

Anti-Inflammatory Screening of *Annona Squamosa* (Sugar Apple) on RAW 264.7 Macrophages

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Abstract. Throughout history, it has been a common practice to study plants as a source of medicine due to its bioactive compounds that have been studied to develop anti-inflammatory agents for infections and inflammatory diseases. An example of a medicinal plant is *Annona squamosa* (sugar apple), belonging to the Anonaceae family. It is well known for its traditional uses in treating dysentery, haemorrhage, and fever. The aim of this research was to evaluate the presence of anti-inflammatory properties of ethanolic crude extract of *Annona squamosa* fruit. Ethanolic extraction of *Annona squamosa* fruit was obtained through oven drying and ethanolic maceration for 3 days in ratio 1:10. Anti-inflammatory properties were analyzed by conducting cell viability analysis through MTT assay and nitric oxide production analysis through Griess assay on lipopolysaccharides-stimulated RAW 264.7 macrophages. Griess assay of the extract revealed anti-inflammatory activity through suppression of NO levels in LPS-stimulated RAW 264.7 cells, exhibiting a dose-dependent activity with the highest observed at 1 mg/ml ($3.96 \mu\text{M} \pm 0.61 \mu\text{M}$). This study has proven that ethanolic extract of *Annona squamosa* fruit exhibits potent anti-inflammatory properties by decreasing NO levels during inflammatory responses of macrophages when stimulated with lipopolysaccharides, showing a potential as a treatment for inflammation.

Keywords: *Annona squamosa*, anti-inflammatory, Griess assay, MTT assay