

Clitorin and manghaslin from *Carica papaya* leaf juice: characterisation and antioxidant properties

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Introduction **1** Phytochemicals

deserve equal attention alongside synthetic compounds as potential inhibitors against diseases such as dengue. *Carica papaya* L., a member of the Caricaceae family, has been reported promising efficacy results of its leaves based on in vitro and in vivo experiments, particularly in terms of its anti-dengue properties. **Flavonols** have been identified as the most prevalent phytochemicals present in *C. papaya* leaf. These compounds not only possess antiviral potential but also exhibit significant **radical scavenging activity** due to the presence of phenolic moieties.

Objective **2**

In this study, **two flavonoid fractions (namely clitorin and manghaslin)** were obtained from freeze-dried *C. papaya* leaf juice using liquid-liquid extraction and centrifugal partition chromatography. The collected yield was monitored by high performance thin layer chromatography and characterised using ultra-high performance liquid chromatography-mass spectrometry. Their antioxidant properties were evaluated using DPPH and ABTS assays.

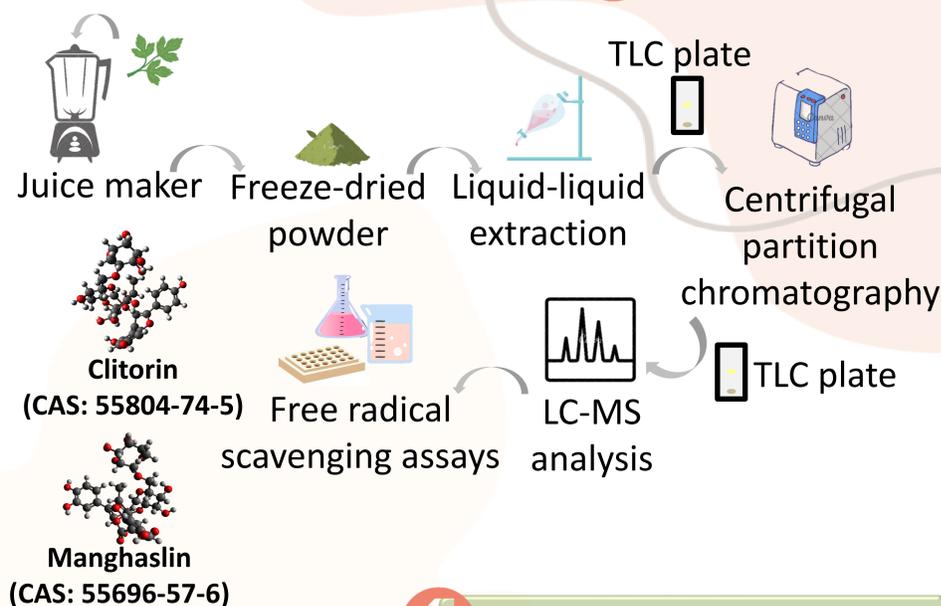
ACKNOWLEDGEMENTS

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Methodology **3**

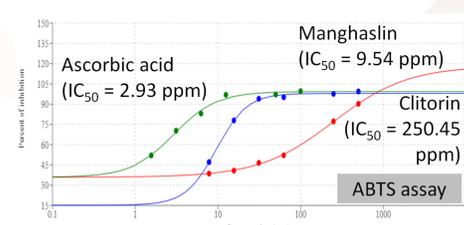
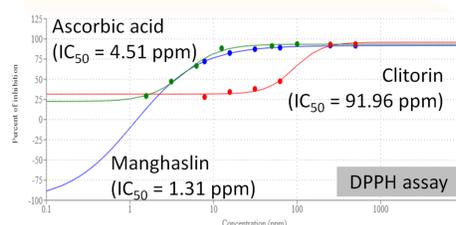


Results & Discussion **4**



○ The high-performance thin-layer chromatography profile of clitorin and manghaslin fraction under ultraviolet light at 366 nm.

○ From the LC-MS analysis, clitorin detected at retention time 2.43 min with 739.35 m/z $[M-H]^-$. While for manghaslin was detected at retention time 2.37 min with 755.46 m/z $[M-H]^-$.



○ Utilising the Quest Graph™ IC50 Calculator, the values for the 50% inhibition of free radical scavenging activity (IC₅₀) were extrapolated. The manghaslin consists of quercetin aglycone, with extra hydroxyl group shows at least 7 times higher antioxidant activity than the clitorin. Bioactivity associated with the difference of their antioxidant activities shall be studied as well.



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