

***In vitro* Antioxidant and Anti-inflammatory Activity of “Denabadiya Kasaya”: A Traditional Polyherbal Formulation Used for the Treatment of Fever Including Dengue**

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Abstract

“Denabadiya Kasaaya” is an intricate formulation rooted in Sri Lankan traditional medicine, crafted from a blend of eight distinct herbs which is prescribed for fever and flu like symptoms including dengue fever. We assessed the phenolic, flavonoid and antioxidant content of this preparation by Folin Ciocalteu method (Total Phenolic Content; TPC), Aluminum chloride method (Total Flavonoid Content; TFC), and by 1,1-diphenyl-2-picrylhydrazyl (DPPH) assay respectively. We also analysed the anti-inflammatory activity by the Human Red Blood Cell membrane stabilization (HRBC), and by the protein denaturation assays. The cytotoxicity of this preparation was assessed by the MTT assay. TPC of the formulation was recorded as 5.2 mg/g Galic Acid equivalent. TFC value of the sample was 5.3 mg/g Quercetin equivalent. For the DPPH assay, IC₅₀ was > 1 mg/mL while standard ascorbic acid showed an IC₅₀ of 0.016 mg/mL. The anti-inflammatory activity of the preparation was recorded as IC₅₀ of > 1 mg/mL for Protein denaturation assay while standard Ibuprofen showed an IC₅₀ of 0.85 mg/mL. HRBC assay depicted an IC₅₀ of < 0.0625 mg/mL, while standard Ibuprofen showed an IC₅₀ of 0.31 mg/mL. Finally, minimal cytotoxicity effects in Vero cells were found by the MTT assay where 55.7% cell growth inhibition was observed at 24 h for the highest concentration tested: 1 mg/ml. This preparation exhibits considerable anti-inflammatory activity. Further research will be conducted to determine its antiviral activity.

Keywords: *Dengue fever treatment, Traditional plant extract, Denabadiya Kasaya*