

Accepted Manuscript

Isolation, identification and antioxidant activity of bound phenolic compounds present in rice bran

Wei Wang, Jia Guo, Junnan Zhang, Jie Peng, Tianxing Liu, Zhihong Xin

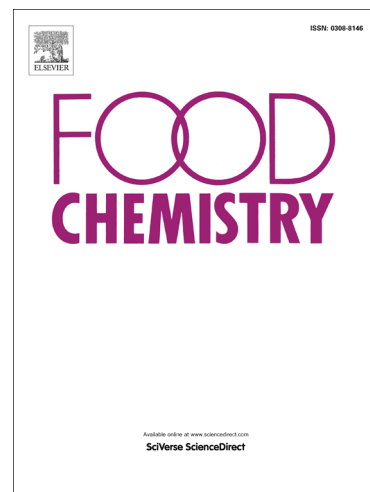
PII: S0308-8146(14)01320-X
DOI: <http://dx.doi.org/10.1016/j.foodchem.2014.08.095>
Reference: FOCH 16318

To appear in: *Food Chemistry*

Received Date: 26 March 2014
Revised Date: 18 August 2014
Accepted Date: 21 August 2014

Please cite this article as: Wang, W., Guo, J., Zhang, J., Peng, J., Liu, T., Xin, Z., Isolation, identification and antioxidant activity of bound phenolic compounds present in rice bran, *Food Chemistry* (2014), doi: <http://dx.doi.org/10.1016/j.foodchem.2014.08.095>

This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.



1 Isolation, identification and antioxidant activity of bound phenolic compounds present in rice
2 bran

3 Wei Wang, Jia Guo, Junnan Zhang, Jie Peng, Tianxing Liu, Zhihong Xin *

4 *Key Laboratory of Food Processing and Quality Control, College of Food Science and Technology, Nanjing*
5 *Agricultural University, Nanjing 210095, PR China*

6 **Abstract:** The bound phenolic compounds in rice bran were released and extracted with ethyl acetate based
7 on alkaline digestion. An investigation of the chemical constituents of EtOAc extract has led to the isolation
8 of a new compound, *para*-hydroxy methyl benzoate glucoside (**8**), together with nine known compounds,
9 cycloeucaenol *cis*-ferulate (**1**), cycloeucaenol *trans*-ferulate (**2**), *trans*-ferulic acid (**3**), *trans*-ferulic acid
10 methyl ester (**4**), *cis*-ferulic acid (**5**), *cis*-ferulic acid methyl ester (**6**), methyl caffeate (**7**), vanillic aldehyde (**9**)
11 and *para*-hydroxy benzaldehyde (**10**). The structures of these compounds were determined using a
12 combination of spectroscopic methods and chemical analysis. Among the compounds isolated, compound **3**, **5**
13 and **7** exhibited strong DPPH and ABTS⁺ radical scavenging activities, followed by compounds **4** and **6**.
14 Compound **1** and **2** showed potent DPPH and ABTS⁺ radical scavenging activities, compound **8** displayed
15 moderate antioxidant activity against ABTS⁺ radical, whereas compound **9** and **10** showed weak antioxidant
16 activity.

17
18 **Keywords:** Rice bran; Alkaline hydrolysis; Bound phenolic compounds; Structural identification;
19 Antioxidant activities;

20 1. Introduction

* Corresponding author. Tel./fax: +86 25 8439 5618.
E-mail address: xzhfood@njau.edu.cn (ZH. Xin).

Download English Version:

<https://daneshyari.com/en/article/7593840>

Download Persian Version:

<https://daneshyari.com/article/7593840>

[Daneshyari.com](https://daneshyari.com)