ANTIMICROBIAL ACTIVITIES OF ENDOPHYTIC FUNGI ISOLATED FROM *FIMBRISTYLIS MILIACEA*

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Abstract

Endophytes are known to biosynthesis various bioactive secondary metabolites. Sri Lanka has a high rate of endophytic fungi of *Cyparaceae* Plant. Grasses and sedges are reported to harbour a lot of endophytic fungi & sedges are sparsely investigated for endophytic fungi and bioactive metabolites. Therefore the aim of this study is investigation of the antimicrobial activities of the endophytes of *Fimbristylis miliacea*, which may lead to the discovery of new drugs. Endophytic fungi were isolated from the surface sterilized roots and aerials parts of *F.miliacea* collected from Badulla & Mawanella and the antimicrobial activities were evaluated against *S.aureus, P. aeruginosa, E.coli* & *B.cereus* at 400 µg/disc concentration using agar disc diffusion method. The two most bioactive fungi were identified by morphological features and slide cultures. Ten & twenty morphologically distinct endophytic fungi were isolated from Badulla & Mawanella respectively. All the ten extracts from Badulla showed activity for at least one bacterium tested. Three extracts showed activity against all the four bacterial species while six extracts showed activity against three bacteria tested. Prominent activities (16 and 13 mm inhibition zones) were shown by the extracts FMR4 and FMR6 against *B. cereus*. The two most bioactive fungi FMR4 & FMR6 were tentatively identified as *Fusarium* sp. In conclusion, the data obtained from the current study revealed *F. miliacea* harbor endophytic fungi which produce secondary metabolites with antibacterial activities.

Keywords: Endophytic fungi, Secondary metabolites, *Fimbristylis miliacea,* Antimicrobial, *Fusarium* sp.