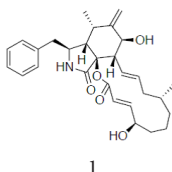


## Antibacterial cytochalasin B from endophytic *Curvularia lunata* isolated from *Cyperus iria* of Sri Lanka

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Antibiotic resistivity of bacteria has been increasing rapidly over the last few decades and currently it has become a severe human health crisis in the world. Therefore, isolating novel antibacterial drug leads from natural sources has become an essential requirement in today's world. Thus, the main aim of the current study was to isolate the antibacterial compounds from the endophytic fungus *Curvularia lunata* isolated from an underutilized plant *Cyperus iria* of Sri Lanka. During a preliminary research *C. lunata* fungal extract showed antibacterial activity against Gram positive *Staphylococcus aureus* and *Bacillus cereus*. Hence the fungus was grown in large scale in 140 Petri dishes and was extracted to ethyl acetate after 21 days of incubation. The ethyl acetate crude extract (354 mg) obtained was purified using bioassay guided fractionations using a series of solvent/solvent fractionations, Sephadex LH20 size exclusion chromatography using methanol as the eluent, normal phase silica gel chromatography using a gradient elution and finally by reversed phase high performance liquid chromatography to isolate the major bioactive compound. The structure elucidation using  $^1\text{H}$ ,  $^{13}\text{C}$  and 2D (COSY, HSQC, HMBC) nuclear magnetic resonance (NMR) and mass spectroscopic data revealed the identity of the major bioactive compound as cytochalasin B (1). Cytochalasin B showed prominent antibacterial activity with a minimum inhibitory concentration (MIC) of 64  $\mu\text{g}/\text{mL}$  against *S. aureus* while the positive control Gentamycin showed a MIC of 4  $\mu\text{g}/\text{mL}$ . Further purification of other bioactive fractions with interesting  $^1\text{H}$  NMR spectra may lead to novel antibacterial compounds. This study reveals that endophytic *C. lunata* of *C. iria* are potential producers of antibacterial compounds.



**Keywords:** *Curvularia lunata*, Antibacterial compounds, Cytochalasin B

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