

Accepted Manuscript

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PII: S0731-7085(18)30567-3
DOI: <https://doi.org/10.1016/j.jpba.2018.08.048>
Reference: PBA 12179

To appear in: *Journal of Pharmaceutical and Biomedical Analysis*

Received date: 7-3-2018
Revised date: 19-7-2018
Accepted date: 24-8-2018

Please cite this article as: Meng Z, Jing Z, Hongxia D, Yuanyuan G, Longshan Z, Green and efficient extraction of four bioactive flavonoids from *Pollen Typhae* by ultrasound-assisted deep eutectic solvents extraction, *Journal of Pharmaceutical and Biomedical Analysis* (2018), <https://doi.org/10.1016/j.jpba.2018.08.048>

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Green and efficient extraction of four bioactive flavonoids from *Pollen Typhae* by ultrasound-assisted deep eutectic solvents extraction

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Highlight

- This work described a novel method for the determination of four bioactive flavonoids in *Pollen Typhae* using ultrasound-assisted extraction based on deep eutectic solvents (UAE-DES).
- The efficiencies of synthetic DESs were thoroughly investigated and optimized in this study.
- DESs exhibited higher extraction efficiency comparing with conventional solvents.
- DESs were firstly applied for extraction of *Pollen Typhae* combined with acid hydrolysis

Abstract

Recently, deep eutectic solvents (DESs) have been recognized as a novel class of sustainable solvents to replace common organic solvents. In this study, a highly and efficient extraction technique for determination of four bioactive flavonoids from *Pollen Typhae* using a combination of ultrasound-assisted extraction and natural deep eutectic solvents (NADESs) was developed. A series of DESs containing various hydrogen bond acceptors combined with

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