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ESTABLISHMENT OF IN VITRO REGENERATION PROTOCOL AND DEVELOPMENT OF HAIRY ROOT CULTURE IN AERVA LANATA WITH AGROBACTERIUM RHIZOGENES

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The *Aerva lanata* belongs to the family *Amaranthaceae* and has the high medicinal values. The present study focused on *in vitro* regeneration of plant through tissue culture techniques and induction of hairy roots from stem internode explants by using various *Agrobacterium rhizogenes* strains such as A4, A4T and A4RS. Multiple shoots were induced from the stem explants on the MS medium containing BAP 0.5 mg/l and IAA 0.25 mg/l. Around 5.42 ± 2.11 shoots were observed per explant with average shoot length of 2.19 ± 1.2 cm. After 3-4 weeks of incubation the cultures were transferred to root induction medium containing 0.5 to 1.0 mg/l of IBA. Root initiation was occurred in 7-10 days on a half strength MS medium supplemented with 0.5 mg/l IBA. Healthy plants were transferred to greenhouse, were infected with bacterial strains A4, A4T and A4RS for hairy root formation from internodes. The explants infected with A4RS strain showed maximum hairy root emergence within 8-10 days whereas, A4 and A4T strains fail to influence hairy root emergence. Strain A4RS was proved to be more virulent than A4 and A4T with highest transformation frequency of 83.33 %. Symbols: A4, A4T, A4RS - *Agrobacterium rhizogenes* strains; MS medium – Murashige and Skoog medium; BAP - 6-benzyl aminopurine; IAA/IBA – Indole acetic acid/ Indole butyric acid.

Biography

Shreyoshi Biswas is presently working as a Researcher in Shanghai Jiao Tong University (China). She has eight years of experience in Molecular Biology, Microbiology, Biochemistry, Protein chemistry and Bioinformatics fields. She is the Member of North American Academic Research Journals and has been serving as an Editorial Board Member.

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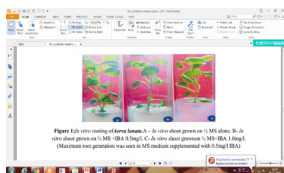


Figure 1: In vitro rooting of *Aerva lanata*. A - In vitro shoot growth on MS medium; B - In vitro shoot growth on MS + 0.5 mg/l BAP + 0.5 mg/l IBA; C - In vitro shoot growth on MS + 0.5 mg/l BAP + 1.0 mg/l IBA. (Maximum root generation was seen in MS medium supplemented with 0.5 mg/l IBA)



Figure 2: Hairy root development with internodal explants of *Aerva lanata* following co-cultivation with various strains of *Agrobacterium rhizogenes*.