Latin American Journal of Pharmacy
(formerly *Acta Farmacéutica Bonaerense)*
Lat. Am. J. Pharm. **33** (8): 1245-51 (2014)

Regular article
Received: June 23, 2013
Revised version: July 12, 2014
Accepted: July 13, 2014

Analysis of Inorganic Elements in Mineral Chinese Medicine Limonitum after Processing

Shengjin LIU [1]# Huan YANG [1]#, Dekang WU [1]*, Haibo CHENG [2], Chunxiang XU [3], Ruichao LIN [4], Jingai TIAN [4] & Ziwan NING [1]

[1] *National First-Class Key Discipline for Traditional Chinese Medicine, Priority Academic of Jiangsu Higher Education Institutions, Nanjing University of Chinese Medicine, Nanjing 210023, China;*
[2] *Empirical Formulae Research Center, Key laboratory of of State Administration of Traditional Chinese Medicine for Empirical Formulae Evaluation and Achievements Transformation, Engineering Laboratory of Jiangsu Province for Antitumor Empirical Formula Research and Industrialization, College Of Pharmacy, Nanjing University of Chinese Medicine, Nanjing 210023, China;*
[3] *Jiangsu Institute for Food and Drug Control, Nanjing 210008, China;*
[4] *National Institute for Food and Drug Control, Beijing 100050, China*

***SUMMARY*. Mineral Chinese medicine limonitum is commonly used in Traditional Chinese Medicine (TCM), with the reported efficacy in treatment of chronic diarrhea, hematochezia, uterine bleeding and leucorrhea increase. The processing of TCM is a common practice and usually occurs before most are prescribed. It is usually processed by calcining and vinegar-quenching in traditional ways. However, the main purposes of these processing methods are still unclear. In this study, we determined the contents of 21 kind of inorganic elements in limonitum and their water decoctions under the above two processing methods by means of ICP-AES technique. The results show that the contents and types of elements in the powder and water decoctions of limonitum and its processed samples have significant differences (P<0.05). We suggest that these differences may play a direct or indirect role in the pharmacological effect as well as adverse effect of limonitum.**

RESUMEN. Limonitum se utiliza comúnmente en la medicina tradicional china (MTC) en el tratamiento de la diarrea crónica, hematoquecia, sangrado uterino y aumento de leucorrea. El procesamiento de la MTC es una práctica común y generalmente se presenta antes que la mayoría sea prescrita. Por lo general, es procesada por calcinación y enfriamiento con vinagre de manera tradicional. Sin embargo, los principales objetivos de estos métodos de procesamiento aún no están claros. En este estudio, se determinó el contenido de 21 clases de elementos inorgánicos en limonitum y sus decocciones acuosas mediante los dos métodos de procesado mencionados por medio de la técnica de ICP-AES. Los resultados muestran que el contenido y los tipos de elementos en las decocciones de polvo y de agua de limonitum y sus muestras procesadas tienen diferencias significativas (P < 0,05). Sugerimos que estas diferencias pueden tener un papel directo o indirecto en el efecto farmacológico, así como el efecto adverso de limonitum.

KEY WORDS: ICP-AES, Inorganic elements, Limonitum, Mineral Chinese medicine, Processing.

# Shengjin Liu and Huan Yang contributed equally to the project and are considered co-first authors.
* Author to whom correspondence should be addressed. *E-mail*: wudekang2008@126.com

ISSN 0326 2383 (printed ed.)
ISSN 2362-3853 (on line ed.)