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CYTOTOXICITY STUDY, ANTIOXIDANT AND ANTIBACTERIAL ACTIVITY AGAINST PLANT PATHOGENIC BACTERIA OF METHANOL EXTRACT FROM Coscinium fenestratum (AKAR SEKUNYIT) [Kajian Ketoksikan Sel, Aktiviti Antioksida dan Sifat Antibakteria Ekstrak Metanol dari Coscinium Fenestratum (Akar Sekunyit) Terhadap Bakteria Penyebab Penyakit Pokok]

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Abstract
Coscinium fenestratum (Gaertn.) Colebr. (Menispermaceae) is a large woody liana found in moist deciduous to the evergreen forest at an altitude of 350–1200m. The stem and root of this species are highly medicinal valuable, and it is believed to be an endangered species in Malaysia. This study was conducted to investigate the reaction of methanol extract from Coscinium fenestratum with cancer cell lines, plant pathogenic bacteria, as well as DPPH scavenging and ferric reduction antioxidant power. The antibacterial activity was evaluated from disc diffusion method and microdilution method against soft rot bacteria Erwinia chrysanthemi and Erwinia carotovora. The cytotoxicity assay was performed using MCF-7 and Caco-2 cancer cell lines. The antioxidant properties of methanol extract were assessed from DPPH radical scavenging activity and ferric reducing antioxidant power (FRAP). The cytotoxicity activity revealed the methanol extract has potential to suppress the Caco-2 cell line with the percentage cell viability at 70% compared to MCF-7 cell line. The antioxidant activity from FRAP assay recorded its value of 47.8080 µg for TE/gDW and 13.8481 µg/mL for the IC50 from radical scavenging activity. However, the total flavonoid content (TFC) was not detected in methanol extract of C. fenestratum. The antibacterial assay revealed that the extract had moderately inhibited the growth of E. chrysanthemi and E. carotovora at 400 mg/mL, with inhibition zones of 11.50 mm and 11.83 mm, respectively. Therefore, the methanol extract from C. fenestratum has potential to act as antioxidant and anti-soft rot agent but less potential as anti-cancer agent and anti-soft rot agent.

Author Keywords
antibacterial; antioxidant; Coscinium fenestratum; cytotoxicity; plant pathogen

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