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# *Abstract Book*

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# I-CReST 2025: 038-015 – Wide-spectrum Antibacterial Endophytes Associated with Malaysian Medicinal Plant

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## ABSTRACT

The rising prevalence of multidrug-resistant (MDR) bacterial infections has ignited a worldwide health crisis, rendering massive synthetic antibiotics ineffective and resulting in notable morbidity and mortality. As the antibiotic pipeline grows depleted, there is a greater need for novel antibiotic discovery, particularly from natural resources. Medicinal plants, which have long been utilized in conventional medicine, serve as a potential repertoire for endophytes, an untapped source of bioactive metabolites with antibacterial potential. Thus, the current study aimed to isolate potential antibacterial endophytes from various Malaysian medicinal plants and screen their antibacterial potential against a wide spectrum of MDR bacteria. A total of nine Malaysian medicinal plants and sixteen test bacteria were used in this study. Surface sterilization method was employed to isolate endophytic fungi from selected medicinal plants. The agar plugs diffusion assay was employed to screen the antibacterial potential of endophytic fungal isolates. The results revealed that 345 endophytic fungal isolates were successfully obtained in this study, with 62.6% demonstrating antibacterial potential against at least one test bacterium. The highest percentage of endophytic fungal isolates with antibacterial potential was recovered from *Terminalia catappa* (90.4%). *Staphylococcus aureus* was the most susceptible to endophytic fungal isolates, with 21.3% of inhibitory activity. The findings highlight Malaysian medicinal plants as a potential source of endophytic fungi capable of combating MDR bacteria, paving the path for the next generation of effective antibiotics.

**Keywords:** Mmultidrug-resistant bacteria; Medicinal plant; Endophytes; Antibacterial potential