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# IN VITRO BIOLOGICAL STUDY OF CURCUMA LONGA EXTRACT

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## ABSTRACT

In recent years, there has been a great deal of interest in determining the antioxidant potential of foods. Activated antioxidant compounds can scavenge free radicals and protect the human body from the damaging effects of free radicals on cells. *Curcuma longa* Linn. is belonged to the Zingiberaceae family and is usually used as a famous spice in many Southeast Asia countries. This study focused on evaluating the flavonoids content of *C. longa* and evaluate their antioxidant activity via DPPH and ABTS radical scavenging capacity assays. Trolox was used as a positive control in the ABTS assay, whereas vitamin C was used as a positive control in the DPPH assay. The total flavonoid content of *C. longa* extract was done and expressed as quercetin equivalents (QE)/g measured by an aluminium chloride colorimetric method. The results showed that the half-maximal inhibitory concentration (IC50) of *C. longa* extract were 41.79 µg/mL ± 0.687 and 26.28 µg/mL ± 0.726 for DPPH and ABTS, respectively. The antioxidant activities of *C. longa* extract showed concentration-dependent manner. To conclude, *C. longa* extract is plentiful in flavonoids, which have powerful antioxidant properties. The findings from this study could shed light that it is worth developing additional research on the antioxidant activity of *C. longa* extract regarding the molecular mechanism and human-based research for establishing the mechanism of action and cause and effect on health benefits.

Keywords: ABTS assay, Antioxidant, *Curcuma longa,* DPPH assay, total flavonoid content