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Preliminary study of anti-inflammatory action of Sri Lankan "dasapanguwa"

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The herbal mixture known as "Dasapanguwa" which is frequently used as a traditional medicine in Sri Lanka, contains ten components, including the dried rhizome of *Zingiber officinale* (Inguru), dried stem of *Gerontogea corymbosa* (Pathpadagam), dried berries *Solanum xanthocarpum* (Katuwalbatu), dried seeds of *Coriandrum sativum* (Koththamalli), dried leaves of *Justicia adhatoda* (Pawatta), dried stem of *Tinospora cordifolia* (Rasakinda), dried stem of *Coscinium fenestratum* (Venivalgata), dried rhizome of *Alpinia calcarata* (Araththa/Snap ginger), dried stem of *Glycyrrhiza brachycarpa* (Valmee) and dried stem of *Solanum melongena* (Eggplant) as most common combination. The objectives of this project were to extract the chemical constituents of each ingredient and the dasapanguwa mixture decoction, to determine the anti-inflammatory action of each extract in dasapanguwa as well as dasapanguwa mixture using the "Heat-Induced Hemolysis" assay. In the present study, the individual ingredients were extracted by deionized water and the dasapanguwa mixture decoction was screened for their anti-inflammatory assay; Heat-Induced Hemolysis. Water extracts were collected according to the ayurvedic traditional method. According to the obtained results of the anti-inflammatory assay, the ability to inhibit protein denaturation (anti-inflammatory activity) varied in the order of dasapanguwa mixture 523.2±31.0 µg/mL > *Glycyrrhiza brachycarpa* 560.8±59.8 µg/mL > *Alpinia calcarata* 572.9±18.6 µg/mL > *Coscinium fenestratum* 787.9±39.4 µg/mL > *Solanum xanthocarpum* 1634.3±39.0 µg/mL > *Gerontogea corymbosa* 1880.4±312.2 µg/mL > *Tinospora cordifolia* 3662.2±366.4 µg/mL > *Justicia adhatoda* 4184.9±109.6 µg/mL > *Zingiber officinale* 4290.3±991.9 µg/mL > *Coriandrum sativum* 5531.7±1883.0 µg/mL > *Solanum melongena 6930.3±45.5* µg/mL. The highest IC_{50} value resulted in the dasapanguwa mixture and the individual extraction of *Solanum melongena* resulted in the least IC_{50} value. This study supported the traditional ayurvedic practice of using "Dasapanguwa" as a good source of anti-inflammatory activity. The combination of ten herbals is given higher anti-inflammatory activity than individual herbals.

Keywords: "Dasapanguwa", Antioxidant activity, Anti-inflammatory activity, IC_{50}.

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