

Investigation on Ethanolic Extract of *Annona Squamosa* L. (Sugar Apple) Fruit for Potential Anti-Gout Property: In-Vitro Study

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Abstract. *Annona squamosa* L. (Sugar Apple) belongs to the Annonaceae family. Different parts of *Annona squamosa* L. have various medicinal properties such as anti-inflammatory, antioxidant, antidiabetic, antimicrobial, antiulcer, and analgesic activity. To determine the antioxidant, anti-inflammatory and anti-gout properties of ethanolic extract of *Annona squamosa* L. fruit in the in-vitro study. *Annona squamosa* L. fruit was extracted by maceration process using 70% ethanol solution and evaporated at 40 °C. The ethanolic extract of *Annona squamosa* L. fruit was screened for the chemical tests of amino acids, carbohydrates, alkaloids, terpenoids, flavonoids, phenols, and tannins. The antioxidant activity of *Annona squamosa* L. fruit extract undergoes the total phenolic compound (TPC), ferric reducing ability of plasma (FRAP), and 2,2-diphenyl-1-picrylhydrazyl (DPPH) assays and Xanthine oxidase inhibitory (XOI) assay used for anti-gout property. A 190 g of *Annona squamosa* L. fruit obtains 48.60 g of ethanolic extract. Chemical tests for carbohydrates, amino acids, flavonoids, tannins, and terpenoids have positive results while chemical tests for alkaloids, and phenols have negative results. The TPC is 8.106 mg GAE/g of *Annona squamosa* L. fruit. The EC₁ value for the FRAP assay of *Annona squamosa* L. fruit is 2.1307 mg/mL. The IC₅₀ values for DPPH and XOI assays of *Annona squamosa* L. fruit are 4.1154 mg/mL and 4.4745 mg/mL, respectively. *Annona squamosa* L. fruit extract shows an increase in antioxidant activities and xanthine oxidase inhibition in a concentration-dependent manner. *Annona squamosa* L. fruit has the potential to be a source of antioxidant, anti-inflammatory, and anti-gout properties.

Keywords: *Annona squamosa* L., Antioxidant, Anti-inflammatory, Anti-gout, Sugar apple