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Identification of crocin, crocetin and zeaxanthin in *Crocus sativus* grown under controlled environment in Malaysia

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Abstract

Purpose The purpose of the study is to identify the high valuable compounds which are crocin, crocetin and zeaxanthin in the stigmas and stamens of *Crocus sativus* grown under controlled environment in Malaysia.

Design/methodology/approach Spectrophotometry and high-performance liquid chromatography (HPLC) analysis were used to identify and measure crocin, crocetin and zeaxanthin content qualitatively and quantitatively in the stigmas and stamens of *C. sativus* grown under controlled environment in Malaysia.

Findings The results of this study showed that crocin, crocetin and zeaxanthin were detected in the stigmas. However, among those three compounds, only crocetin was detected in the stamens. In the stigmas, the detectable level of crocin was high compared to crocetin and zeaxanthin. It was also found that crocetin was higher in the stamens compared to in the stigmas.

Originality/value This is the first attempt in Malaysia that the stigmas and stamens were directly purified from the natural sources by means of no addition of preservatives as *C. sativus* has never been grown here before. Furthermore, limited reports are available regarding the identification of compounds in saffron stamens.

Keywords

Author Keywords: *Crocus sativus*; Crocin; Zeaxanthin; Crocetin

KeyWords Plus: SAFFRON; PICROCROCIN; STIGMAS; L.

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Cited References: 15

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(from Web of Science Core Collection)

1. [Biomedical properties of saffron and its potential use in cancer therapy and chemoprevention trials](#) Times Cited: 237
 By: Abdullaev, FI; Espinosa-Aguirre, JJ
 CANCER DETECTION AND PREVENTION Volume: 28 Issue: 6 Pages: 426-432 Published: 2004
2. [Defective Autophagosome Formation in p53-Null Colorectal Cancer Reinforces Crocin-Induced Apoptosis](#) Times Cited: 16
 By: Amin, Amr; Bajbouj, Khuloud; Koch, Adrian; et al.
 INTERNATIONAL JOURNAL OF MOLECULAR SCIENCES Volume: 16 Issue: 1 Pages: 1544-1561 Published: JAN 2015
3. Title: [not available] Times Cited: 3
 By: Baranska, M.; Kaczor, A.
 Carotenoids: Nutrition, Analysis and Technology Published: 2016
 Publisher: Wiley, Hoboken, NJ
4. Title: [not available] Times Cited: 1
 Group Author(s): Bernama
 UM research shows promising future for Malaysian saffron Published: 2016
 accessed 10 September 2016
5. [Crocetin esters, picrocrocin and its related compounds present in Crocus sativus stigmas and Gardenia jasminoides fruits. Tentative identification of seven new compounds by LC-ESI-MS](#) Times Cited: 131
 By: Carmona, M; Zalacain, A; Sanchez, AM; et al.
 JOURNAL OF AGRICULTURAL AND FOOD CHEMISTRY Volume: 54 Issue: 3 Pages: 973-979 Published: FEB 8 2006
6. [Identification of carotenoid composition in selected 'ulam' or traditional vegetables in Malaysia.](#) Times Cited: 11
 By: Fatimah, A. M. Z.; Norazian, M. H.; Rashidi, O.
 International Food Research Journal Volume: 19 Issue: 2 Pages: 527-530 Published: 2012
7. [Analysis of flowering, stigmas yield and qualitative traits of saffron \(Crocus sativus L.\) as affected by environmental conditions](#) Times Cited: 37
 By: Gresta, F.; Avola, G.; Lombardo, G. M.; et al.
 SCIENTIA HORTICULTURAE Volume: 119 Issue: 3 Pages: 320-324 Published: FEB 3 2009
8. [Preliminary Phytochemical Screening of Different Solvent Extracts of Selected Indian Spices](#) Times Cited: 6
 By: Jyothiprabha, V; Venkatachalam, P.
 Int. J. Curr. Microbiol. App. Sci. Volume: 5 Issue: 2 Pages: 116-122 Published: 2016
9. [Cellular Transport and Bioactivity of a Major Saffron Apocarotenoid, Picrocrocin \(4-\(beta-D-Glucopyranosyloxy\)-2,6,6-trimethyl-1-cyclohexene-1-carboxaldehyde\)](#) Times Cited: 6
 By: Kyriakoudi, Anastasia; O'Callaghan, Yvonne C.; Galvin, Karen; et al.
 JOURNAL OF AGRICULTURAL AND FOOD CHEMISTRY Volume: 63 Issue: 39 Pages: 8662-8668 Published: OCT 7 2015
10. [Intestinal formation of trans-crocetin from saffron extract \(Crocus sativus L.\) and in vitro permeation through intestinal and blood brain barrier](#) Times Cited: 23
 By: Lautenschlager, M.; Sendker, J.; Huwel, S.; et al.
 PHYTOMEDICINE Volume: 22 Issue: 1 Pages: 36-44 Published: JAN 15 2015
11. [Zhongguo Jumin Caichan Chaju Yanjiu de Huigu yu Zhanwang Review and Prospect of the Research in Property Disparity of China's Residents](#) Times Cited: 2

By: Li, Shi; Wan, Haiyuan.

Laodong Jingji Yanjiu Volume: 3 Issue: 5 Pages: 28-44 Published: 2015

12. **Production of crocetin in transgenic *Chlorella vulgaris* expressing genes crtRB and ZCD1** Times Cited: 4
By: Lou, Sulin; Wang, Liuying; He, Lijuan; et al.
JOURNAL OF APPLIED PHYCOLOGY Volume: 28 Issue: 3 Pages: 1657-1665 Published: JUN 2016
13. **Saffron: A Natural Potent Antioxidant as a Promising Anti-Obesity Drug** Times Cited: 21
By: Mashmoul, Maryam; Azlan, Azrina; Khaza'ai, Huzwah; et al.
ANTIOXIDANTS Volume: 2 Issue: 4 Pages: 293-308 Published: DEC 2013
14. Title: [not available] Times Cited: 40
By: McDonald, M.S.
Photobiology of Higher Plants Published: 2003
Publisher: Wiley, Hoboken, NJ
15. **An Evidence-Based Systematic Review of Saffron (*Crocus sativus*) by the Natural Standard Research Collaboration** Times Cited: 26
By: Ulbricht, Catherine; Conquer, Julie; Costa, Dawn; et al.
Journal of Dietary Supplements Volume: 8 Issue: 1 Pages: 58-114 Published: MAR 2011

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