FCT - 115

Evaluation of urease inhibitory activity in the testa (seed coat) and the mesocarp of *Cocos nucifera* variety *Aurantiaca*

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Helicobacter pylori is an organism in the gastric mucosa of humans, which releases the enzyme urease facilitating its colonization, leading to gastritis and gastric cancer. The existing pharmacological agents against this causative bacterial urease, exhibit various side effects. Therefore, numerous studies have been focused upon the effectiveness of traditional medicinal herbs against gastritis. Certain parts of King Coconut are being used in folk medicine of Sri Lanka for the treatment of gastro-intestinal disorders. King Coconut is of the variety *Aurantiaca*, which is one of the varieties of *Cocos nucifera*. This study is focused on exploring the urease inhibitory activity in mesocarp and testa of King Coconut. The extracts of mesocarp and testa of King Coconut, were prepared by a sequential extraction method in increasing polarity order with hexane, ethyl acetate, methanol and water. The urease enzyme was extracted from *Macrotyloma uniflorum* (Horse-gram). The extent of urease inhibition, in known quantities of the extracts were examined, using a methodology modified from the Berthelot's color reaction, employing the UV-Visible spectrophotometer. Urease enzyme inhibition potency of the eight extracts were investigated, where only the aqueous mesocarp extract of King Coconut showed an inhibition. The IC_{50} value of the aqueous mesocarp extract of King Coconut was found to be 1.12 ± 0.0393 mg/mL with respect to the standard urease inhibitor: thiourea (0.821 ± 0.00300 mg/mL). Hence, the aqueous mesocarp extract of King Coconut was subjected to phytochemical quantitative tests; polyphenolic test using gallic acid as the standard and flavonoid test using quercetin as the standard. The flavonoid and polyphenolic contents of the above extract were 0.328 mg g^{-1} and 0.149 mg GAE g^{-1} respectively. The results suggest that King Coconut has a therapeutic potential against the *Helicobacter pylori* infection, which could be developed as a novel drug in the future for gastrointestinal disorders.

Keywords: Urease, *Helicobacter pylori*, Urease inhibitor, *Cocos nucifera*

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