ISOLATION OF ANTIOXIDATIVE CONSTITUENTS OF *Cosmos caudatus* AND ITS ANTIBACTERIAL ACTIVITY AGAINST PLANT DISEASE - CAUSED MICROBE

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ABSTRACT

INVESTIGATION OF ANTIOXIDATIVE CONSTITUENTS OF *COSMOS CAUDATUS* AND ITS ANTIBACTERIAL ACTIVITY AGAINST PLANT DISEASE - CAUSED MICROBE

Cosmos caudatus Kunth or known as 'Ulam Raja' in Malaysia, is a traditional herb to cure and improve human illness. Many studies have showed the secondary metabolites of the plant to be antioxidants and have antibacterial properties. The plant was extracted using solvents of different polarity which were hexane, ethyl acetate and methanol. Phytochemical screening using certain spraying reagent, FTIR analysis, compound isolation using preparative TLC, proton NMR analysis and disc diffusion method were conducted to investigate the presence of antioxidant compounds and antibacterial activity of *C.caudatus*. From the phytochemical screening test, the plant was found to contain flavonoid, tannin, alkaloid, glycoside and terpenoid compounds. The isolated compounds (phenolic and terpenoid) using preparative TLC are antioxidants. From FTIR and proton NMR analysis, the absorption peaks of the phenolic compound were predicted as phenolic glycoside, while for the terpenoid compound was suggested as a terpenoid glycoside. From the antimicrobial study of disc diffusion method, the most effective extracts used were methanol and hexane extract with the largest inhibition zone of 12 mm and 11 mm, respectively towards *Erwinia chrysanthemi*. This study has achieved its objectives by investigating the antioxidative compounds and evaluating the effectiveness of *C.caudatus* as antibacterial agent against plant pathogen.