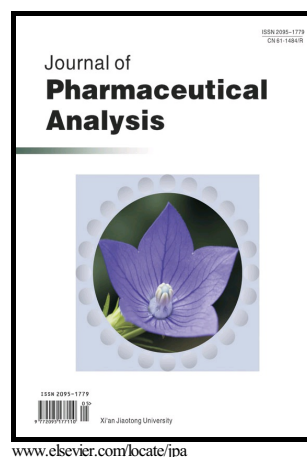


Author's Accepted Manuscript

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PII: S2095-1779(16)30053-3
DOI: <http://dx.doi.org/10.1016/j.jpha.2016.05.007>
Reference: JPHA319

To appear in: *Journal of Pharmaceutical Analysis*

Received date: 19 November 2015
Revised date: 20 May 2016
Accepted date: 23 May 2016

Cite this article as: Wei Xiong, Xianqiang Chen, Guangping Lv, Dejun Hu, Jing Zhao and Shaoping Li, Optimization of microwave-assisted extraction of bioactive alkaloids from lotus plumule using response surface methodology *Journal of Pharmaceutical Analysis* <http://dx.doi.org/10.1016/j.jpha.2016.05.007>

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**Optimization of microwave-assisted extraction of bioactive alkaloids
from lotus plumule using response surface methodology**

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Abstract

In this work, a fast and efficient microwave-assisted extraction (MAE) method was developed to extract main bioactive alkaloids from lotus plumule. To optimize MAE conditions, three main factors were selected using univariate approach experiments, and then central composite design (CCD). The optimal extraction conditions were as follows: methanol concentration of 65%, microwave power of 200 W, and extraction time of 260 s. An HPLC-DAD method was established to quantitatively analyze these phytochemicals in different lotus plumule samples and in different part of lotus. Chromatographic separation was carried out on an Agilent Zorbax Extend-C18 column (4.6 × 150 mm id, 3.5 μm). Gradient elution was applied with the mobile phase constituted with 0.1% triethylamine in water (A) and acetonitrile (B): 40%–70% B at 0–8 min, 70%–100% B at 8–9 min, 100% B for 2 min.

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