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In-vitro Evaluation of Anti-inflammatory Activity and Wound Healing Properties of Water Extract of Leaves of *Camellia Sinensis*

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Camellia sinensis is the most common beverage among Sri Lankans, and it is one of the main traditional export crops. In Sri Lankan traditional medicine *Camellia sinensis* is used as ayurvedic medicine to treat wound healing and inflammation conditions. *Camellia sinensis* has a vast amount of health benefits even though it is being used as a beverage widely at present. It is also used in the cosmetic industry for its antioxidant properties. However, these properties and benefits of *Camellia sinensis* are not scientifically validated yet. The study was conducted to evaluate the *in-vitro* anti-inflammatory activity of aqueous extract of *Camellia sinensis* leaves by the egg albumin assay and the red blood cell membrane (HRBC) stabilization assay. The wound healing effect of aqueous extract of *Camellia sinensis* leaves was also tested compared to the normal conditions (control). The egg albumin assay and the red blood cell membrane stabilization assay was done with a concentration series of 5000µg/mL 2500µg/ mL, 1250µg/mL, 625µg/mL 312.5µg/mL, 156.25µg/ mL and 78.125mL to detect the anti-inflammatory effect, while the wound healing effect was checked with the highest concentration (5000µg/ mL) of the aqueous extract of *Camellia sinensis.* The results showed that the aqueous extracts of *Camellia sinensis* has an IC_{50} value of 284.9µg/mL while its percentage inhibition for the highest concentration (5000µg/mL) was 82.148% by the egg albumin assay. For the human red blood cell membrane stabilization assay, anti-inflammation showed an IC_{50} value of 296.9µg/ml and 85.903% percentage inhibition for the highest concentration (5000µg/mL) of the aqueous extract of *Camellia sinensis* leaves. The aqueous extract of *Camellia sinensis* showed a marked dose-dependent anti-inflammatory activity. The results of scratch assay which was conducted with Vero cells, showed a noticeable wound healing activity with the aqueous extract of *Camellia sinensis.* The results of our study showed that the aqueous extract of *Camellia sinensis* has a good anti-inflammatory effect with wound healing properties.

Keywords: *wound healing, anti inflammation, camelia sinensis, human red blood cells stabilization assay, scratch assay*