l NAA and fortified with different concentrations of tyrosine (Tyr) or tryptophan (Trp). The extracts exhibited antibacterial activities with zones of inhibition ranging from: 7 to 30 and 20 to 24 mm in stem callus; 16-32 and 21-27 in petiole callus; 15-20.3 and 5-15 in root callus for ethanol and water extracts respectively in case of gram-positive bacteria. On the other hand only ethanolic extract of stem cultures shows inhibition effect on gram-negative bacteria with zones of inhibition ranging from: 5 to 31 mm. The crude extract did not show any antifungal activity against *Aspergillus niger* strain. Moreover, the zones of inhibition exhibited by the extracts against the test yeast species ranged from 11 to 35 and 12 to 26 mm in stem callus for ethanol and water extracts respectively. Petiole callus extract shows an inhibition activity ranged from13 to21.6mm only with ethanol extract. Addition of 200mg/l tryptophan declared the highest inhibition zone of all calli cultures in ethanolic extract of stem callus (35 mm) followed by petiole callus (32 mm) and root cultures (20.3 mm).
Keywords: *Daucus carota*, crude extract, Antimicrobial activity.

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