



# INDC 2015

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## INTERNATIONAL NUTRITION & DIAGNOSTICS CONFERENCE

OCTOBER 5 - 8, 2015

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

**BOOK OF PROCEEDINGS**

# 15<sup>TH</sup> INTERNATIONAL NUTRITION & DIAGNOSTICS CONFERENCE

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Institute of Nutrition  
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## P88 VALIDATION OF BIOMARKERS OF OXIDATIVE STRESS IN LARGE-SCALE HUMAN STUDIES

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**Objectives.** Oxidative stress has been proposed to be important in age-related processes and chronic diseases. Before biomarkers of oxidative stress are measured in large-scale human studies, they need validation on storage stability and other characteristics. Amongst several candidates (MDA, FRAP, TAS, TOS, GSH, GPX, SOD), three biomarkers were selected which cover different aspects of the oxidative stress process.

**Methodology.** ROM (Reactive Oxygen Metabolites, Diacron) was used as biomarker of oxidative stress, BAP (Biological Antioxidant Potential, Diacron) for anti-oxidant status and TTL (Total Thiol Levels, RelAssay) for the redox status. (DX, Beckman-Coulter).

**Results.** The assays for the biomarkers ROM, BAP and TTL were adapted for an auto-analyzer (DX, Beckman-Coulter) with very good reproducibility. The biomarkers were stable on short- and long-term storage. Also they showed no significant differences in blood samplings at different times of the day, nor a post-prandial effect. This set of biomarkers was successfully applied in several large-scale European studies (total 20,000 samples) on aging and nutrition.

**Conclusion.** A set of three biomarkers of oxidative stress was selected for use on an auto-analyzer and applied successfully in large-scale European studies.

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