

## **Formulation of a novel herbal emulgel using *Leea indica* (Burm.f.) Merr. (Burulla/Gurulla) leaf extract and evaluation of *in vitro* anti-inflammatory and antioxidant activities**

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Many topical anti-inflammatory formulations available in the commercial market have limited patient preference due to their unfavorable adverse effects and less effectiveness. The aim of the present study was to formulate a novel herbal emulgel using *Leea indica* (Burm.f.) Merr. (Burulla/Gurulla) leaves grown in Sri Lanka and, evaluate *in vitro* anti-inflammatory and antioxidant activities. Different formulations (Fg1-Fg6) were prepared by incorporating freeze dried powder of 70% aqueous acetone leaf extract. All formulations were tested for their physicochemical stability parameters for 30 days, and they were subjected for *in vitro* anti-inflammatory activity (by Human Red Blood Cell membrane stabilization assay) and *in vitro* antioxidant activity (by 2, 2-diphenyl-1-picrylhydrazyl; DPPH) assay respectively. Among the formulated herbal emulgels, Fg6 showed the significantly high values of percentage inhibition ( $93.734 \pm 0.895$  %) compared to the positive control ( $62.575 \pm 0.644$  %) of heat induced hemolysis of erythrocytes at the concentration of 12.5 mg/ mL. *In vitro* antioxidant activity of Fg6 and positive control were  $3.386 \pm 0.007$  and  $0.364 \pm 0.004$  mMol Trolox per 100g of emulgel respectively. All formulations were found to be semi-solid, homogenous, washable with water, having no phase separation and pH in the range of 6 to 7. There was no remarkable variation of stability parameters tested during 30 days. It is concluded that the formulated herbal emulgels have promising anti-inflammatory and antioxidant activities and formulation Fg6 can be commercialized as a novel herbal emulgel.

**Key words:** *Anti-inflammatory, antioxidant, emulgel, Leea indica*

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