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Anti-Photooxidant And Photoprotective Activities Of Ethanol Extract And Solvent Fractions From Corn Cob (*Zea mays*)

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Abstract : Corn cob is one of the food waste-material having the phytochemical component that has healthy benefit. The corn cob was extracted with reflux method using ethanol 80% for 2 hours. After that, the extracts were filtered and the filtrates were combined and concentrated in a rotary evaporator. This crude ethanolic extract was suspended in water and extracted with petroleum ether, ethyl acetate, n-butanol, and water, respectively. The anti-photooxidation effects were evaluated in linoleic acid that containing erythrosine as a sensitizer and exposed under 4000 lux fluorescent light for up to 5 hours. The photoprotective activity was evaluated by sun protection factor (SPF) using spectrophotometry UV-Vis. Ethyl acetate fraction shows the highest total phenolic content followed with butanol fraction, ethanol extract, petroleum ether fraction and water fraction. Ethyl acetate fraction also exhibited the highest anti-photooxidation activity followed by butanol fraction, extract ethanol, petroleum ether, and water fraction. The photoprotective activity of ethyl acetate fraction was the highest, as indicated by higher SPF value as compared with ethanol extract, butanol, water and petroleum ether fractions. There were strong correlations between the total phenolics content and antiradical activity and photoprotective activity with R^2 values are 0.9115, 0.9326 and 0.9975, respectively. These results show that the ethyl acetate fraction of corn cob contains compounds having anti-photooxidation properties and potential as a sunscreen active ingredients.
Keywords : corn cob, solvent fractions, anti-photooxidation, photoprotective, SPF.

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