


13 hranom do zdravlja with food to health



Book of Abstracts of the 13th International
Scientific and Professional Conference
WITH FOOD TO HEALTH

Knjiga sažetaka s 13. međunarodnog
znanstveno-stručnog skupa
HRANOM DO ZDRAVLJA



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BOOK OF ABSTRACTS / KNJIGA SAŽETAKA

13th International Scientific and Professional Conference

WITH FOOD TO HEALTH

September 16th and 17th 2021, Osijek, Croatia

13. međunarodni znanstveno-stručni skup

HRANOM DO ZDRAVLJA

16. i 17. rujna 2021., Osijek, Hrvatska



Osijek and / i Tuzla, 2021.

BOOK OF ABSTRACTS	<i>13th International Scientific and Professional Conference WITH FOOD TO HEALTH</i>
KNJIGA SAŽETAKA	13. međunarodni znanstveno-stručni skup HRANOM DO ZDRAVLJA
Published by / Izdavači	<i>Faculty of Food Technology Osijek (University of Osijek) and Faculty of Technology (University of Tuzla)</i> Prehrambeno-tehnološki fakultet Sveučilišta u Osijeku i Tehnološki fakultet Univerziteta u Tuzli
Editors / Urednici	Jurislav Babić, Drago Šubarić, Midhat Jašić
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Cover page design / Dizajn naslovnice	Studio HS internet d.o.o., Osijek, Croatia / Hrvatska
Printing and Binding / Tisak i uvez	
Number of Copies / Naklada	250
Organising Committee / Organizacijski odbor	Jurislav Babić (<i>chairman / predsjednik</i>), Drago Šubarić (<i>vice-chairman / zamjenik predsjednika</i>), Midhat Jašić (<i>vice-chairman / zamjenik predsjednika</i>), Đurđica Ačkar, Marija Banožić, Veronika Barišić, Daniela Čačić Kenjerić, Frane Čačić Kenjerić, Ivana Flanjak, Ljubica Glavaš-Obrovac, Artur Gryszkin, Stela Jokić, Antun Jozinović (<i>secretary / tajnik</i>), Draženka Komes, Vlatko Kopic, Greta Krešić, Ante Lončarić, Marta Lores, Mario Panjičko, Jelka Pleadin, Jasmina Ranilović, Miralem Smajić, Darja Sokolić, Marizela Šabanović, Silvija Šafranko, Antonija Šarić, Dragan Vujadinović, Krunoslav Zmaić, Silva Wendling
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<i>The Conference will be credited as "International Course of the first category" according to the Rules of Croatian Medical Chamber.</i>	
Skup će biti bodovan kao „Međunarodni tečaj prve kategorije” sukladno Pravilniku Hrvatske liječničke komore.	
<i>The Conference will be credited according to the Rules of Croatian Chamber of Pharmacists.</i>	
Skup će biti bodovan sukladno Pravilniku Hrvatske ljekarničke komore.	
<i>A CIP catalogue record of this publication is available from the City and University Library Osijek under the number 150412042.</i>	
CIP zapis dostupan u računalnom katalogu Gradske i sveučilišne knjižnice Osijek pod brojem 150412042.	
ISBN (Osijek): 978-953-7005-79-5	
EAN (Osijek): 9789537005795	
ISSN (Tuzla): 2232-9536	
Osijek and / i Tuzla, 2021.	

Supported by:

Uz potporu:

*Croatian Academy of
Engineering*

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poster presentation

The chlorogenic acid (3-O-Caffeoylquinic acid) is a member of a group of caffeoylquinic acids, commercially delivered from *Lonicera japonica* Thunb and *Eucommia ulmoides* Oliver plants. It can be naturally found in green coffee beans, tea leaves and tobacco. Recently, the chlorogenic acid and its isomers have received increasing attention due to its multiple pharmacological effects and biological activities such as antioxidant, antibacterial, antiobesity, anti-inflammatory, antitumor, antihypertensive, and gastrointestinal tract-protective effects. This study aimed to evaluate the potential of high voltage electrical discharge in the extraction of chlorogenic acid from tobacco industrial waste, as an alternative source of this important compound. Extraction was conducted using high voltage electric discharge procedure under various process conditions: solvent/solid ratio (from 300 to 700 mL/g), treatment time (from 15 to 45 min) and frequency (from 40 to 100 Hz), to study the effect of these conditions on the concentration of chlorogenic acid. The optimal extraction conditions are defined as follow, solvent/solid ratio: 695.24 mL/g, frequency: 47.16 Hz and extraction time: 15.06 min. The present study clarified that tobacco waste is a rich source of chlorogenic acid that could be recovered and used for many purposes as a food additive or nutraceutical.

Keywords: chlorogenic acid, high voltage electric discharge, extraction, tobacco waste

Acknowledgment

This work has been supported by Croatian Science Foundation under the project "Application of innovative techniques of the extraction of bioactive components from by-products of plant origin" (UIP-2017-05-9909).