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Pharmacological Evaluation of Manilkara Zapota (L.) P. Royan Fruit Peel Extract for Anti-Inflammatory Effect and Antioxidant Activity in Experimental Animals

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Abstract: *Background: Manilkara zapota (L.) P. Royen is commonly known as Chiku, belonging to the family Sapotaceae which is native to Mexico and central America and widely distributed in tropical and subtropical regions of Asia, Brazil and Australia. Manilkara zapota is a medicinal plant, various parts of this plant are traditionally used for treatment of several diseases, including analgesic, antipyretic, anti-diabetic, antioxidant, anti-inflammatory, and diuretic activity. The plant has been widely used in traditional systems of medicine in India.*

Aim: Present investigation was undertaken aimed at "Pharmacological Evaluation of Manilkara zapota (L.) P. Royen fruit peel extract for Anti-inflammatory Experimental Animals." Method: Ethanolic extract of Manilkara zapota fruit peel was subjected to continuous hot extraction by Soxhlet extraction process using ethanol (80%) as a solvent. Preliminary phytochemical evaluation of ethanolic extract was carried out for the determination of presence of phytoconstituents. The in-vitro Anti- inflammatory activity was evaluated by Heat induced hemolysis and Inhibition of albumin denaturation assay. and Antioxidant activity was evaluated by DPPH radical scavenging assay.

Result: The result suggested that the Phytochemical screening of ethanolic extract reveals the presence of alkaloid, flavonoid, carbohydrates, Tannin, phenol and saponin in Preliminary phytochemical evaluation. The in-vitro antioxidant activity revealed with the ethanolic extract Manilkara zapota at the concentrations 50, 100, 150, 200 µg/mL exhibits 65%, 68%, 78%, 81% radical scavenging activity, whereas the As c or b i c a c i d a s a standard drug at concentration 50, 100, 150, 200 µg/mL exhibit 71%, 79%, 84%, 89% radical scavenging activity respectively by using DPPH radical scavenging assay. In-vitro Anti-inflammatory activity reveales with the ethanolic extract of Manilkara zapota at concentration 50, 100, 150, 200 µg/ml exhibit 33%, 39%, 48%, 57% inhibition, whereas the Diclofenac as a standard drug at concentration 50, 100, 150, 200 µg/ml exhibit 45%, 54%, 69%, 78% inhibition of erythrocyte membrane repectively by using Heat induced hemolysis assay. While In- vitro Antiinflammatory activity revealed with EEMZ at concentration 100, 200, 300, 400 µg/ml exhibit the 63%,66%,80%,85% inhibition respectively whereas Diclofenac as a standard drug at concentration 100, 200, 300, 400 µg/ml exhibit the 67%, 80%, 86%, 90% inhibition respectively by using Inhibition of albumin denaturation assay. Conclusion : The study concluded that the antioxidant and Anti-inflammatory effects of Manilkara zapota Royen fruit peel extract that exhibit due to the presence of some phytoconstituents such as flavonoids, phenol, tannins, carbohydrates, alkaloids, saponin, carbohydrates ,amino acids as revealed in literature..

Keywords: antiinflammatory drugs.

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