



Antifungal Activity of Endophyte Bacterial Isolates From torch Ginger (*Etilingera elicitor*(Jack.) RM Smith)) Root to Some Pathogenic Fungal Isolates

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Abstract : A study on assay of antifungal activity of endophytic bacterial isolates from root of torch ginger (*Etilingera elicitor*(Jack.) RM Smith), known as kecombrang by natives, to some plant pathogenic fungi has been conducted. Bacterial characterization was carried out by microscope observation and simple biochemical tests. Antagonist assay was carried out to plant pathogenic fungi such as *Fusarium oxysporum*, *Rhizoctonia solani*, *Sclerotium rolfsii*, *Rigidoporus microporus*, and *Culvularia* sp. and of fish pathogenic fungi such as *Saprolegnia* sp. using paper disc method in potato dextrose agar. To extract antimicrobial compounds from selected endophytic bacterial isolates, organic solvents such as methanol, ethyl acetate, and n-hexane were used, followed by preliminary chemical compound test of bacterial cell extract. Bacterial cell extracts were subjected to antifungal assay. Eleven bacterial isolates consisted of seven Gram-negative and four Gram-positive were found from the root. Antifungal assay showed that the bacterial isolates varied in inhibiting the fungal growth. Three isolates, IAK3, IAK9, and IAK11 were chosen for further study based on their higher ability to inhibit the tested fungi. Ethylacetate extract of IAK9 cells showed more effective to inhibit *R. solani*, while n-hexane extract of IAK11 showed to inhibit more on *R. microporus*. Preliminary chemical test of the bacterial cell extracts showed that methanol extract of the three isolates contained alkaloids, terpenes/steroids and saponins, while ethyl acetate extract contained alkaloids and terpenes/steroids, and n-hexane extract contained terpenes/steroids.

Keywords : antifungal activity, *Culvularia* sp., *Etilingera elicitor*, *Fusarium oxysporum*, *Rhizoctonia solani*, *Rigidoporus microporus*, *Saprolegnia* sp., and *Sclerotium rolfsii*.

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