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Diversity Of Endophytic Fungi For Taxol Production From Medicinal Plants In And Around Sathyamangalam

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Abstract:

Sathyamangalam is a town and municipality in Erode district in the Indian state of Tamil Nadu surrounding with dense forest and agricultural lands. There is a lack of knowledge on traditional medicine from the available plants. This study was designed to disseminate the knowledge to public via determining the diversity of medicinal plants and endophytic fungi which is required for the large scale production of taxol. Taxol is an anticancer compound. It inhibits cell proliferation and can be produced in large scale which has very high demand towards controlling the cell division and it has been found to inhibit the growth of certain cancers. Since Taxol is produced as a secondary metabolite by various endophytic fungi, they were isolated from the medicinal plants, *Justicia adathoda* (leaf and stem) and *Vitex negundo* (leaf, stem and root). Then it was identified by their characteristic cultural morphology, molecular analysis and screened for taxol production. The efforts have been made to enhance taxol production via media optimization by Plackett-Burman and Response surface methodology (RSM). The absorbance reading at 238 nm is measured using UV-Visible Spectrophotometer for confirmation and it was analyzed by Thin layer chromatography and High Performance liquid chromatography for further confirmation. This is followed by purification steps and finally the pure crystals recovered are dried in desiccators and weighed. Diversity of endophytic fungi residing in the medicinal plants has been identified and good producer of taxol can be screened.

Key words: Endophytic fungi, Taxol, Medicinal plants, Anticancer control

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