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Comparative study of the anti-inflammatory and antioxidant effects of phospholipid complexes of flavonoids from *Punica granatum* and *Psidium guajava*

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Studies have shown that *Punica granatum* (Lythraceae) and *Psidium guajava* (Myrtaceae) have remarkable biological and medicinal properties. This work explores and compares the antioxidant and anti-inflammatory activities of the methanolic extract of fruit peel of *Punica granatum* and ethanolic extract of the leaves of *Psidium guajava*. The extracts were administered orally (50 & 100 mg/kg) for anti-inflammatory activity which was studied using rat paw edema test and the anti-lipid peroxidation test was carried using thio-barbituric acid reactive substances (TBARS) method. For lipid peroxidation inhibitory activity of *P. guajava* extract was found to reduce the TBARS formation better than their free form with an IC₅₀ values of 16.86 and 13.09 µg/ml and for anti-inflammatory activity using rat paw edema method 1.2 (±0.002) at the third hour compared to control 2.5(±0.015) and standard diclofenac sodium 0.85 (±0.007) at 100 mg/kg dose. While for *P. granatum* antioxidant activity was found to have IC₅₀ values 17.41 µg/ml for biomarker complex & 23.84 µg per ml for the plant extract complex. Anti-inflammatory activity was found maximum at third hour where the extract of High Yielding Polyphenolic Extract (HYPE) complex (21.95%) than their isolated form, it may be due to the presence of parent catechin, quercetin, myricetin and their metabolites. Both the extracts exhibited significant antioxidant and anti-inflammatory activity. The results demonstrated that *P. granatum* and *P. guajava* contains active constituents which possess antioxidant and anti-inflammatory activity, justifying its popular uses.

Biography

Nikhilesh Dhuria is currently MPharm Student at Bombay College of Pharmacy.

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