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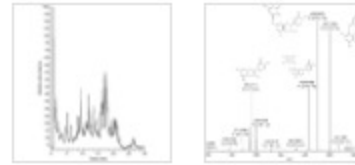
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Polyphenolic profile of persimmon leaves by high resolution mass spectrometry (LC-ESI-LTQ-Orbitrap-MS)

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Highlights

- The phenolic profile of persimmon (*Diospyros kaki* L.) leaves has been analysed by high resolution mass spectrometry.
- Forty-one phenolic compounds were identified using high mass accuracy and confirmed by MS² experiments.
- Thirty-three polyphenols are reported in persimmon leaves for the first time.

Abstract

Persimmon leaves have played an important role in Chinese medicine. Persimmon extracts and formulations have been shown to possess a wide range of pharmacological activities, including antioxidant, hypolipidaemic and antidiabetic, and they have been used to treat cardiovascular disease, improve homeostasis, as antibacterial and anti-inflammatory agents, and as a beauty treatment. In this work, liquid chromatography coupled to hybrid linear ion trap quadrupole Orbitrap mass spectrometry was used to accurately identify persimmon leaf polyphenols. Forty-one phenolic compounds, including simple phenolic acids, hydroxybenzoic acids, hydroxycinnamic acids, flavanols, flavonols, flavanones, flavone-chalcones, tyrosols and their conjugated derivatives, were identified and quantified using high mass accuracy data and confirmed by MS² experiments. To the best of our knowledge, this is the most extensive study of persimmon leaf polyphenols performed so far, since 33 phenolic compounds are reported for the first time.

Keywords

Persimmon leaves; Orbitrap-MS; Flavonoids; Cinnamic acid; Hydroxybenzoic acids; Hydroxytyrosol

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