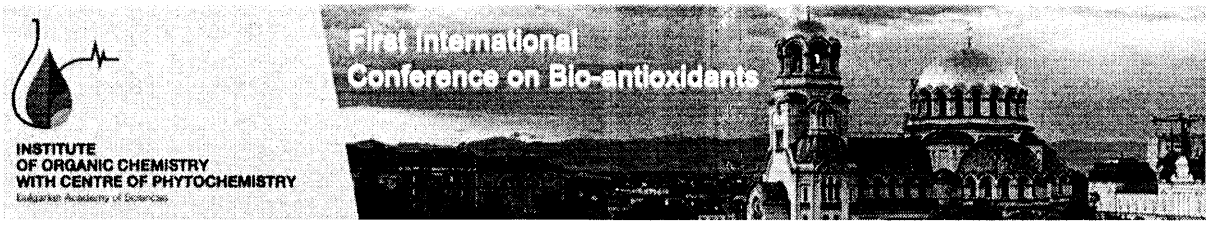
Antioxidant Activity of Black Chokeberry (*Aronia melanocarpa*) Polyphenols: *in vitro* and *in vivo* Evidences and Possible Mechanisms of Action.

Petko Denev

Laboratory of Biologically Active Substances, Institute of Organic Chemistry with Centre of Phytochemistry, Bulgarian Academy of Sciences, Plovdiv-4000, Bulgaria
Pnone/fax: +35932642759; e-mail: petkodenev@yahoo.com

Black chokeberry (*Aronia melanocarpa*) is a distinctive berry with a high content of polyphenol compounds and possesses one of the highest *in vitro* antioxidant activities among fruits. The bioavailability of aronia polyphenols seems to be low, but there is ample evidence for chokeberry health benefits including antidiabetic, cardioprotective, hepatoprotective, antimutagenic, and anticarcinogenic effects. The lecture presents the available information for the bioavailability and antioxidant activity of chokeberry polyphenols and explains the possible mechanisms of action *in vivo* in the prevention and treatment of oxidative stress-related diseases. It reviews the available data for chokeberry antioxidant activity *in vitro*, in isolated cells and cell lines, and *in vivo*, in both human subjects and animals. It is evident that *in vivo* antioxidant action of chokeberry extends far beyond radical scavenging and includes suppression of reactive oxygen and nitrogen species formation, inhibition of prooxidant enzymes, restoration of antioxidant enzymes, and probably cellular signaling to regulate the level of antioxidant compounds and enzymes.

Acknowledgements: This work was funded by project DN 09/20 “Integrated approach for improving the quality, organoleptic properties and biological activity of new functional foods from chokeberry (*Aronia melanocarpa*) by copigmentation and synergy in antioxidant activity.” of the Bulgarian National Science Fund.



Покана

Уважаеми доц. Петко Денев,

Институт по Органична Химия с Център по Фитохимия – БАН има честта и привилегията да организира Първата международна конференция по био-антиоксиданти на тема: „Природните био-антиоксиданти – като основа за нови синтетични лекарства и хранителни добавки" в София от 25 до 29 юни 2017 г. С цел подпомагане участието на млади учени и студенти в това престижно международно научно мероприятие се организира едновременно и Младежка школа по био-антиоксиданти.

Темата на Първата международна конференция по био-антиоксиданти е безспорно актуална през последното десетилетие. В последно време се обръща специално внимание не само на терапията на трудно лечими заболявания, но и на превенцията на тези заболявания, което има значим социален ефект. Поканени са и ще участват водещи учени в областта от цял свят – Италия, Испания, Полша, Гърция, Русия, Бразилия, САЩ, Индия. Очакват се около 100-150 участника. Участието на утвърдени учени от цял свят ще даде възможност на научната общност и младите хора в България да се запознаят с най-новите тенденции за търсене и предлагане на нови био-антиоксиданти – природни и синтетични.

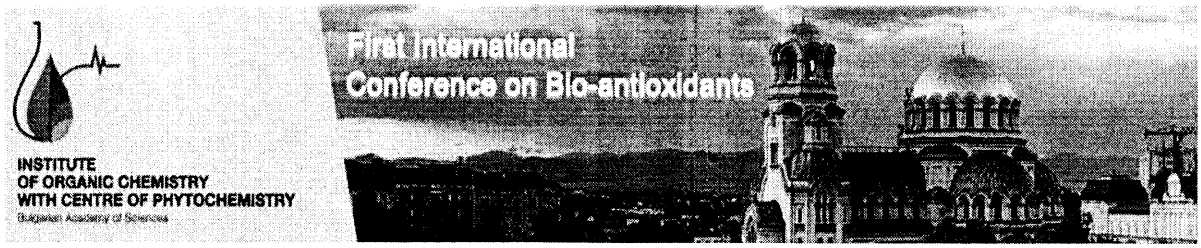
Организационният комитет на Първата международна конференция по био-антиоксиданти има удоволствието да Ви покани като лектор в научното направление: „ Анализ на храни и хранителни добавки". Вие сте освободен от регистрационна такса..

Повече информация може да намерите на сайта на конференцията:

http://icba2017.orgchm.bas.bg/index.php

15.01.2017 г.
София

С уважение:
доц. д-р инж. Весела Кънчева
Председател на Организационния комитет
За контакт: 02/9606-187; 0988/934995
ИОХЦФ-БАН, „акад. Г. Бончев" бл. 9
София 1113; e-mail:vessy.kancheva@abv.bg



First International Conference on Bio-antioxidants:

ICBA 2017

"Natural Bio-antioxidants – as a base for new synthetic drugs and food additives/supplements"

Sofia, Bulgaria, 25-29 June 2017

Final Scientific Program

Sunday, 25 June 2017

Registration and information Company for International Meetings	**Bulgarian Academy of Sciences –Presidium**	**12.00-17.00**

Welcome and Opening Ceremony

Prof. Veselin Brezin, Bulgarian National Scientific Fund, Ministry of Education, Bulgaria	Welcome address	16.00-16.10
Mrs. Boryana Kadmonova Evrika Foundation, Bulgaria	Welcome address	16.10-16.20
Prof. Svetlana Simova Director IOCCP-BAS, Bulgaria	Welcome address	16.20-16.30
Prof. Vessela Kancheva Chair of organizing committee, IOCCP - BAS, Bulgaria	Opening Plenary Lecture Oxidative Stress, Lipid Oxidation and Bio-antioxidants	16.30-17.15
Students from the National School of Music "Lyubomir Pipkov"	Welcome to Bulgaria	17.15-17.30
Welcome Reception	**Hotel of Bulgarian Academy of Sciences Dom na uchenia – BAN 50 Shipchenski prohod Str., 1113 Sofia, Bulgaria**	**18.30-20.30**

Tuesday, 27.06.2017

Topics D: Food Analysis, food additives and food supplements; Bulgarian Academy of Sciences
Moderators: ***Prof. R. Amarowicz, Prof. F. Ribarova, Prof. P. Denev***

PL5	Prof. Ryszard Amarowicz, Poland	Antioxidant activity of natural compounds in food model systems	13.00-13.45
KL8	Prof. Fanny Ribarova, Bulgaria	Essentiality of dietary non-essential amino acids for antioxidative defense	13.45-14.15
KL9	Acad. Atanas Atanasov, Bulgaria	Naturally derived products as nutraceuticals for human health	14.15-14.45
OP7	Prof. Petko Denev, Bulgaria	Antioxidant Activity of Black Chokeberry (*Aronia melanocarpa*) Polyphenols: *in vitro* and *in vivo* Evidences and Possible Mechanisms of Action.	14.45-15.00
		Coffee break	**15.00 -15.30**

Tuesday, 27.06.2017

Joint Topics, Bulgarian Academy of Sciences
Moderators: ***Prof. G.Litwinienko, Prof. C.- B. Diaz, Prof. I.Pajeva***

OP8	Petko Alov, I. Tsakovska, I. Pajeva, Bulgaria	Hybrid classification / regression approach to QSPR modelling of polyphenol antioxidant activity in assays with a stoichiometric enpoint	15.30 -15.45
OP9	Magdalena Kondeva-Burdina, A. Kasabova, St. Balkanski, V. Tzankova, I. Kostova, Bulgaria	Study on the in vitro activity of Praseodymium complex of 5-aminoorotic acid	15.45 -16.00
OP10	Silvia Tsanova-Savova, S. Velikov, V. Petkov, Bulgaria	The Flavonoids Composition of Bulgarian Foods – Comparison with USDA Database	16.00 -16.15
OP11	Lily Andonova, D. Zheleva-Dimitrova, M. Georgieva, Al. Zlatkov, Bulgaria	Evaluation of in vitro antioxidant activity of some newly synthesized methylxanthines with arylpiperazine moiety.	16.15-16.30
OP12	Rumyana Simeonova, V. Vitcheva, M. Kondeva-Burdina, A. Shkondrov, I. Krasteva, Bulgaria	Evaluation of the antioxidant potential of defatted extract from Astragalus spruneri (Fabaceae) in spontaneously hypertensive rats (SHRs)	16.30-16.45