

Urease inhibitory activity of the leaves and fruits of *Trichosanthes cucumerina* Linn.

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Helicobacter pylori is a bacterium found in stomach which secretes bacterial urease, a major virulent factor to cause peptic ulcers. Hence, numerous studies have been carried out to investigate urease inhibitory activity of herbal extracts to treat peptic ulcers through the elimination of colonization of *Helicobacter pylori*. The plant of interest in this research was *Trichosanthes cucumerina* Linn. which is referred by the name 'dummella' in Sinhala. Leaves of this plant are currently being used to treat peptic ulcers in traditional medicinal methods and have been strongly suggested for research. This study was focused on exploring the urease inhibitory activity of leaves and fruits of *Trichosanthes cucumerina* Linn. Following the extractions prepared using hexane, ethyl acetate, methanol and water, urease inhibitory activity of each extract was evaluated using a colorimetric assay developed from Berthelot's reaction. Urease enzyme was extracted from *Macrotyloma uniflorum* (Horse gram/"Kollu") and thiourea was used as the standard inhibitor. Among the five samples which showed the urease inhibitory property, the lowest IC₅₀ value of 1.134±0.008 mg/mL was obtained for the ethyl acetate extract of the fruit of *Trichosanthes cucumerina* Linn., thereby showed the highest urease inhibitory activity. The water extract of leaves of the plant showed the highest total phenolic content (0.104±0.003 mg GAE g⁻¹) and total flavonoid content (0.027±0.005 mg of quercetin equivalents/g of dried weight). These results suggest a strong indication to use this plant parts in the treatment against the main causative of peptic ulcers and further research on such natural origins can be used to design and develop novel drugs with lesser toxicity.

Keywords: *Trichosanthes cucumerina* Linn., *Helicobacter pylori*, urease inhibitor

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