

Abstract No: MO-42

Investigation of antioxidant and antityrosinase activity of *Bauhinia kockiana* and *Cocos nucifera* var. *aurantiaca*

H. M. Batagoda¹ and K. C. Weerasiri^{2*}

¹College of Chemical Sciences, Institute of Chemistry Ceylon, Sri Lanka

²Department of Chemistry, College of Chemical Sciences, Institute of Chemistry Ceylon, Sri Lanka
kush.weerasiri@gmail.com*

Tyrosinase is a widely distributed enzyme in the body that plays an important role in melanogenesis. An increase in melanin synthesis can lead to many skin disorders. This research has been conducted on two different plant varieties that can be commonly found in Sri Lanka, *Bauhinia kockiana* and *Cocos nucifera* var *aurantiaca*, more commonly known as King Coconut, to investigate their antioxidant and antityrosinase activities. *Bauhinia kockiana* was extracted by hot extraction method (Soxhlet extraction) using methanol as the solvent, and the King Coconut water sample was freeze-dried. The antioxidant activity of the samples was analyzed using the DPPH radical scavenging assay, while the enzyme-based tyrosinase inhibition assay was conducted to evaluate the antityrosinase activity, where *Agaricus bisporus* was used to extract the enzyme. *Bauhinia kockiana* (flowers and buds) demonstrated a significant amount of antioxidant activity (IC_{50} : 28.73 ± 1.60 $\mu\text{g/mL}$) against the standard ascorbic acid (IC_{50} : 38.37 ± 1.18 $\mu\text{g/mL}$). Both the samples revealed relative antityrosinase activity using L-DOPA as the substrate (IC_{50} : 128.70 ± 1.22 $\mu\text{g/mL}$; *B. kockiana*, 274.45 ± 1.23 $\mu\text{g/mL}$; *Cocos nucifera* var *aurantiaca* water sample) against Kojic acid, which was used as the positive standard (IC_{50} : 49.47 ± 1.12 $\mu\text{g/mL}$). The Soxhlet extraction of *Bauhinia kockiana* indicated considerable antityrosinase activity and according to the results obtained, it can be said that both plant types show moderate antityrosinase activity, and *Bauhinia kockiana* indicates significant antioxidant properties. Further studies on both varieties should be carried out to identify their principal bioactive compounds, which are responsible for the respective bioactivities. To the best of our knowledge, this is the first research to be done on the hot extraction of *Bauhinia kockiana* and the water sample of *Cocos nucifera* var *aurantiaca* on antioxidant and antityrosinase activities.

Keywords: Antioxidant activity, *Bauhinia kockiana*, King Coconut water, Tyrosinase inhibition