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Pharmacognostic and Physiochemical Studies of *Artocarpusheterophyllus* Seeds

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Abstract: Aqueous, hydroalcoholic and methanolicextracts of Jackfruit seed (*Artocarpusheterophyllus)* were assessed for antioxidant, anti-inflammatory and antibacterial activity by *in vitro* methods. Phytochemical analysis revealed the presence of carbohydrates, amino acid, alkaloids, saponins, tannins, flavonoids, terpenoids, glycosides, xanthoproteins and phenols. The total phenolic and flavonoid content was found to be 0.4 GAE/g and 10.1 QE/g of fresh tissue respectively. The IC_{50} values for DPPH radical and H_2O_2 scavenging was found to be 398.8 µg/ml and 32.51 µg/ml respectively. *In vitro* anti-inflammatory activity was evaluated using lipooxygenase inhibition, albumin denaturation assay and membrane stabilization assay at different concentrations. Aspirin was used as a standard drug for the study of anti-inflammatory activity. Linear regression analysis was used to calculate IC_{50}value.The extract inhibited the lipoxygenase enzyme activity with an IC_{50} value of 242.85 µg/ml.Maximum inhibition of heat induced albumin denaturation of 97% was observed at 500 µg/ml, IC_{50} 36.63 µg/ml).Membrane stabilization assay attributed minor protection by the seed extract with an IC_{50} of 629.38 µg/ml.Antibacterial activity of the methanolic and seed oil extracts were studied using agar well diffusion method. Broad spectrum antibacterial activity was noted with maximum zone of inhibition reported for *E. coli* and *K. pneumonia.*

Key words:*Artocarpus,* anti-inflammatory, antibacterial, antioxidant, RBC stabilization, lipoxygenase, albumin denaturation, phytochemicals.

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