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Isolation of Endophytic Fungi from *Plectranthus amboinicus*: A Novel Source of Antimicrobial Agents

Endophytic fungi produce secondary metabolites that might prove to be an important source of bioactive compounds. Endophytes derived from medicinal plants have shown promising results in terms of producing bioactive substances which are highly potent antimicrobial substances. In this study, 10 distinct endophytic fungi were isolated from the plant *Plectranthus amboinicus*. Ethyl acetate crude extracts of the fungal isolates were tested for their antimicrobial activity against the test pathogenic bacteria *Escherichia coli*, *Staphylococcus aureus*, *Pseudomonas aeruginosa*, and *Bacillus subtilis* using disc diffusion assays. Two fungal isolates (CALF1, CALF4) out of the 10 fungal isolates tested showed antimicrobial activity against the test pathogenic bacteria. The zone of inhibition ranged from 13.5 mm to 36 mm for CALF1 and from 11 mm to 22.5 mm for CALF4. *B. subtilis*, *S. aureus* and *E. coli* showed greater susceptibility than *P. aeruginosa* to both CALF1 and CALF4 endophytic fungal extracts. The MIC values ranged from 3.12 mg/mL to 6.25 mg/mL. *B. subtilis* and *E. coli* showed the highest susceptibility (at 3.12 mg/mL), while *S. aureus* and *P. aeruginosa* exhibited the least susceptibility (at 6.25 mg/mL) to CALF1. For isolate CALF4, all test bacteria showed susceptibility at 6.25 mg/mL. These isolates will be identified by analysis of 18s RNA gene sequencing and the bioactive compounds in the crude extracts of the two isolates were identified by GC-MS analysis. These findings highlight the potential of endophytic fungi from *P. amboinicus* as a promising source of novel antimicrobial agents, requiring further investigation into their bioactive compounds.

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