

ANTI-DIABETIC, ANTI-INFLAMMATORY AND GC-MS PROFILE ANALYSIS
OF *Schleichera oleosa* (KON) SEED EXTRACT

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The medicinal properties of *Schleichera oleosa* (Lour.) Oken, commonly called “Kon”, has been acknowledged and utilised in traditional medicine for its wide-ranging therapeutic effects. This study was carried out to determine the fatty acid content in *S. oleosa* seeds. Gas Chromatography-Mass Spectroscopy (GC-MS) was employed to identify and quantify fatty acid content, while its biological activities were determined using Alpha-amylase inhibition using the dinitrosalicylic acid (DNS) method. Anti-inflammatory activity was assessed by bovine serum albumin method for the methanolic extract, as well as for the hexane, ethyl acetate and aqueous fractions. The results were expressed as mean $\pm$ SD using GraphPad Prism 7.4 ($n = 3$). The results were analysed by one-way ANOVA followed by Tukey’s multiple comparison tests, and $p < 0.05$ was considered statistically significant. The analysis identified 13 major fatty acids, with Eicosanoic acid exhibiting the highest significant percentage (39.16 ± 5.64). 9-Octadecenoic acid, Hexadecanoic acid and 9,12-Octadecadienoic acid were also detected as $36.81\% \pm 2.39$, $10.84\% \pm 1.40$ and $6.98\% \pm 2.29$, respectively. The anti-inflammatory potential of *S. oleosa* seed extract was significant, while no antidiabetic activity was observed against the alpha-amylase enzyme. The crude methanolic seed extract exhibited better anti-inflammatory activity at 81.68 ± 0.45 due to the presence of Eicosanoic acid and other fatty acid derivatives, with 82.34 ± 0.22 for Diclofenac as the standard. Our results suggest that *S. oleosa* seed extract is a promising source of natural compounds with anti-inflammatory properties, making it suitable for potential therapeutic, nutraceutical, and functional food applications.

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