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Biological activity of *Andrographis paniculata* extract

Thanthong Kobkarnsakul

Shrewsbury International School

Bangkok, Thailand

Abstract

Andrographis paniculata is an herbaceous plant in the family Acanthaceae, known commonly in Thailand as “Fah Tha Lai”. *A. paniculata* extracts were reported to have medicative activities, namely antiviral, antibacterial, and immunostimulatory activities. This study focused on the antioxidant activity of polyphenols extracted from *A. paniculata* as oxidative stress plays a vital role in developing and progressing many diseases, including cardiovascular diseases and cancer. *A. paniculata* was extracted using a mixture solvent (ethyl alcohol: water in ratio 8:2). The total phenolic content of *A. paniculata* extract was determined using Folin-Ciocalteu method and calculated as gallic acid equivalents (GAE). The antioxidant activity of *A. paniculata* extract was performed via 2, 2-diphenyl-1- picrylhydrazyl (DPPH) free radical scavenging assay and ABTS radical scavenging capacity assays. The findings exhibited a strong correlation between antioxidant activity and the total phenol contents. In addition, DPPH and ABTS assays showed that *A. paniculata* extract showed antioxidant activities as a concentration-dependent manner. The EC₅₀ of *A. paniculata* extract from DPPH assay was $725 \mu\text{g} \pm 0.850$. Vitamin C was used as a positive control in DPPH assay, while Trolox was used as a positive control in ABTS assay. To conclude, *A. paniculata* extract consists of a high amount of total phenolic content, which exhibit a significant antioxidant activity. However, further investigation regarding antioxidant activity such as SOD, ROS, and RNS scavenging assays and in vivo experiments should be performed

Biography

Thanthong Kobkarnsakul is a highschool student studying at Shrewsbury International School Bangkok and is planning to apply to study medicine in university. He has previous experiences conducting research at Rangsit University, investigating the antioxidant activity of the *A. paniculata* plant. Additionally, his interest in herbal medicine research is due to Thailand having a lot of potent herbs that can be used as a traditional remedy for diseases that can enhance future medicine. Currently, he is in the process of writing a literature review about the treatment of Non-Hodgkin lymphoma using precision medicine and the growing problem of drug resistance.

2022tao.k@shrewsbury.in.th