

## Assessment of In Vitro Antioxidant and Anti-Inflammatory Potentials of Methanol Extract of *Chrysophyllum albidum* Cotyledon



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### Abstract

This study was aimed at analysing the phytochemicals in *Chrysophyllum albidum* cotyledon extract and their in vitro antioxidant and anti-inflammatory effects. The star apple fruit was bought at Igbona market Osogbo, Osun State, Nigeria. The seed from the fruit was removed and defatted. The residue was exhaustively extracted with methanol. The *Chrysophyllum albidum* cotyledon methanol extract (CCME) was phytochemically screened, flavonoids and phenol contents, antioxidant and anti-inflammatory assays were carried out on the extract using standard procedures. Phytochemicals analysis revealed the presence of steroids, tannins, flavonoid, saponin, triterpenes and xanthoproteins. The phenolic concentration, total flavonoids concentration and total sugar concentration were found to be  $26.72 \pm 0.048$   $\mu\text{gTAE}/\text{mg}$ ,  $23.12 \pm 1.92$   $\mu\text{g}$  of Rutin equivalent (RTE)/mg ( $10.49 \pm 1.12$   $\mu\text{g}$  of Quercetin equivalent (QE)/mg) and  $778.38 \pm 12.82$   $\mu\text{g}$  of glucose/ml respectively. The extract demonstrated significant inhibitory effect compared with the standards as potent antioxidant with percentage inhibition of DPPH as 38.10 % - 39.51 %, lipid peroxidation as 45.85 % - 65.85 %, ferric reducing power showed linear correlation to the standard, and the anti-inflammatory potential with 22.06 % - 26.37 % protection of the human red blood membrane and the percentage inhibition of denaturation of albumin 3.42 % - 7.32 %. The study showed that *C. albidum* cotyledon methanol extract is a potent antioxidant and anti-inflammatory agent to combat oxidative stress and pathological diseases caused by reactive species.



### Biography

Dare C. A. is a Biochemist with her first, second and third degrees from Obafemi Awolowo University, Nigeria. She is an active researcher, a lecturer and examination officer in the Department of Biochemistry of Osun State University, Nigeria. She has some publications to her credit and more manuscripts in the processing stage. She is an active member of Federation of African Societies of Biochemistry and Molecular Biology (FASBMB), Nigerian Society of Biochemistry and Molecular Biology (NSBMB), and Organization of Women in Science for the Developing World (OWSDW).

### Publication

2nd World Congress on Chemistry, Drug Design and Development | Prague, Czech Republic | July 20-21, 2020

**Citation:** Dare C. A, Assessment of In Vitro Antioxidant and Anti-Inflammatory Potentials of Methanol Extract of *Chrysophyllum albidum* Cotyledon, Drug Design 2020, 2nd World Congress on Chemistry, Drug Design and Development, Prague, Czech Republic, July 20-21, 2020, 06