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AFLP marker for estimating relatedness and variations among the normal, tissue cultured and AMF treated plants of *Andrographis paniculata* L.

P Anitha and D H Tejavathi
Bangalore University, India

Andrographis paniculata L., a member of Acanthaceae is a highly promising potential medicinal plant used worldwide for its wide range of pharmaceutical properties. The plant is used in traditional Chinese medicine (TCM), Ayurveda, Unani and Siddha systems of medicine. It contains Andrographolide esters which has got paramount importance in pharmaceutical field. Genetic analysis of normal, regenerated and Arbuscular Mycorrhiza Fungi (AMF) treated plants were performed using Amplified Fragment Length Polymorphism (AFLP) markers to facilitate reasoned scientific decisions on its management, conservation and for selective breeding programme. Normal and tissue cultured plants were treated with *Glomusmosseae* and *G. fasciculatum* to study the effect of symbiosis on the growth performance of both normal and tissue cultured plants. Analyses of morphological characters of tissue culture plants raised through nodal cultures and VAM treated plants have revealed phenotypic variations which prompted us to analyze the six samples through the molecular markers. AFLP markers were selected because of their widest application in analyses of genetic variations within the populations. Combinations of EcoR-I / Mse-I and Pst-I/ Mse-I were used for double digestion of the genomic DNA. 15 primer combinations were tried, out of which 6 combinations (Pst-I/ Mse-I) gave best results with bright and clear bands. The total number of bands produced for normal, regenerated and AMF treated plants were 641. Of these 495 bands was polymorphic indicating 77.2% of polymorphism. Analysis of molecular variance (AMOVA) revealed statistically significant differences between normal, tissue cultured and AMF treated plants. Based on this data binary matrix was prepared, dendrogram was constructed using NTSYS-PC version-2 and UPGMA.

Biography

P Anitha is working as an Associate Professor in the Department of Botany at MES College, Bangalore (Deputed from BMS College for Women, Bangalore). She has published 10 research articles and presented research papers in various international and national journals/conferences and completed 2 research projects funded by UGC and VGST. She was conferred with an award of "Talented Scientist Award" for her outstanding contribution to the medicinal plant research during the 4th international conference on medicinal plants and herbal products held at John Hopkins University, Rockville, MD, USA, 2012.

anitha4959@yahoo.co.in

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