

## Biological Activity of Hibiscus sabdariffa Extract

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**Abstract :** Hibiscus sabdariffa is a herbal plant that is commonly used for home remedies in Thailand. This study aims to determine the antioxidant activity of polyphenols, as oxidative stress plays a vital role in the development of cancer, and H. sabdariffa was used in this study. The total flavonoids content was determined using the aluminium chloride colourimetric method and expressed as quercetin equivalents (QE)/g and the antioxidant capacity of the flavonoids using the 2,2-diphenyl-1-picrylhydrazyl (DPPH) and 2,2'-azino-bis(3-ethylbenzothiazoline-6-sulfonic acid) (ABTS) radical scavenging capacity assays. The IC50 values of H. sabdariffa extract were  $167.14 \mu\text{g/mL} \pm 0.843$  and  $77.59 \mu\text{g/mL} \pm 0.798$ , respectively. In the DPPH assay, vitamin C was used as a positive control, whereas Trolox was used as a positive control in the ABTS assay. To summarise, H. sabdariffa extract contains a high concentration of total flavonoids and exhibits potent antioxidant activity. However, additional antioxidant activity assays such as superoxide dismutase (SOD), reactive oxygen species (ROS), and reactive nitrogen species (RNS) scavenging assays and in vitro antioxidant experiments should be carried out to investigate the molecular mechanism of the compound.

**Keywords :** ABTS assay, antioxidant activity, Gracilaria fisheri, DPPH assays, total flavonoid content

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