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Formulation, Characterization and Evaluation of Anti-Inflammatory Cream Incorporating *Carica papaya* L. Leaf Extract

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Local plants are used in treatments of numerous illnesses. *Carica papaya* L. leaf extracts are known to possess many phytochemicals responsible for anti-inflammatory activity. Present study was aimed to formulate a cream comprising leaf extract of *Carica papaya* L. and to determine its therapeutic potentials as an anti-inflammatory cream *in-vitro*. Ethanol extract of papaya leaf was prepared and investigated for anti-inflammatory activity by Human Red Blood Cell (HRBC) membrane stabilization assay. Different formulations of cream bases were prepared without leaf extracts. The best formulation was selected, and creams were formulated by incorporating 5% and 10% leaf extracts and tested for characterization, stability and anti-inflammatory activity. HRBC membrane stabilization assay showed anti-inflammatory activity of the leaf extract with the IC_{50} value of 352.861 µg/mL while 315.84 µg/mL IC_{50} value for the positive control (Aspirin). The creams without the plant extract were stable until the observed period of 9 months under 8°C, 40°C and room temperature. The formulated creams with 5% and 10% plant extract were stable until the observed period of 4 months under room temperature. The cream was in O/W nature and had smooth texture, fine globules and pH 6.5-7.0. Accelerated stability data showed that the cream with 5% plant extract is more stable than 10% plant extract and reduction of pH was observed at 40°C. The anti-inflammatory activity of the cream with 10% plant extract had been preserved for the period of 4 months. A cream with anti-inflammatory activity could be formulated with *Carica papaya* L. extracts. Further studies are needed to determine the self-life and the therapeutic efficacy of the cream.

Keywords: *Carica papaya* L., Cream, Anti-inflammatory activity