Anti-inflammatory and Antioxidant Activity of the Methanolic Leaf Extract of *Cyclea peltata* (Lam.) Hook. f. Thoms *in vitro*

CC Perera[1#], SM Jayawardhane[2], SU Kankanamge[3], RN Pathirana[4] and WD Rathnasooriya[5]

[1,2,3]Departmment of Pharmacy, Faculty of Allied Health Sciences,
General Sir John Kotelawala Defence University, Sri Lanka
[4]Departmment of Basic Sciences, Faculty of Allied Health Sciences,
General Sir John Kotelawala Defence University, Sri Lanka
[5]Departmment of Zoology, Faculty of Science, University of Colombo, Sri Lanka
[#]chathuracambegoda@gmail.com

Inflammation is a useful internal mechanism which acts to activate protective responses in the human body. The human body activates these responses via reaction mechanisms that act as part of its defense against both local and foreign deleterious influences. However, if triggered in excess or inappropriately, it can have deleterious effects on the body, necessitating the use of anti-inflammatory substances. Anti-inflammatory activity is intrinsically linked to the presence of antioxidant phytochemicals such as polyphenols and flavonoids. This study reports the findings of the study conducted on the in-vitro antioxidant and anti-inflammatory activity of the methanolic extract of the leaves of *Cyclea peltata* (Lam.) Hook f. Thoms. (Kehi Pittan), a plant that has a history of use in ayurvedic and herbal medicine in wound healing and in treating skin conditions. The methanolic leaf extract was found to possess significant antioxidant activity, which can be mediated by the presence of significant total polyphenolic content (61.10 ± 0.77 mg Gallic Acid Eq/g). The accompanying antioxidant assays showed significant radical scavenging activity, with 94.96 ± 1.91, 122.22 ± 3.80, 121.56 ± 11.95, and 14.07 ± 2.66 mg Trolox Equivalents per gram of extract for the DPPH, $ABTS^{+}$, FRAP, and ORAC assays respectively, conclusively proving the presence of antioxidant activity in the plant extract. The Anti-inflammatory study, conducted using the BSA denaturation method, revealed that the extract has a mild-to-moderate dose-dependent anti-inflammatory activity (x6.05 less potent than reference drug, Diclofenac Sodium). The study therefore justifies the viability of *C. peltata* for use as an anti-inflammatory agent, though further studies will need to be conducted to isolate the responsible chemical constituent/s.

Keywords: *Cyclea peltata*, Anti-inflammation, Antioxidants