

Biological activity of *Andrographis paniculata* extract

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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 725.22 µg/mL ± 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.

Keywords: ABTS assays, *Andrographis paniculate*, antioxidant activity, DPPH assays

INTRODUCTION

Andrographis paniculata is an herbaceous plant in the family Acanthaceae, known commonly in Thailand as “Fah Tha Lai” (1). *A. paniculata* extracts were reported to have medicative activities, namely antiviral, antibacterial, and immunostimulatory activities (2, 3). 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.

METHODS

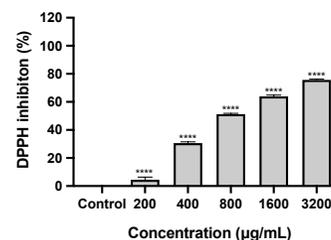
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RESULTS

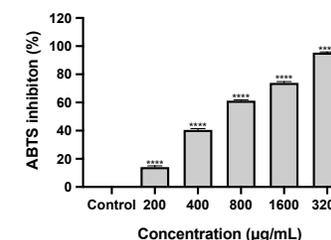
Effective concentration (EC₅₀) of *A. paniculata* extract via DPPH and ABTS radical scavenging assays

Compound	DPPH (µg/mL ±SD)	ABTS (µg/mL)
<i>A. paniculata</i> extract	725.22 ± 0.850	499.42 ± 0.675

Percentage of DPPH inhibition and *A. Paniculata* extract (µg/mL)



Percentage of ABTS inhibition and *A. Paniculata* extract (µg/mL)



CONCLUSION

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.

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