ISTERH2013　Ｓｙｍｐｏｓｉｕｍ

Symposium1.

Zinc Deficiency in the Aged

Chairpersons

Toshiyuki Fukada,

Taiho Kambe

1). Zinc and Aging: An introduction

Toshiyuki Fukada (RIKEN Center for Integrative Medical Sciences, Japan)

2). Basic and Clinical Aspects in Zinc and Degenerative Diseases of Ageing

Ananda Prasad (Karmanos Cancer Center, Wayne State University School of Medicine, USA)

3). Zinc Deficiency Anemia in Patients with Chronic Kidney Disease (CKD)

Tatsuo Fukushima (Kameoka Hospital, Japan)

4). Zinc, diabetes mellitus and cardiovascular disease

Samir Samman (Discipline of Nutrition & Metabolism, University of Sydney, Australia)

5). Serum Zinc Concentration and C-viral Chronic Liver Disease in the Aged

Shu Ohshiro, Mitsuhiko Moriyama (Department of Internal Medicine, Nihon University School of Medicine, Japan)

6). Zinc Supplementation in the Geriatric Hospital

Satoru Miyata (Kusatsu General Hospital, Japan)

7). Zinc in Alzheimer's disease

Ashley I. Bush, MD PhD, Robert A. Cherny, PhD, David I. Finkelstein, PhD and Paul A. Adlard, PhD (Florey Institute of Neuroscience and Mental Health, The University of Melbourne, Australia)

8). Zinc transporters and Aging: Closing remarks

Taiho Kambe (Graduate School of Biostudies, Kyoto University, Japan)

Symposium 2

New approaches to metallothionein research and the recent clinical findings

Masao Sato (Former Professor, Tokushima-Bunri University、Japan)

Katsuyuki Nakajima(Graduate School of Health Sciences, Gunma University,　Japan)

1. Mechanisms of metallothionein gene transcription and epigenetic changes in the promoter

Tomoki Kimura

Department of Toxicology, Faculty of Pharmaceutical Sciences, Setsunan University

2. Possible inhibitory function of Metallothionein in Obesity

Shinya Suzuki, Takashige Kawakami, Satoshi Takasaki, Yoshito Kadota, Masao Sato

(Faculty of Pharmaceutical Sciences, Tokushima Bunri University, Tokushima, Japan)

3. Enzyme-linked immunosorbent assay for metallothionein- III

in humans and experimental animals.

Katsuyuki Nakajima, Hidetoshi Saito, Tsukasa Kodaira, , Kyoumi Nakazato, Satoru Tomioka, Takeaki Nagamine

1) Graduate School of Health Sciences, Gunma University, Maebashi, Japan.
2) Department of Pediatrics, Teikyo University School of Medicine, Tokyo, Japan

4. Significance of urinary metallothionein in Japanese farmers exposed to cadmium through consumption of home-harvested rice

Hyogo Horiguchi

Department of Environmental Health Sciences, Akita University, Graduate School of Medicine, Akita, Japan.

5. Plasma metallothionein I/II in liver diseases

Takeaki Nagamine[1)], Satoru Tomioka[1)], Kyoumi Nakazato[1)],, Katsuyuki Nakajima[1)],, Hiroko Kodama[2)].

3) Graduate School of Health Sciences, Gunma University, Maebashi, Japan.
4) Department of Pediatrics, Teikyo University School of Medicine, Tokyo, Japan

Symposium 3

Is Dietary Exposure to Arsenic a Cause for Concern?

Charipersons

Parvez Haris (De Montfort University, UK)

Jun Yoshinaga (University of Tokyo, Japan)

1) Risk assessment of inorganic arsenic exposure through the diet in Japanese
   Jun Yoshinaga (University of Tokyo, Japan)
2) Rice consumption and its contribution to arsenic exposure in 16,792 Bangladeshis
   Habibul Ahsan (Chicago University, USA)
3) Arsenic exposure, dietary patterns, and cardiovascular risk in Bangladesh
   Yu Chen (New York University School of Medicine, USA)
4) Distribution of arsenic species in brown, polished and milled rice
   Tomohiro Narukawa (National Metrology Institute of Japan, Japan)
5) Dietary exposure to arsenic in different ethnic communities in the United Kingdom
   Parvez I Haris (De Montfort University, UK)

Symposium 4

Populations at Risk for Trace Element Deficiencies

Jeanne Freeland-Graves and James McClung, Co-Chairs

1) **Availability of Dietary Zinc and Zinc Deficiency**

Harold Sandstead

University of Texas Medical Branch, Galveston, USA

2) Patients at Risk for Trace Element Deficiencies: Bariatric Surgery

Jeanne H Freeland-Graves, Jane Lee, Tamara Mousa, and Jerry Elizondo

University of Texas at Austin; Southwest Bariatric Surgeons, Austin, Texas, USA

3) Female athletes: A population at risk of mineral deficiencies and associated performance decrements

James P. McClung

US Army Research Institute of Environmental Medicine, Natick, MA, USA

4) Estimation of iron requirements by numerical analysis of population-based indicators

Katsuhiko Yokoi

Seitoku University, Matsudo, Japan

5) Role of copper in maintenance of iron homeostasis during states of iron-deficiency anemia

James F. Collins

University of Florida, Gainesville, FL, USA

Symposium 5

Advanced Analytical Techniques

Chairpersons

Daigo Iwahata (Ajinomoto Co. Inc. Japan)

Kazumi Inagaki (NMIJ/AIST, Japan)

1) Inductively coupled plasma time-of-flight mass spectrometry for single cell analysis for immunological and functional Assay

Katsu. Kawabata (IAS Inc., Tokyo, Japan), Scott Tanner, PhD and Dmitry Bandura, PhD (DVS Sciences Inc., Toronto, Canada)

2) Demonstration of high selectivity/sensitivity of ICP-QQQ in challenging applications

Naoki Sugiyama (Agilent Technologies Japan Ltd., Tokyo, Japan)

3) High sensitive elemental analysis of single yeast cells by time-resolved inductively-coupled plasma mass spectrometry using a high efficiency cell introduction system"

Kazumi Inagaki, Shin-ichi Miyashita, A. S. Groombridge, Shin-ichiro Fujii, Keisuke Nagasawa, Tetsuya Okahashi, Akiko Takatsu, Koichi Chiba. (NMIJ/AIST, Tsukuba, Japan)

4) Elemental distribution and chemical speciation by synchrotron radiation X-ray fluorescence analysis

Akiko Hokura (Tokyo Denki University, Tokyo, Japan)

5) New metal-coded affinity tag for highly selective and sensitive analyses by HPLC/ICP-MS

Daigo Iwahata (Ajinomoto. Co., Inc., Kanagawa, Japan)

Symposium 6

Symposium Title: Molecular Aspects of Metalloid Toxicity
Organizer
Seiichiro Himeno (Tokushima Bunri University)
Yasumitsu Ogra (Showa Pharmaceutical University)

1) Daigo Sumi and Seiichiro Himeno (Faculty of Pharmaceutical Sciences, Tokushima Bunri University): Effects of arsenic on immunological functions
2) Tsuyoshi Nakanishi (Laboratory of Hygienic Chemistry and Molecular Toxicology, Gifu Pharmaceutical University): Structure activity relationships in organotin-induced toxicity via retinoid X receptor signaling pathway

3) Hirotaka Imai (School of Pharmaceutical Sciences, Kitasato University): Novel lipid peroxidation dependent cell death induced by deficiency of selenoprotein GPx4
4) Yasumitsu Ogra (Laboratory of Chemical Toxicology and Environmental Health, Showa Pharmaceutical University): Identification of novel tellurium metabolites in selenium-accumulating plants

Symposium 7
I. Copper Balance and the Related Factors
Chairpersons:
Noboru Saito (Internal Medicine, Kusatsu General Hospital, Japan)
Mamoru Nishiyama (The National Institute of Health and Nutrition, Japan)

1) The relationships between copper intakes and serum copper levels in inpatients
Noboru Saito (Internal Medicine, Kusatsu General Hospital, Japan)
2) Equilibrium copper intake estimated by human minerak balance study.
Mamoru Nishiyama (The National Institute of Health and Nutrition, Japan)
3) Examination of the copper supplement using the cocoa in enteral nutrition management.
Kiyoshi Wakugami (Ginowan Memorial Hospital, Japan)
4) Influence of serum concentrations of coopper, content ration of zinc and copper in products of liquid nutrient under long term enteral nutririon
Ken Wakugami (Internal Medicine, Keihin Hospital, Japan)

II. New Insights into the Role of Manganese in Health and Disease
Chairpersons
Michael Aschner (Vanderbilt University Medical Center, USA)
Wei Zheng (Purdue University, U.S.A.)

1) Bone as the Storage Site of Manganese (Mn) Exposure: Relationship to Mn Levels in Brain
   Wei Zheng, Wendy Jiang and Lan Hong (Purdue University, USA)
2) Decreased brain volumes in manganese-exposed welders
   Yangho Kim[1] and Yongmin Chang[2] ([1]Ulsan University Hospital, [2]Kyungpook National University College of Medicine, South Korea)
3) Manganese Neurotoxicity: Lessons From Worms to Neonates
   Michael Aschner, Nathalie L. Maitre, Judy L Aschner (Vanderbilt University Medical Center, USA)
4) ^{18}F-FP-(+)-DTBZ (^{18}F-AV-133) brain PET scan in chronic manganese intoxication and idiopathic Parkinson's disease
   Chin-Chang Huang, Yi-Hsin Weng, Kun-Ju Lin and Tzu-Chen Yen (Chang Gung Memorial Hospital and Chang Gung University, Taiwan)
5) Metal concentrations in cerebrospinal fluid and blood plasma from patients with neurodegenerative disorders
   Per M Roos (Karolinska Institutet, Sweden)
6) Biomarkers of iron status in welders exposed to manganese
   Dag G Ellingsen (National Institute of Occupational health, Norway)
7) X-ray fluorescence imaging and spectroscopy in trace element research: focus on mechanisms of Mn neurotoxicity.
   Yulia Pushkar, Gregory Robison, Wei Zheng (Purdue University, USA)

Symposium 8

Symposium 9
Trace Elements and Disease Burden
Chairperson
S.K.Roy
1)Disease Burden due to Trace elements Deficiency
S.K.Roy,K.jahan
2)Dietary risk exposure to heavy metals among poor and non-poor households in Dhaka city,Bangladesh
M.R.Islam,M.Jahiruddin,M.R.Oslam,M.A.Alim,M.Akhtaruzzaman,L.Bhattacharjee,M. A.Mannan
3)Zink Deficiency among Children below Five in India
Umesh Kapil
4)Trace element content of foods and estimated intake by poor and non poor househokds in Dhaka
M.R.Islam,M.Jahiruddin,M.R.Oslam,M.A.Alim,M.Akhtaruzzaman,L.Bhattacharjee,M.

A.Mannan

Symposium 10
Recent Advance in Menkes Disease
Chairperson
Stephan G Kaler (Eunice Kennedy Shriver National Institute of Child Health and Human Development, National Institutes of Health, U.S.A)
Haruo Shintaku (Department of Pediatrics, Osaka City University Graduate School of Medicine, Osaka Japan)

1) Recent Advances in Menkes disease and ATP7A-related disorders.
Stephan G Kaler (Eunice Kennedy Shriver National Institute of Child Health and Human Development, National Institutes of Health, U.S.A)
2) Standard value of urine HVA/VMA ratio in neonates to screen for Menkes disease
Mariko Yagi*, Noriko Kusunoki, Tomoko Lee, Ichiro Morioka, Yasuhiro Takeshima.
*Pediatrics, Nikoniko House Medical and Welfare Center, Kobe, Japan
Pediatrics, Kobe University Graduate School of Medicine, Kobe, Japan
3) PET imaging for copper bio-distribution and developing novel treatment for Menkes disease.
Takashi HAMAZAKI & Haruo SHINTAKU
Department of Pediatrics, Osaka City University Graduate School of Medicine, Osaka, Japan
4) Changes in body weight and height in survivors of Menkes disease
Yan-Hong Gu, Hiroko Kodama, Eoshin Ogawa, Kahoko Motoyama, Yasuhiro Sato, Mariko Yagi, Sayaka Yoshida

Symposium 11
Trace element problems in Developing countries : malnutrition, infection and immunity
Chair persons: Ingrid S Surono (BINUS University, Jakarta - Indonesia)
Rizky Abdulah (Universitas Padjadjaran, Bandung - Indonesia)
1) The Effect of addition of Zinc to Vitamin A Supplementation on serum, breast milk retinol and zinc level in maternal Postpartum With Cronic Energy Deficiency
Bambang Wirjatmadi
Airlangga University, Surabaya - Indonesia
2) Zinc and probiotic supplementation improve Zinc and Selenium status of Indonesian young children
Ingrid S. Surono
BINUS University, Jakarta-Indonesia

3) Effect of Iron-Folic Acid-Zinc Supplementation on Insulin-Like Growth Factor-1 Level of Anemic Pregnant Women
Widati Fatmaningrum
Airlangga University, Surabaya - Indonesia
4) The Effect of Zinc, Lysine and Vitamin A Supplementation to increase Cellular Immune Response of Pulmonary Tuberculosis Patients
Rita Ismawati
Airlangga University, Surabaya - Indonesia
5) The Effect of adding Zinc to Vitamin A on IGF-1, Bone Age and Linear Growth(H/A) in Stunted Children
Merryana Adriani
Airlangga University, Surabaya - Indonesia
6) Nutritional Status as Risk Factor for Iron Deficiency among Women at Reproductive Age
Sri Sumarmi
Airlangga University, Surabaya - Indonesia
7) Selenium content in daily consumed foods and estimation of the daily intake by populations living in Bandung City Indonesia as an early study for Selenium nutritional status in Indonesia
Rizky Abdulah
Universitas Padjadjaran – Bandung, Indonesia.

Symposium 12
Frontier of Neurometals
Chairperson: Atsushi Takeda (University of Shizuoka, Japan)
1) Involvement of intracellular Zn^{2+} signal in the dentate gyrus in cognition
Atsushi Takeda (University of Shizuoka, Japan)
2) Zinc chelation reduces traumatic brain injury (TBI)-induced hippocampal neurogenesis
Bo Young Choi[1], Jin Hee Kim[1], Min Sohn[2], Sang **Won Suh** (Hallym University, Chorea)
1. PBT2: A novel neuroprotective agent that enhances cognition in ageing
Paul A. Adlard (The University of Melbourne, Australia)
2. Roles of biological trace elements in neurodegeneration (ALS and Fahr's disease)
From molecular mechanisms to therapeutic strategies
Iso Hozumi (Gifu Pharmaceutical University, Japan)

Symposium 13
Update on the Health Benefits of Bioactive Trace Elements Not Generally Recognized as Essential
Chairperson:

Forrest H. Nielsen (Grand Forks Human Nutrition Research Center, USA)

1) Should bioactive trace elements not recognized as essential, but with beneficial health effects have intake recommendations
   Forrest H. Nielsen (Grand Forks Human Nutrition Research Center, USA)
2) Beneficial effects of boron for angiogenesis and bone health
   Alejandro Gorustovich (National Research Council (CONICET), Argentina)
3) Is chromium nutritionally or pharmacologically beneficial to glucose metabolism
   John B. Vincent (The University of Alabama, USA)
4) Nickel deprivation effects on reproduction, blood pressure control, and sensory function
   Katsuhiko Yokoi (Seitoku University, Japan)
5) Dietary silicon and connective tissue health
   Ravin Jugdaohsingh （MRC Human Nutrition, Cambridge, UK.）

Symposium 14
New Insights into the Role of Manganese in Health and Disease
Chairpersons
Michael Aschner (Vanderbilt University Medical Center, USA)
Wei Zheng (Purdue University, U.S.A.)

1）Bone as the Storage Site of Manganese (Mn) Exposure: Relationship to Mn Levels in Brain
   Wei Zheng, Wendy Jiang and Lan Hong (Purdue University, USA)
   2）Decreased brain volumes in manganese-exposed welders
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   7）X-ray fluorescence imaging and spectroscopy in trace element research: focus on mechanisms of Mn neurotoxicity.
   Yulia Pushkar, Gregory Robison, Wei Zheng (Purdue University, USA)

Symposium 15
Selenium in Nutrition and Health
Chairperson
Thomas Ong (São Paulo University, Brazil)

1) Brazilian nuts as a promising selenium-containing functional food: implications for health and disease
   Silvia Cozzolino (São Paulo University, Brazil)
2) Targeting the epigenome with selenium for cancer prevention
   Thomas Ong (São Paulo University, Brazil)
3) Selenium deficiency in children with intestinal dysfunction treated by parenteral and/or enteral nutrition in Japan
   Yuri Etani, Shinobu Ida, Kouji Kawamoto, Hiroyuki Yamada, Yasuko Shouji, Yukiko Nishimoto, Yuko Tazuke, Hisayoshi Kawahara (Osaka Medical Center and Research Institute for Maternal and Child Health, Japan)

Symposium 16
Review and prospect of radioactive materials before and after Fukushima nuclear accident in Japan. - environment, food and radiation exposure -
Chairpersons:
Hideo Sugiyama (Matsumoto University, Japan)
Satoshi Yoshida (National Institute of Radiological Sciences, Japan)

1) Environmental contamination conditions around the Fukushima cite and their temporal changes.
   Kimiaki Saito (Japan Atomic Energy Agency)
2) Behavior of radiocesium in ecosystems and its impact on products.
   Satoshi Yoshida (National Institute of Radiological Sciences, Japan)
3) Effect of Prussian blue for degradation of radiocesium content on mushroom cultivation.
   Hitoshi Neda (Forestry and Forest Products Research Institute, Japan)
4) Evaluation of the committed effective dose due to food intake for Japanese adults before Fukushima nuclear plant accident and ongoing dose evaluation for children in post-Fukushima era.
   Tomoko Ota (Japan Chemical Analysis Center, Japan)
5) Ingestion dose estimation caused by the Fukushima Nuclear disaster in Japan - during two years after 11 March 2011 -
   Ichiro Yamaguchi (National Institute of Public Health, Japan)