



Title : Efficacy of anthocyanin extracts from butterfly pea flowers for inhibition of skin pathogenic bacteria and free radicals

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ABSTRACT

Butterfly pea (*Clitoria ternatea*) is a flowering plant commonly found in tropical Asia, including Thailand. It has a unique flower appearance, especially the purple-blue color of the flower, which is rich in anthocyanin. In this study, dried butterfly pea flowers were extracted using water and 95% ethanol as a solvent for extraction. Moreover, the anthocyanin from butterfly pea flowers were extracted using 1% acetic acid and 1% acetic acid in 50% ethanol. The extracts were tested for antioxidant properties and inhibitory activities against growth of bacteria; *Staphylococcus aureus*, *Pseudomonas aeruginosa*, *Staphylococcus epidermidis* and *Streptococcus agalactiae*. It was found that the crude aqueous extracts demonstrated the highest antioxidant activity of 13.0976 ± 1.0739 mg gallic/g extract when tested by the DPPH assay. In addition, the anthocyanin extracted with 1% acetic acid showed the highest antioxidant activity of 47.4046 ± 8.6789 mg trolox/g extract when tested using ABTS assay. The highest antibacterial activity was found from anthocyanin from butterfly pea extracted with 1% acetic acid in 50% ethanol, which was able to inhibit the growth of all tested bacteria at the minimum inhibitory concentration (MIC) and minimum bactericidal concentration (MBC) of 62.5 mg/ml. However, the crude ethanolic extract of butterfly pea demonstrated MIC/MBC of 125 mg/ml. Therefore, anthocyanin and crude extract of butterfly pea flowers demonstrated antioxidant and antibacterial activities against skin pathogenic bacteria.

Keywords: Anthocyanin extract, *Clitoria ternatea*, Butterfly Pea flower, Antioxidant, Antibacterial

(Assoc. Prof. Dr. Yingmanee Tragoolpua)