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Phytochemical Profiling and in Vitro Antioxidant Activity Assessment of Lawsonia Inermis and Juglans Regia Leaf Extracts

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Abstract: *This study aimed to profile the phytochemicals present in Lawsonia inermis and Juglans regia leaf extracts and assess their in vitro antioxidant activity using three different assays. Phytochemical screening revealed the presence of carbohydrates, glycosides, triterpenes, flavonoids, saponins, and alkaloids in both plant extracts. These compounds are known to possess various pharmacological properties, including antimicrobial, anti-inflammatory, antiviral, and anticancer activities. The in vitro antioxidant activity of the extracts was evaluated using the phosphomolybdenum, FeCl3 radical scavenging, and DPPH radical scavenging assays. The results showed that Lawsonia inermis extract had a higher total antioxidant capacity, as measured by the phosphomolybdenum assay, compared to Juglans regia extract. Similarly, it had a higher ability to prevent the formation of free radicals, as measured by the FeCl3 radical scavenging assay. Additionally, Lawsonia inermis extract exhibited a higher capacity to neutralize free radicals, as measured by the DPPH radical scavenging assay. Overall, the study suggests that both Lawsonia inermis and Juglans regia leaf extracts contain various phytochemicals with potential health benefits. However, Lawsonia inermis extract exhibited a stronger antioxidant activity compared to Juglans regia extract. These findings could have significant implications in the development of natural antioxidants for various industrial and therapeutic applications.*

Keywords: Leishmania tropica, Lawsonia inermis, Juglance regia, Anti-leishmania, phytochemistry

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