

3rd World Congress on



Maillard Reaction & Glycation

3rd WORLD CONGRESS ON
MAILLARD

BUDAPEST 2016

TARGETING GLYCATION IN HEALTH & DISEASES

MAY 26-27, 2016

HUNGARIAN ACADEMY OF SCIENCES

BUDAPEST, HUNGARY

TARGETING GLYCATION IN HEALTH & DISEASES

May 26-27, 2016

Academy of Sciences, Budapest, Hungary



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Day 1: May 26, 2016

7h30 Opening of Registration – Welcoming of attendees

8h30 Introduction Remarks by Chairpersons
Prof. Ladislav Robert & Prof. Marvin Edeas

With the participation of the honorary committee:

Prof. Gyorgy Kosztolanyi, President of the Medical Section of the Hungarian Academy of Sciences, Budapest, Hungary

Prof. Tamas Freund, Vice President of Hungarian Academy of Sciences, Budapest, Hungary

Prof. Anna Kadar, Medical University Semmelweis, Budapest, Hungary

Prof. Karoly Kocsis, President of the council of external members of the Hungarian Academy of Sciences

Prof. Karoly Lapis, Medical University Semmelweis, Budapest, Hungary

Prof. Sylvester Vizi, Past President of Hungarian Academy of Sciences, Budapest, Hungary

9h00 Science in Hungary & Hungary in Science

Istvan Hargittai, Budapest University of Technology and Economics, Budapest, Hungary

Session 1: Recent Scientific Advances & Directions

Chaired by E. Boulanger, M. Edeas & L. Robert

9h30 Introductory lecture: the history of redox biology, from "reduktones" of Hans von Euler to free radicals, exemplified by the Maillard Reaction and the elastin receptor, their role in atherogenesis
Ladislav Robert & Jacqueline Labat-Robert, Hôtel Dieu, Paris, France

10h15 Coffee Break & Posters Session

10h45 Oxidative stress, glycation & redox 2016: Questions, controversies & perspectives in health and diseases
Marvin Edeas, Chairman of ISANH, Paris, France

11h15 Extracellular matrix glycation, redox status and cross-linking
Sylvie Ricard-Blum, Université Lyon 1, Lyon France

11h40 Poly (ADP-ribose) signalization in oxidative stress
Laszlo Virag, University of Debrecen, Debrecen, Hungary

12h05 Concepts and misconcepts regarding the nature of oxygen free-radicals in the living systems
Imre Zs Nagy, University of Debrecen, Debrecen, Hungary

12h30 Short oral presentations upon abstracts submission (7 minutes + 3 minutes for questions)

Glycated human albumin triggers mitochondrial metabolism of preadipocyte cells

Philippe Rondeau, UMR Diabète Athérombose Thérapies Réunion Océan Indien (DéTROI), France

Nitric oxide metabolites and dinitrosyl iron complexes in the non-enzymatic glycation reactions

Alexey Topunov, Bach Institute of Biochemistry, Research Center of Biotechnology of the Russian Academy of Sciences, Russia

12h50 Lunch Break & Posters Session

Session 2: Maillard Reaction in Pathologies & Diseases

Chaired by *R. Nagaraj, S. Ricard-Blum & I. Zs Nagy*

- 14h15 **AGE-RAGE interaction in fibrosis of the eye lens**
Ram Nagaraj, University of Colorado School of Medicine, Colorado, USA
- 14h40 **Microbiota & Maillard Reaction: Metabolization of Maillard reaction products by the human colonic microbiota**
Michael Hellwig, Technische Universität, Dresden, Germany
- 15h05 **AGE-RAGE axis: implication in fibrosis and aging**
Eric Boulanger, INSERM-Lille2, Lille, France
- 15h30 **Effect of AGE intake on inflammation and ageing: state of sciences and perspectives**
Ivan Bautmans, Vrije Universiteit, Brussels, Belgium

15h55 Coffee Break & Posters Session

- 16h25 **Supra-additive impact of mitochondrial dysfunction and subsequent oxidative stress in central nervous system pathology**
Beata Sperlagh, Hungarian Academy of Sciences, Hungary
- 16h50 **Short oral presentations upon abstracts submission (7 minutes + 3 minutes for questions)**
- AGE accumulation contributes to synaptic dysfunction**
Shirley ShiDu Yan, University of Kansas, USA
- Glycation abolishes the cardioprotective effects of albumin during ischemia-reperfusion**
Faadiel Essop, Stellenbosch University, South Africa
- Prevention of glycosylation by natural and synthetic antioxidants**
Izabela Sadowska-Bartosz, University of Rzeszów, Poland
- Glycated apolipoprotein A-I exacerbates cellular senescence in human umbilical vein endothelial cells accompanied by impaired insulin secretion activity and embryo toxicity**
Kyung-Hyun Cho, Yeungnam University, Korea
- Endothelial cell dysfunction caused by diabetes and age related reactive dicarbonyls**
Andreas Simm, Martin-Luther-University Halle-Wittenberg, Germany
- High-density lipoprotein oxidation in type 2 diabetic patients: is it a glycation-catalyzed process?**
Annunziata Lapolla, University of Padova, Italy
- SRAGE and esRAGE levels show significant inverse relationship to hsCRP in lean, but not in centrally obese apparently healthy adolescents**
Katarina Sebekova, Comenius University Medical Faculty, Bratislava, Slovakia
- Glucose modification and oxidation of macrophage migration inhibitory factor in Alzheimer's disease**
Omar Kassaar, University of Bath, United Kingdom
- Momordica charantia (bitter melon) extracts promote angiogenesis in vitro via the receptor for advanced glycation endproducts (RAGE)**
Nessar Ahmed, School of Healthcare Science, Manchester Metropolitan University, United Kingdom
- An insect model to investigate the effect of hyperglycaemia on immunity**
Marjorie Gibbon, University of Bath, United Kingdom
- 18h40 **End of first day**
- 20h00 **Speakers & attendees together dinner**
To participate in the dinner, please register online.

Day 2: May 27, 2016

8h00 Introduction of the second day

Chaired by M. Stenberg & F. Tessier

8h00 Exercise and brain function: is it redox regulated?

Zsolt Radak, University of Physical Education, Budapest, Hungary

8h25 The role of hemoglobin derived heme in the pathogenesis of vascular disorders

György Balla, University of Debrecen, Debrecen, Hungary

Session 3: Maillard Reaction, Glycation & Food

8h50 What do dietary Maillard reaction products and in vivo AGEs have in common? Are they a risk to human health?

Frédéric Tessier, Faculté de Médecine, Université Lille 2, Lille, France

9h15 Diet-induced accumulation of AGEs contribute to metabolic diseases onset by interfering with SREBP-1c activity

Raffaella Mastrocola, University of Turin, Turin, Italy

9h40 Investigation of the Michael addition between quinones and amines as a possible mechanism for inhibition of Maillard reactions in foods with plant polyphenols: effects in lactose-free ultra-high-temperature processed milk

Marianne Lund, University of Copenhagen, Denmark

9h50 Glycation impairs hepatic lipid metabolism and glucose tolerance in high-fat diet-induced obese rats, contributing to the onset of NAFLD

Paulo Matafome, University of Coimbra, Portugal

10h00 Studies on relationship between total phenolics and rutin contents, antioxidant capacity, fermentation process and the formation of AGEs in buckwheat-based ginger cakes

Małgorzata Przygodzka, Institute of Animal Reproduction and Food Research, Poland

10h10 Amadoriase engineered enzyme for protein deglycation

Federica Rigoldi, Politecnico di Milano, Italy

10h20 Coffee Break & Posters Session

Session 4: How to Evaluate Glycation & Glycated-End Products in Health & Diseases?

10h50 Detection of AGEs as markers for carbohydrate metabolism and protein denaturation

Ryoji Nagai, Tokai University, Kumamoto, Japan

11h15 Glycation of lens proteins in diabetes & its non-invasive assessment

Jan Škrha, Charles University, Prague, Czech Republic

11h40 Skin collagen pentosidine and fluorescence in diabetes are predictors of creatininemia increase and retinopathy progression already 6 years after punch-biopsy

Michel Stenberg, Université René Descartes, Paris, France

Session 5: AGEs & RAGEs: Strategies & Innovations

12h05 Delayed intervention with pyridoxamine improves metabolic function and prevents adipose tissue inflammation and insulin resistance

Casper Schalkwijk, Maastricht University, Maastricht, The Netherlands

12h30 Lunch Break & Posters Session

Chaired by R. Mastrocola & R. Nagai

13h30 i-RAGE as a novel carboxymethylated peptide to prevent AGE-induced apoptosis and endoplasmic reticulum stress in vascular smooth muscle cells
Jean-Sébastien Maltais, Sherbrooke University, Québec, Canada

13h55 Short oral presentations upon abstracts submission (7 minutes + 3 minutes for questions)

AGEs and bone fracture

Deepak Vashishth, Rensselaer Polytechnic Institute, USA

Physicochemical and biological properties of fish protein hydrolysate-ribose conjugate by Maillard reaction

Kwang-Won Lee, Korea University, Korea

Glycation of plant proteins during environmental stress and ageing: methodological approaches, potential mechanisms and biological role

Andrej Frolov, Leibniz-Institute of Plant Biochemistry, Germany

Identification of the Schiff base intermediate in the Glucose/Asparagine reaction by coupled HPLC-FTIR spectroscopy

Constantinos Varotsis, Cyprus University of Technology, Cyprus

Antioxidant properties of heterocyclic Maillard reaction intermediates

Clemens Kanzler, Berlin Institute of Technology, Germany

Role of advanced glycation end products on vascular remodelling processes

Diana Bou-Teen, Health Research Institute of Santiago (IDIS), Spain

Glucose affects aspirin-induced acetylation of cyclooxygenase 1 (COX-1) in human platelets

Francesco Finamore, University of Geneva, Switzerland

15h05 Coffee Break & Posters Session

15h30 Black radish (*Raphanus sativus* L. var. *niger*): A potential hepatoprotective vegetable in a oxidative stress model

Taekyun Shin, Jeju National University, Korea

Comparison of telomere length and skin auto fluorescence as markers of ageing in COPD

Niki Reynaert, Maastricht University Medical Center, Netherlands

Characterization of Advanced Glycation end Products by fluorescence and MALDI-TOF/MS in patients with heart failure

Beatriz Paradela-Dobarro, Health Research Institute of Santiago de Compostela, Spain

16h00 Discussion & conclusion

Discussion about the publication of the proceedings of Maillard Reaction 2016 in Journal of ISANH

Maillard Reaction Awards 2016

16h30 End of Maillard Reaction 2016