ICOSECS 8

University of Belgrade
Faculty of Technology and Metallurgy
Belgrade, Serbia, June 27-29, 2013

8th International Conference
of the Chemical Societies
of the South-East European Countries

BOOK OF ABSTRACTS

organized by

SAC - Society of Albanian Chemists
UCB - Union of Chemists in Bulgaria
PUC - Pancyprian Union of Chemists
AGC - Association of Greek Chemists
Society of Chemists and Technologists of Macedonia - SCTM
Chemical Society of Montenegro - CSM
Romanian Chemical Society - RCS
Serbian Chemical Society - SCS

Supported by the Ministry of Education, Science and Technological Development of the Republic of Serbia

CIP - Каталогизација у публикацији
Народна библиотека Србије, Београд

54(048)(0.034.2)
577.1(048)(0.034.2)
66(048)(0.034.2)

INTERNATIONAL Conference of the Chemical Societies of the South-East European Countries (8 ; 2013 ; Belgrade) Book of abstracts [Elektronski izvor] / 8th International Conference of the Chemical Societies of the South-East European Countries - ICOSECS 8, Belgrade, Serbia, June 27-29, 2013 ; [organized by the Society of Albanian Chemists ... et al. ; editors Sofija Sovilj, Aleksandar Dekanski]. - Belgrade : Serbian Chemical Society, 2013 (Belgrade : Faculty of Technology and Metallurgy). - 1 elektronski optički disk (CD-ROM) ; 12 cm

Sistemski zahtevi: Adobe Reader. - Nasl. sa naslovne strane dokumenta. - Tiraž 250. - Bibliografija uz većinu radova.

ISBN 978-86-7132-053-5
1. Society of Albanian Chemists
a) Хемија - Апстракти b) Биохемија - Апстракти c) Хемијска технологија - Апстракти
COBISS.SR-ID 199136780

ICOSECS 8

8th International Conference of the Chemical Societies of the South-East European Countries
BOOK OF ABSTACTS

Published by
Serbian Chemical Society, Karnegijeva 4/III, 11120 Beograd PAK 135804, Srbija
www.shd.org.rs, E-mail: office@shd.org.rs

For Publisher
Živoslav Tešić, president of the Society

Editors
Sofija Sovilj
Aleksandar Dekanski

Design & Computer Layout
Aleksandar Dekanski

ISBN 978-86-7132-053-5

Circulation
220 copies

Copying
Razvojno-istraživački centar grafičkog inženjerstva, Tehnološko-metalurški fakultet, Karnegijeva 4, Beograd, Srbija

COUNCIL OF THE CONFERENCE

Chairman: Ivanka Popović (SCS)

Honorary Chairman: Nikos Katsaros (AGC)

Željko Jaćimović (CSM), Svetomir Hadži-Jordanov (SCTM),
Epaminondas Leontidis (PUC), Ilirjan Malollari (SAC),
Sorin Roşca (RCS), Venko Beshkov (UCB)

INTERNATIONAL SCIENTIFIC COMMITTEE

Chairman: Sofija Sovilj (SCS)

Members: Gheorghiţa Jinescu (RCS), Victor Corneliu Radu (RCS),
Željko Jaćimović (CSM), Zoran Zdravkovski (SCTM),
Elda Marku (SAC), Chavdar Bonev (UCB), Nikos Katsaros (AGC)

INTERNATIONAL ORGANIZING COMMITTEE

Chairman: Živoslav Tešić (SCS)

Members: Corneliu Radu (RCS), Refik Zejnilović (CSM),
Adem Bekteshi (SAC), Marina Stefova (SCTM), Nayden Naydenov (UCB)

NATIONAL ORGANIZER

Serbian Chemical Society (SCS)

EXECUTIVE ORGANIZER

congrexpo

Supported by the Ministry of Education, Science and Technological Development of the Republic of Serbia

H P13

Phitochemical profiling by UHPLC-DAD/±HESI-MS/MS analyzes and hepatoprotective activity of *Gentiana cruciata* L. against CCl_4 induced liver injury in Wistar rats

Vladimir Mihailović, Danijela Mišić*, Jelena Katanić, Mirjana Mihailović*, Slavica Solujić, Vesna Stanković**, Milan Mladenović, Nevena Stanković
*Department of Chemistry, Faculty of Science, University of Kragujevac, Radoja Domanovića 12, 34000 Kragujevac
**Institute for Biological Research "Siniša Stanković", University of Belgrade, Bulevar despota Stefana 142, 11060 Belgrade
***Institute of Pathology, Faculty of Medicine, University of Kragujevac

Many *Gentiana* species are known for their pharmaceutical values, such as *Gentiana cruciata* L., commonly called cross gentian [1]. The dried roots and above-ground parts of *G. cruciata* are consumed in the Balkan region as herbal tea or a medicinal wine for loss of appetite, as a stomachic and component in preparations showing beneficial effects in gall and liver diseases [2]. This study using *in vivo* model investigates hepatoprotective activity of *G. cruciata* aerial part methanol extract (GCA) against carbon tetrachloride-induced liver injury in rats. Wistar rats were orally pretreated with GCA (100, 200, and 400 mg/kg) and silymarin (100 mg/kg) for seven days before they were treated with CCl_4 (1 ml/kg, 1:1 mixture in olive oil) which caused liver injury. Separation, determination and quantification of components in GCA was performed using Dionex Ultimate 3000 UHPLC system equipped with a diode array detector (DAD) and connected to a triple-quadrupole mass spectrometer. Pretreatment with GCA dose-dependently and significantly ($p < 0.001$) decreased levels of serum transaminases, alkaline phosphatase and total bilirubin, whereas an increase was found in the level of total protein compared with CCl_4-treated group. In the liver tissue antioxidant studies, we found a significant increase in the levels of catalase, superoxide dismutase and reduced glutathione, whereas there was marked reduction in the levels of thiobarbituric acid-reactive substances, as compared to CCl_4 treated group. Histological analyses also show that GCA reduced the incidence of liver lesions including necrosis, ballooning degeneration and micro- and macro-vesicular changes induced by CCl_4 in rats. GCA was characterized by the presence of sweroside, swertiamarin, gentiopicrin, loganic acid, isovitexin 4',7-diglucoside, orientin and vitexin, as revealed by UHPLC-DAD-MS and UHPLC-MS/MS analyses. Quantification of targeted compounds in the SRM (selected reaction monitoring) experiment of UHPLC-MS/MS analysis clearly indicated that gentiopicrin (1.067%) was the dominant secoiridoid glycoside in GCA, whereas concentrations of sweroside (0.064%) and swertiamarin (0.033%) were significantly lower.

This research was supported by the Ministry of Education and Science of the Republic of Serbia (projects No. III 43004 and OI173024).

References:

[1] S. Hayta, A. Gurel, I.H. Akgun, F. Altan, M. Ganzera, B. Tanyolac, E. Bedir, *Biologia* **66** (2011) 618-625.
[2] N. Menković, K. Šavikin, S. Tasić, G. Zbunić, S. Stešević, S. Milosavljević, D. Vincek, *Journal of Ethnopharmacology* **133** (2011) 97–107.