



INDC 2015

15TH

www.indc.cz

INTERNATIONAL NUTRITION & DIAGNOSTICS CONFERENCE

OCTOBER 5 - 8, 2015

Venue: Hotel DAP, Vítězné náměstí 4/684, 160 00 Prague 6, Czech Republic

BOOK OF PROCEEDINGS

15TH INTERNATIONAL NUTRITION & DIAGNOSTICS CONFERENCE

October 5 – 8, 2015

The Conference is organized under the auspices of:

PharmDr. Jiří Skalický, Ph.D., Member of the Parliament of the Czech Republic

Venue:

Hotel DAP, Vítězné náměstí 4/684, Prague 6, Czech Republic

Organized by:



Committees

INTERNATIONAL SCIENTIFIC COMMITTEE

- I. Acworth (USA)
- I. Bondarenko (Russia)
- A. Horna (Czech Republic)
- P. Jandera (Czech Republic)
- E. Jansen (The Netherlands)
- R. Mabrouk (Egypt)
- M. Macka (Australia)
- H. Tlaskalová-Hogenová (Czech Republic)
- J. Xiao (China)

LOCAL ORGANIZING COMMITTEE

- J. Blatná
- A. Horna
- J. Hornová
- M. Hornová
- J. Vávrová
- C. Garnica Ortiz

DISCLAIMER

The organizer takes no responsibility for any of the content stated in the abstracts. This abstract book contains abstracts as provided by their authors.

Edited by A. Horna
ISBN 978-80-7395-901-2

L25 BIOMARKERS OF (ANTI)OXIDANT STATUS IN HUMAN NUTRITION, AGING AND DISEASE

Jansen E. (1), Beekhof P. (1), Cremers H. (1), Ruskovska T. (2)

(1) Centre for Health Protection, National Institute for Public Health and the Environment, Bilthoven, the Netherlands

(2) Faculty of Medical Sciences, Goce Delcev University, Stip, Macedonia

E-mail: eugene.jansen@rivm.nl

Keywords: biomarkers, nutrition, aging, oxidative stress

The (anti)oxidant status of individuals is an important factor for the risks of chronic diseases. Biomarker measurements in serum/plasma is a good way to determine the status of the oxidant/antioxidant balance. From our own experience, we come to a proposal of a set of biomarkers for nutritional intake of antioxidants to determine the (anti)oxidant status in serum as a reflection of nutrition. Serum concentrations of biomarkers of fat-soluble vitamins are not suitable to assess transient changes in nutritional intake, because of their strong homeostasis. For long-term epidemiological studies however, they are well-suited. In addition, a number of oxidation/redox biomarkers can be used in addition to the antioxidant to assess possible relations with health risks. The best biomarkers for this purpose are the reactive oxygen metabolites and total thiols. Examples will be given from large-scale European studies.

With the combination of vitamin A, vitamin E, carotenoids (as measured with HPLC), vitamin C, reactive oxygen metabolites, biological antioxidant potency and total thiols (as measured with an auto-analyzer), an overall view is obtained concerning the intake and effect of antioxidants in nutrition and aging research.

In this paper we describe the methods to measure a selection of these biomarkers in general population. Critical points in biomarker validation with respect to blood sampling, storage conditions and assay stability are discussed.