Abstract No: 214 ***Life Sciences***

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 ± 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% ± 2.39, 10.84% ± 1.40 and 6.98% ± 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.

Financial assistance from the Science and Technology Human Resource Development Project (STHRD), Ministry of Higher Education, Sri Lanka, funded by the Asian Development Bank (Grant No. R2RJ4) is acknowledged

Keywords: Antidiabetic, Anti-Inflammatory, Gas chromatography-Mass spectroscopy, *Schleichera oleosa* seed extract