Screening and identification of taxol producing endophytic fungi from endangered medicinal plant.

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ABSTRACT

An endophyte is an endosymbiont, often a bacterium or fungus. It lives within a plant for at least part of its life without causing apparent disease. In this study, 25 endophytic fungal isolates were obtained from root of *Tylophora indica* (Burm.f) and screened for presence of taxol. Among the 25 isolates, *Fusarium solani LCPANCF01* was identified based on the micro morphology, cultural characteristics and sequence analysis by using internal transcribed spacer (ITS1 & ITS4). The sequence was submitted to GenBank (JN786598). The *F.solani LCPANCF01* strain was grown in M1D liquid medium for 21days and it was extracted by using dichloromethane. The presence of taxol was confirmed by using TLC, UV, IR, HPLC and ESI-Mass spectroscopy analysis by comparing with standard drug. The amount of taxol was quantified as 247µg/L in HPLC. The isolated fungal taxol was screened for anticancer activity by *in vitro* cytotoxicity assay using VERO and HeLa cell lines. The results suggest that the endophytic fungi present in *T.indica,* showed anticancer activity. The discovery of such microbiological production of drug can revolutionize the search for effective pharmaceutical agents to control cancer.

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