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# An optimized solvent extraction and rapid identification of unidentified flavonoid glucuronide derivatives from spinach by UHPLC-HR-QTOF-MS

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## ABSTRACT

A rapid, sensitive analytical method using ultra-high-pressure liquid chromatography coupled with quadrupole time-of-flight mass spectrometry (UHPLC-HR-QTOF-MS) was developed for the identification and quantification of flavonoids from spinach. The extraction efficiency of flavonoids was evaluated by different solvents such as acetone, ethanol, methanol, acetone: water (70:30), ethanol: water (70:30) and methanol: water (70:30). Flavonoid identification was achieved by UV spectra, high resolution accurate mass and their fragmentation pattern. The precursor and product ions were recorded by both broadband collision ion dissociation (bbCID)