Electrochemical Determination of Antioxidant Activity of Different Bee Products

Yuhong Zheng^{1,2,3}, Mengyao Wu⁴, Yuting Xu⁴, Xu Peng⁴, Mingjun Zhang⁴, Qiao Wang⁴, Jia Du^{4*},
Huawei Zhang^{1,4,*} and Li Fu^{1,4,*}

¹ Key Laboratory of Bee Products for Quality and Safety Control, Ministry of Agriculture, Institute of Apicultural Research, Chinese Academy of Agricultural Sciences Beijing 100093, PR China

² Institute of Botany, Jiangsu Province and Chinese Academy of Sciences (Nanjing Botanical Garden Mem. Sun Yat-Sen), Nanjing, PR China

³ The Jiangsu Provincial Platform for Conservation and Utilization of Agricultural Germplasm, Nanjing, PR China

⁴ College of Materials and Environmental Engineering, Hangzhou Dianzi University, Hangzhou 310018, PR China

*E-mail: djhd@hdu.edu.cn; zhw5984@hdu.edu.cn; fuli@hdu.edu.cn

doi: 10.20964/2019.04.09

Received: 22 November 2018 / Accepted: 30 December 2018 / Published: 10 March 2019

Bee products are of great benefit to the human body and have a good scavenging effect on free radicals in the human body. These products are rich in flavonoids and terpenes and have good antioxidant activities. Bee products can scavenge free radicals produced by the human body. Therefore, studies of the antioxidant activities of bee products are of great significance to human life and health. In this study, we proposed an electrochemical sensing platform based on the silver ion cross-linked hydrogel for the evaluation of three different bee products. After optimization, the antioxidant performance of the three bee products follows the following order: Royal jelly > honey > honeybee pupa. In addition, the proposed electrochemical sensing platform also exhibits excellent reproducibility and stability.

Keywords: Electrochemistry; Antioxidant activity; Hydrogel; Honey; Metal ions

[FULL TEXT](#)

© 2019 The Authors. Published by ESG (www.electrochemsci.org). This article is an open access article distributed under the terms and conditions of the Creative Commons Attribution license (<http://creativecommons.org/licenses/by/4.0/>).