



The 8th International Symposium on Metallomics

ISM-8

July 11, 2022 (Mon) – July 14, 2022 (Thu)

*: Online presentation



July 11 (Mon), Room A (1F)

15:30 - 16:30

Plenary Lecture

(50 min Presentation + 10 min Discussion)

Chairperson: Yoshitsugu Shiro (Graduate School of Science, University of Hyogo, Japan)

PL

Au nanoparticle-based surface-enhanced Raman imaging reveals cystathionine-gamma-lyase-derived polysulfide overproduction in cancer-associated fibroblasts as a determinant of post-operative overall prognosis

Makoto Suematsu

Keio University School of Medicine



July 11 (Mon), Room B (2F)

16:30 -

Coffee Break



The 8th International Symposium on Metallomics

ISM-8

July 11, 2022 (Mon) – July 14, 2022 (Thu)

*: Online presentation



July 12 (Tue), Room A (1F)

8:45 -

Opening Remarks

Yasumitsu Ogra (Chair, ISM-8 Executive Committee/
Graduate School of Pharmaceutical Sciences, Chiba University.)

9:00 - 11:00

Specialty Session 1 (Keynote Lecture) (25 min Presentation + 5 min Discussion)

Chairpersons: Yoshiaki Furukawa (Department of Chemistry, Keio University, Japan)
Junpei Takano (Department of Agricultural Biology, Graduate School of Agriculture, Osaka
Metropolitan University, Japan)

SS1-1*/KL-1* Regulation of Zinc Homeostasis in Rice

9:00 - 9:30

Luqing Zheng, Shuai Mu, Shubao Hu, Binbin Du
Nanjing Agricultural University



(17 min Presentation + 3 min Discussion)

SS1-2

9:30 - 9:50

Boron Transport and Sensing in Arabidopsis

Junpei Takano
Department of Agricultural Biology, Graduate School of Agriculture, Osaka Metropolitan University

SS1-3

9:50 - 10:10

Alterations in renal cadmium distribution and phosphate reabsorption by the administration of cadmium-metallothionein in mice

Hitomi Fujishiro¹, Seiichiro Himeno²
¹*Faculty of Pharmaceutical Sciences, Tokushima Bunri University*, ²*School of Pharmacy, Showa University*

SS1-4

10:10 - 10:30

ZIP13-iron axis is a new regulatory mechanism for lipolysis

Ayako Fukunaka¹, Toru Kimura², Daisuke Saito^{1,3}, Toshiyuki Fukada⁴, Hiroataka Watada³, Yoshio Fujitani¹
¹*Institute for Molecular & Cellular Regulation, Gunma University*, ²*Kyorin University School of Medicine*, ³*Juntendo University Graduate School of Medicine*, ⁴*Tokushima Bunri University*

SS1-5

10:30 - 10:50

Sophisticated expression responses of ZNT1 and MT to expression alteration of ZIPs: Dissecting the mechanism underlying the control of zinc homeostasis

Taiho Kambe
Division of Integrated Life Science, Graduate School of Biostudies, Kyoto University

Session Closing

10:50 - 11:00

11:00 -

Coffee Break



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July 12 (Tue), Room A (1F)

11:10 - 11:40

Keynote Lecture 2

(25 min Presentation + 5 min Discussion)

Chairpersons: Taiho Kambe (Division of Integrated Life Science, Graduate School of Biostudies, Kyoto University, Japan)
Lara Massai (Department of Chemistry, University of Florence, Italy)

KL-2

Metal nanoparticle fate in single cell analysis. Consequence and impact for nanomedicine.

Ivan M. Kempson
Future Industries Institute, University of South Australia



11:40 - 12:16

Oral Session 1 "Cancer"

(10 min Presentation + 2 min Discussion)

Chairpersons: Taiho Kambe (Division of Integrated Life Science, Graduate School of Biostudies, Kyoto University, Japan)
Lara Massai (Department of Chemistry, University of Florence, Italy)

O1-1

11:40 - 11:52

Talc contributes to ovarian carcinogenesis via iron overload through multiple mechanisms

Yashiro Motooka¹, Misako Katabuchi^{1,2}, Shinya Toyokuni¹
¹Department of Pathology and Biological Responses, Nagoya University, ²Department of Obstetrics and Gynecology, Kumamoto University

O1-2*

11:52 - 12:04

Non-targeted metallomics through synchrotron radiation X-ray fluorescence with machine learning for cancer screening using blood samples

Yu-Feng Li
Institute of High Energy Physics, Chinese Academy of Sciences

O1-3

12:04 - 12:16

Role of ferroptosis in carcinogenesis and in physiological context

Shinya Toyokuni, Hao Zheng, Yingyi Kong, Yashiro Motooka, Shinya Akatsuka
Department of Pathology and Biological Responses, Nagoya University Graduate School of Medicine

12:20 - 13:10

Luncheon Seminar 1

Sponsored by: Agilent Technologies, Inc

LS-1

Life Science Applications and Practical Tips for Metallomic Studies Using Agilent Triple Quadrupole ICP-MS (ICP-QQQ)

Tetsuo Kubota
Agilent Technologies, Inc

14:30 - 15:50

Specialty Session 2

(17 min Presentation + 3 min Discussion)

Chairpersons: Shoji Nakayama (Japan Environment and Children's Study Programme Office, National Institute for Environmental Studies, Japan)

Yayoi Kobayashi (Health and Environmental Risk Division, National Institute for Environmental Studies, Japan)

SS2-1

14:30 - 14:50

Elemental analysis of biological samples in large-scale birth cohort study

Yayoi Kobayashi, Tomohiko Isobe, Miyuki Iwai-Shimada, Mai Takagi, Shoji F. Nakayama
Health and Environmental Risk Division, National Institute for Environmental Studies



July 12 (Tue), Room A (1F)

SS2-2

14:50 - 15:10

Tooth-based biomarkers of atypical metal regulation in Autism Spectrum Disorder

Christine Austin¹, Paul Curtin¹, Austen Curtin¹, Chris Gennings¹, Elena Baldwin¹, Dani Dumitriu^{1,2}, Abraham Reichenberg^{1,3,4}, Kristiina Tammimies^{5,6}, Sven Bölte^{5,6}, Raymond F. Palmer⁷, Manish Arora¹
¹Department of Environmental Medicine and Public Health, Icahn School of Medicine at Mount Sinai, ²Departments of Pediatrics and Psychiatry, Columbia University Irving Medical Center, NY, USA, ³Department of Psychiatry, Icahn School of Medicine at Mount Sinai, NY, USA, ⁴Seaver Autism Center for Research and Treatment, Icahn School of Medicine at Mount Sinai, NY, USA, ⁵Center of Neurodevelopmental Disorders, Division of Neuropsychiatry, Department of Women's and Children's Health, Karolinska Institutet, Stockholm, Sweden, ⁶Child and Adolescent Psychiatry, Center for Psychiatry Research, Stockholm County Council, Stockholm, Sweden, ⁷Family and Community Medicine, School of Medicine, University of Texas Health Sciences Center, TX, USA

SS2-3

15:10 - 15:30

Excessive oral cadmium exposure through rice consumption and renal tubular dysfunction in farmers in Northern Japan revealed by health examination and hospital-based screening for cadmium nephropathy

Hyogo Horiguchi
 Department of Hygiene, Kitasato University School of Medicine

SS2-4*

15:30 - 15:50

Human Biomonitoring in Germany & Europe – science and policy for a healthy future

Aline Murawski, Till Weber, Marike Kolossa-Gehring
 German Environment Agency (UBA), Section Toxicology, Health-related Environmental Monitoring

15:50 -

Coffee Break

16:10 - 18:10

Specialty Session 3

(25 min Presentation + 5 min Discussion)

Chairpersons: Emiko Harada (Department of Biological Resources Management, School of Environmental Science, The University of Shiga Prefecture, Japan)

Akiko Hokura (Department of Applied Chemistry, Tokyo Denki University, Japan)

SS3-1

16:10 - 16:40

High-Mg Calcite Nanoparticles Within a Low-Mg Calcite Matrix – a Widespread Strategy in Biomineralization

Boaz Pokroy
 Department of Materials Science and Engineering, Technion Israel Institute of Technology

SS3-2

16:40 - 17:10

Organic molecules related to the biomineralization of mollusks and bacteria

Michio Suzuki
 Department of Applied Biological Chemistry, Graduate School of Agricultural and Life Sciences, the University of Tokyo

SS3-3

17:10 - 17:40

Nanoscale imaging of intact biological specimens in water using scanning electron assisted dielectric microscopy

Toshihiko Ogura, Tomoko Okada
 Health and Medical Research Institute, National Institute of Advanced Industrial Science and Technology (AIST)

SS3-4

17:40 - 18:10

Biogenic manganese oxides (BMO) — an introduction to the recent research development

Kazuhiro Toyoda^{1,2}
¹Faculty of Environmental Earth Science, Hokkaido University, Sapporo, Japan, ²Graduate School of Environmental Science, Hokkaido University, Sapporo, Japan



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ISM-8

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July 12 (Tue), Room B (2F)

9:00 - 9:30

Keynote Lecture 3

(25 min Presentation + 5 min Discussion)

Chairpersons: Takaaki Itai (Department of Earth and Planetary Science, The University of Tokyo, Japan)

Darryl Neil Johnson (Materials Characterisation and Fabrication Platform, Dept. Chemical Engineering, The University of Melbourne, Australia)

KL-3*

NEW ADVANCES FOR THE CHARACTERIZATION OF FUNCTIONALIZED METALLIC NANOMATERIALS AIMING AT BIOANALYTICAL APPLICATIONS

Jorge Ruiz Encinar, Borja Moreira-Alvarez, Ana Fuentes Cervantes, Jose M Costa Fernandez
Department of Physical and Analytical Chemistry, University of Oviedo



9:30 - 10:42

Oral Session 2 "Analytical Technique-1"

(10 min Presentation + 2 min Discussion)

Chairpersons: Takaaki Itai (Department of Earth and Planetary Science, The University of Tokyo, Japan)

Darryl Neil Johnson (Materials Characterisation and Fabrication Platform, Dept. Chemical Engineering, The University of Melbourne, Australia)

O2-1*

9:30 - 9:42

Investigation of Metal-Protein-Interactions Using a Complementary Analysis Setup Comprising HPLC-ESI-TIMS-MS and HPLC-ICP-MS

Catharina Erbacher, Philipp Strohmidel, Michael Sperling, Uwe Karst
University of Münster, Institute of Inorganic and Analytical Chemistry

O2-2

9:42 - 9:54

Development of a hybrid analytical method for biometals combining elemental imaging and local speciation

Makiko Iwase, Yasunori Fukumoto, Yu-ki Tanaka, Noriyuki Suzuki, Yasumitsu Ogra
Graduate School of Pharmaceutical Sciences, Chiba University

O2-3

9:54 - 10:06

Stable isotope analysis of mercury-binding proteins in animal samples

Silvia Queipo-Abad¹, Warren T. Corns², David Amouroux¹, Zoyne Pedrero-Zayas¹

¹Université de Pau et des Pays de l'Adour, E2S UPPA, CNRS, IPREM, Institut des Sciences Analytiques et de Physico-chimie pour l'Environnement et les matériaux, Pau, France, ²PS Analytical, Arthur House, Crayfields Industrial Estate, Main Road, Orpington, Kent BR5 3HP, UK

O2-4

10:06 - 10:18

LA-TOF-ICP-MS – A powerful tool to further examine and elucidate the role that metals play in living systems

Lukas Schlatt, Phil Shaw
Nu Instruments

O2-5

10:18 - 10:30

The imaging of stable Sr isotopes and radioactive ⁹⁰Sr by using laser ablation ICP-MS/MS

Kayo Yanagisawa^{1,2}, Makoto Furukawa^{3,4}, Takafumi Hirata⁵, Yoshitaka Takagai^{3,6}

¹Graduate School of Symbiotic Systems Science and Technology, Fukushima University, ²Collaborative Laboratories for Advanced Decommissioning Science, Japan Atomic Energy Agency, ³Faculty of Symbiotic Systems Science, Fukushima University, ⁴PerkinElmer Japan Co., Ltd., ⁵Geochemical Research Center, Graduate School of Science, the University of Tokyo, ⁶Institute of Environmental Radioactivity, Fukushima University



July 12 (Tue), Room B (2F)

02-6

10:30 - 10:42

Hybrid Imaging Analyses of Biomolecules: From Biological Tissues to Molecules and Metals

Tadayuki Ogawa¹, Eisei Tanaka², Tomonari Umemura³, Shino Takeda-Homma⁴, Takafumi Hirata²

¹Research Center for Advanced Medical Science, Dokkyo Medical University, ²Geochemical Research Center, The University of Tokyo,

³School of Life Sciences, Tokyo University of Pharmacy and Life Sciences, ⁴National Institute of Radiological Sciences, National Institutes for Quantum Science and Technology

10:42 -

Coffee Break

11:00 - 11:30

Keynote Lecture 4

(25 min Presentation + 5 min Discussion)

Chairpersons: Yanbei Zhu (National Institute of Advanced Industrial Science and Technology, Japan)

Laurent Ouerdane (IPREM UMR5254 UPPA/CNRS, Pau University, France)

KL-4*

Molybdenum sulfide nanomaterials transform and incorporate into molybdenum enzymes and affect their activities *in vivo*

Mingjing Cao, Chunying Chen

CAS Key Laboratory for Biomedical Effects of Nanomaterials and Nanosafety and CAS Center for Excellence in Nanoscience, National Center for Nanoscience and Technology of China, Beijing 100190, P. R. China.



11:30 - 12:06

Oral Session 3 "Analytical Technique-2"

(10 min Presentation + 2 min Discussion)

Chairpersons: Yanbei Zhu (National Institute of Advanced Industrial Science and Technology, Japan)

Laurent Ouerdane (IPREM UMR5254 UPPA/CNRS, Pau University, France)

03-1*

11:30 - 11:42

Inductively Coupled Plasma Tandem Mass Spectrometry – versatile tool for investigation of superparamagnetic nanoparticles in proteinaceous media

Jacek Maria Sikorski, Agnieszka Kamińska, Magdalena Matczuk, Anna Wróblewska, Lena Ruzik, Maciej Jarosz
Faculty of Chemistry, Warsaw University of Technology

03-2

11:42 - 11:54

Simultaneous imaging analyses of elements and molecules using laser ablation coupled with atmospheric pressure plasma-based mass spectrometry

Hui Hsin Khoo¹, Haruo Shimada², Hidekazu Miyahara¹, Takafumi Hirata¹

¹Geochemical Research Center, School of Science, The University of Tokyo, ²BioChromato, Inc.

03-3

11:54 - 12:06

Single-cell analysis for measuring intracellular RuBisCO using a cell puncture type immunosensor

Atsushi Shoji¹, Chika Morimoto², Yukiko Moriiwa¹, Kazuhiro Morioka¹, Hidetoshi Kumata², Akio Yanagida¹, Tomonari Umemura²

¹Department of Biomedical analysis, School of Pharmacy, Tokyo University of Pharmacy and Life Sciences, ²Department of Molecular Life Sciences, School of Life Sciences, Tokyo University of Pharmacy and Life Sciences



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July 12 (Tue), Room B (2F)

12:20 - 13:10

Luncheon Seminar 2

Sponsored by: Japan Laser Corp.

LS-2

How to Design a Laser Ablation System for Metallomic Bioimaging

Rob Hutchinson¹, David Douglas¹, Ciaran O'Connor², Yohei Kamata³, Chihiro Kawada³

¹Elemental Scientific Lasers, 8 Avro Court, Ermine Business Park, Huntingdon, Cambridgeshire, PE29 6XS, United Kingdom. rhutchinson@icpms.com, ²Elemental Scientific Lasers Inc. 685 Old Buffalo Trail, Bozeman, MT 59715, United States., ³Japan Laser Corp., 2-14-1, Nishi-Waseda, Shinjuku-ku, Tokyo, 169-0051 Japan

14:30 - 15:00

Keynote Lecture 5

(25 min Presentation + 5 min Discussion)

Chairpersons: Shinya Toyokuni (Department of Pathology and Biological Responses, Nagoya University Graduate School of Medicine, Japan)

Hua Naranmandura (Zhejiang University, China)

KL-5

Molecular magnetic resonance imaging and metallomics

Peter Caravan^{1,2}, Veronica Clavijo Jordan^{1,2}, Mariane Le Fur^{1,2}

¹Institute for Innovation in Imaging, Massachusetts General Hospital, ²Department of Radiology, Harvard Medical School



15:00 - 16:12

Oral Session 4 "Diagnosis & Therapeutics"

(10 min Presentation + 2 min Discussion)

Chairpersons: Shinya Toyokuni (Department of Pathology and Biological Responses, Nagoya University Graduate School of Medicine, Japan)

Hua Naranmandura (Zhejiang University, China)

O4-1

15:00 - 15:12

Development of heme-selective biomolecule-labeling probes for omics analysis and tissue imaging

Ryo Kakiuchi¹, Tasuku Hirayama¹, Shohei Tsuji¹, Masamitsu Shimazawa¹, Tomonori Tamura², Itaru Hamachi², Mieko Tsuji¹, Hideko Nagasawa¹

¹Gifu Pharmaceutical University, ²Graduate School of Engineering, Kyoto University

O4-2*

15:12 - 15:24

Pharmacokinetics, distribution, and speciation analysis of gadoterate, gadoteridol, gadobutrol and gadobenate in rats

Mariane Le Fur¹, Brianna Moon¹, Samantha Zygmunt¹, Avery Boice¹, Iris Zhou¹, Nicholas Rotile¹, Pamela Pantazopoulos¹, Andrei Astashkin², Brian Jackson³, Peter Caravan¹

¹The Athinoula A. Martinos Center for Biomedical Imaging, The Institute for Innovation in Imaging, Massachusetts General Hospital and Harvard Medical School, 149 Thirteenth Street, Charlestown, MA 02129, USA, ²Department of Chemistry and Biochemistry, University of Arizona, Tucson, AZ 85721, USA, ³Trace Element Analysis Laboratory, Dartmouth College, Hanover, NH 03755, USA

O4-3*

15:24 - 15:36

Biomimetic preparation of chitosan/calcium carbonate composite core-shell microparticles for drug carrier

Satoshi Tanimoto, Izuka Nishii, Shokyoku Kanaoka

Department of Materials Science, The University of Shiga Prefecture



July 12 (Tue), Room B (2F)

04-4

15:36 - 15:48

***in vitro* / *in vivo* activity of fluoromethyl group-introduced antitumor-active dinuclear platinum(II) complex**

Masako Uemura¹, Keiichi Hiramoto¹, Hiroki Yoneyama², Yoshihide USAMI², Shinya Harusawa², Seiji Komeda¹

¹Faculty of Pharmaceutical Sciences, Suzuka University of Medical Science, ²Faculty of Pharmaceutical Sciences, Osaka Medical and Pharmaceutical University

04-5*

15:48 - 16:00

Fine-tuning of multitarget anticancer metallodendrimers cellular incorporation

Andrei Pasca^{1,2}, Dylan Giffard³, Cristian Pop⁴, Joaquin Barroso-Flores⁵, Eugen Gurzau⁴, Gregory S. Smith³,

Catalin Ioan Vlad^{1,2}, Bhaskar Saha⁶, Eva Fischer-Fodor¹, Patriciu Achimas-Cadariu^{1,2}

¹The Oncology Institute "Prof. Dr. Ion Chiricuta", Cluj Napoca, Romania, ²"Iuliu Hatieganu" University of Medicine and Pharmacy, Cluj-Napoca Romania, ³University of Cape Town, Cape Town, South Africa, ⁴Environmental Health Center, Cluj Napoca, Romania, ⁵National Autonomous University, Ciudad de México, Mexico, ⁶National Centre for Cell Science, Ganeshkhind, Pune, India

04-6

16:00 - 16:12

Tetrazolato-bridged dinuclear Pt(II) complexes and their potential applications in cancer chemotherapy

Seiji Komeda, Masako Uemura, Keiichi Hiramoto

Faculty of Pharmaceutical Sciences, Suzuka University of Medical Science

16:12 -

Coffee Break

16:30 - 17:06

Oral Session 5 "Nano Science & Nano Toxicology"

(10 min Presentation + 2 min Discussion)

Chairpersons: Yoshinari Suzuki (National Institute of Health Sciences, Japan)

Yu-Feng Li (Institute of High Energy Physics, Chinese Academy of Sciences, China)

05-1

16:30 - 16:42

Involvement of ER stress response/autophagy in silver nanoparticles exposure -induced cell death in SH-SY5Y cells

Takamitsu Miyayama, Masato Matsuoka

Division of Environmental and Occupational Medicine, Department of Hygiene and Public Health, School of Medicine, Tokyo Women's Medical University

05-2

16:42 - 16:54

Antioxidant supplementation ameliorates the liver steatosis caused by titanium dioxide nanoparticles

Daisuke Matsumaru¹, Yuki Takeshita¹, Ryo Koike¹, Keishi Ishida¹, Yu-ki Tanaka², Yasumitsu Ogra²,

Tsuyoshi Nakanishi¹

¹Laboratory of Hygienic Chemistry and Molecular Toxicology, Gifu Pharmaceutical University, ²Graduate School of Pharmaceutical Sciences, Chiba University

05-3*

16:54 - 17:06

The formation of cisplatin targeted delivery systems based on gold nanoparticles – the synthetic and analytical challenges

Anna M. Wróblewska, Jacek Sikorski, Magdalena Matczuk

Chair of Analytical Chemistry, Faculty of Chemistry, Warsaw University of Technology, Poland

05-4

Withdrawal

17:06 -

Coffee Break



July 12 (Tue), Room B (2F)

17:20 - 18:20

Oral Session 6 "Health Science" (10 min Presentation + 2 min Discussion)

Chairpersons: Masahiro Kawahara (Department of Bio-Analytical Chemistry, Faculty of Pharmacy, Research Institute of Pharmaceutical Sciences, Musashino University, Japan)

Masato Asanuma (Department of Medical Neurobiology, Okayama University Graduate School of Medicine, Dentistry and Pharmaceutical Sciences, Japan)

O6-1*

17:20 - 17:32

Metal-coding assisted serological multi-omics study to decipher the pathological mechanisms and biomarkers of COVID-19

Ying Zhou¹, Shuofeng Yuan², Hongyan Li¹, Kwok-Yung Yuen², Jasper Fuk-Woo Chan², Hongzhe Sun¹

¹Department of Chemistry, The university of Hong Kong, ²Department of Microbiology, The university of Hong Kong

O6-2*

17:32 - 17:44

Gold(I) complexes: a promising class of SARS-CoV-2 M^{pro} inhibitors

Lara Massai¹, Deborah Grifagni², Francesca Cantini^{1,2,3}, Vito Calderone^{1,2,3}, Lucia Banci^{1,2,3}, Luigi Messori¹

¹Department of Chemistry, University of Florence, via della Lastruccia 3-13, 50019, Sesto Fiorentino, Firenze, Italy, ²Center of Magnetic Resonance, University of Florence, via Luigi Sacconi 6, 50019, Sesto Fiorentino, Firenze, Italy, ³Consorzio Interuniversitario Risonanze Magnetiche MetalloProteine (CIRMMMP), via Sacconi 6, Sesto Fiorentino, 50019, Italy

O6-3

17:44 - 17:56

Coordination properties of mycobacterial SmtB/BigR4 α5 domain in zinc and nickel systems; the structure of dimeric BigR4 protein

Sławomir Potocki¹, Anna Rola¹, Karolina Mojsa², Anna Pyra¹, Damian Trojanowski², Joanna Hołowka², Robert Wieczorek¹, Henryk Kozłowski³, Paulina Potok¹, Artur Krężel², Jolanta Zakrzewska-Czerwińska², Elżbieta Gumienna-Kontecka¹

¹Faculty of Chemistry, University of Wrocław, ²Faculty of Biotechnology, University of Wrocław, ³Institute of Health Sciences, University of Opole

O6-4*

17:56 - 18:08

LA-ICP-MS Bioimaging of Metal Ions in the Brain of Parkinson's Disease Model Mouse Undergoing Manganese-enhanced MRI

Yao Zhao¹, Wei Chen^{2,3}, Fuyi Wang^{1,3}, Hao Lei^{2,3}

¹Institute of Chemistry, Chinese Academy of Sciences, ²Innovation Academy for Precision Measurement Science and Technology, Chinese Academy of Sciences, ³University of Chinese Academy of Sciences

O6-5*

18:08 - 18:20

METALLOMIC – METABOLOMICS APPROACHES TO STUDY THE EFFECT OF METAL POLLUTION ON AGING AND ASSOCIATED NEURODEGENERATIVE PATHOLOGIES

Jose-Luis Gomez-Ariza^{1,2}

¹Department of Chemistry, Huelva University, ²Research Center on Natural Resources, Health and the Environment (RENSMA)



July 13 (Wed), Room A (1F)

8:45 - 9:15

Keynote Lecture 6 (25 min Presentation + 5 min Discussion)

Chairpersons: Shigetoshi Aono (Exploratory Research Center on Life and Living Systems, National Institutes of Natural Sciences, Japan)

Ayako Fukunaka (Institute for Molecular & Cellular Regulation, Gunma University, Japan)

KL-6

Metal complexes in biological environments: a new frontier in inorganic chemistry

Focuses on Mn-SOD mimics: from design to evaluation in cells

Clotilde Policar¹, Nicolas Delsuc¹, H el ene Bertrand¹, Emilie Mathieu¹, Gabrielle Schanne¹, Martha Zoumpoulaki¹, Hugues Preud'homme², Ryzsard Lobinski², Joelle Vinh³, Giovanni Chiapetta³

¹Laboratoire des biomol cules (LBM), D partement de chimie,  cole normale sup rieure, PSL University, Sorbonne Universit , CNRS, 75005 Paris, France, ²IPREM-UMR5254, E2S UPPA, CNRS, Technop le Helioparc, 64053 Pau Cedex 9 (France), ³SMBP ESPCI Paris, PSL University, UMR 8249 CNRS



9:15 - 10:27

Oral Session 7 "Protein & Enzyme" (10 min Presentation + 2 min Discussion)

Chairpersons: Shigetoshi Aono (Exploratory Research Center on Life and Living Systems, National Institutes of Natural Sciences, Japan)

Ayako Fukunaka (Institute for Molecular & Cellular Regulation, Gunma University, Japan)

07-1*

9:15 - 9:27

NtZIP5 in the Zn and Cd homeostasis

Ma gorzata Palusi ska, Karolina Ma li nska-Gromadka, Anna Barabasz, Danuta Maria Antosiewicz
Department of Plant Metal Homeostasis, Faculty of Biology, University of Warsaw, Poland

07-2

9:27 - 9:39

TEM-1 beta-lactamase is not a metalloenzyme but metal ion binding to the histidine-pairs exposed at the protein surface may count

Zeyad H. A. Nafae^{1,2}, Eva Hunyadi-Gulyas³, Bela Gyurcsik¹

¹Department of Inorganic and Analytical Chemistry, University of Szeged, Dom ter 7, H-6720 Szeged, Hungary, ²College of Pharmacy, University of Babylon, Hillah 51001 Babel, Iraq, ³Laboratory of Proteomics Research, Biological Research Centre, Temesvari krt. 62, H-6726 Szeged, Hungary

07-3

9:39 - 9:51

Identification of bacteriostatic agents by inhibiting the iron uptake protein, FbpA, from a marine-borne Gram-negative bacterium, *Vibrio metschnikovii*

Peng Lu, Miaomiao Sui, Mimin Zhang, Mengyao Wang, Takehiro Kamiya, Ken Okamoto, Hideaki Itoh, Suguru Okuda, Michio Suzuki, Tomiko Asakura, Toru Fujiwara, Koji Nagata
Department of Applied Biological Chemistry, Graduate School of Agricultural and Life Sciences, The University of Tokyo

07-4

9:51 - 10:03

Structural basis of CO biosynthesis for the assembly of the active site in NiFe-hydrogenase

Norifumi Muraki, Shigetoshi Aono

Exploratory Research Center on Life and Living Systems, National Institutes of Natural Sciences

07-5

10:03 - 10:15

Significance of selenoprotein P expression on selenium-homeostasis in hepatocytes

Moeka Natori, Kotoko Arisawa, Takashi Toyama, Takayuki Hoshi, Yoshiro Saito
Faculty of pharmaceutical sciences, Tohoku University

07-6

10:15 - 10:27

Bacterial Cu/Zn-superoxide dismutase with a novel fold

Yoshiaki Furukawa, Shuhei Narikiyo, Masato Akutsu, Atsuko Shintani
Department of Chemistry, Keio University



ISM-8

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Coffee Break

12:00 - 12:50

Luncheon Seminar 3

Sponsored by: Thermo Fisher Scientific K.K.

LS-3

Simultaneous Imagings of Elements and Biomolecules using Mass Spectrometry coupled with Laser Ablation in Liquid Technique

Takafumi Hirata, Hui Hsin Khoo, Menghao Yang
Geochemical Research Center, The Univ. Tokyo



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July 13 (Wed), Room B (2F)

8:45 - 9:15

Keynote Lecture 7 (25 min Presentation + 5 min Discussion)

Chairpersons: Michio Suzuki (Department of Applied Biological Chemistry, Graduate School of Agricultural and Life Sciences, the University of Tokyo, Japan)

Zoyne Pedrero Zayas (CNRS/ IPREM, France)

KL-7

Mercury pollution problem in Russia: current trends and health outcomes

Anatoly Skalny^{1,2,3}

¹Sechenov University, ²RUDN University, ³Orenburg State University



9:15 - 10:27

Oral Session 8 "Environmental Science"

(10 min Presentation + 2 min Discussion)

Chairpersons: Michio Suzuki (Department of Applied Biological Chemistry, Graduate School of Agricultural and Life Sciences, the University of Tokyo, Japan)

Zoyne Pedrero Zayas (CNRS/ IPREM, France)

O8-1

9:15 - 9:27

Novel pathway for assimilation of trimethylselenonium in soil microorganisms

Masao Inoue^{1,2}, Anna Ochi¹, Chinatsu Terabe¹, Mai Tanaka¹, Riku Aono¹, Soichi Sato³, Yasumitsu Ogra⁴, Hisaaki Mihara¹

¹College of Life Sciences, Ritsumeikan University, ²R-GIRO, Ritsumeikan University, ³Faculty of Science and Engineering, Toyo University, ⁴Graduate School of Pharmaceutical Sciences, Chiba University

O8-2

9:27 - 9:39

Advanced metallophore characterization by hyphenated techniques in the soil-microorganisms-plants environmental systems

Laurent Ouerdane, Katarzyna Kinska, Alex Goupil, Luluil Maknun, Ryszard Lobinski

Institut des Sciences Analytiques et de Physico-Chimie pour l'Environnement et les Matériaux (IPREM), UMR 5254 CNRS-UPPA-E2S, Pau, France

O8-3

9:39 - 9:51

Effect of organics on the stabilization and crystallization of amorphous calcium carbonate (ACC) in 3D printable pastes

Hadar Shaked¹, Iryna Polishchuk¹, Alina Nagel², Yehonadav Bekenstein², Boaz Pokroy¹

¹Bio-Inspired Surface Engineering and Biomineralization Lab, Department of Materials Science and Engineering, Technion - Israel Institute of Technology, ²Quantum Materials for Energy Applications, Department of Materials Science and Engineering, Technion - Israel Institute of Technology

O8-4

9:51 - 10:03

Biosorption mechanism in the selective recovery of precious metals

Ayumi Minoda¹, Shin-ichi Miyashita², Toshihiko Ogura³, Takahiro Kondo⁴, Yoshio Takahashi⁵

¹Faculty of Life and Environmental Sciences, University of Tsukuba, ²National Metrology Institute of Japan, National Institute of Advanced Industrial Science and Technology, ³Health and Medical Research Institute, National Institute of Advanced Industrial Science and Technology, ⁴Faculty of Pure and Applied Sciences, University of Tsukuba, ⁵Department of Earth and Planetary Science, the University of Tokyo

O8-5

10:03 - 10:15

Learning from intracrystalline proteins in biogenic minerals how to tune various physical properties of synthetic crystals

Iryna Polishchuk, Nuphar Bianco-Stein, Boaz Pokroy

Technion - Israel Institute of Technology, Department of Materials Science and Engineering



ISM-8

The 8th International Symposium on Metallomics

July 11, 2022 (Mon) – July 14, 2022 (Thu)

*: Online presentation



July 13 (Wed), Room B (2F)

O8-6

10:15 - 10:27

Variation of trace element level in diatom cells from Japanese eutrophic lakes using synchrotron radiation microbeam X-ray fluorescence spectrometry

Takaaki Itai, Kazusa Tamura, Yoshio Takahashi

Department of Earth and Planetary Science, The University of Tokyo

10:27 -

Coffee Break

12:00 - 12:50

Luncheon Seminar 4

Sponsored by: PerkinElmer Japan Co., Ltd.

LS-4

Continuing Evolution of ICP-MS Contributes to Metallomics Research

Kyoko Kobayashi

Application Research Lab / Inorganic, Applied Market, PerkinElmer Japan Co., Ltd.



July 14 (Thu), Room A (1F)

8:45 - 9:15

Keynote Lecture 8 (25 min Presentation + 5 min Discussion)

Chairpersons: Yoshiro Saito (Graduate School of Pharmaceutical Sciences, Tohoku University, Japan)

Tejo Prakash Nagaraja (School of Energy and Environment, Thapar Institute of Engineering and Technology, Patiala, India)

KL-8* New Strategy for Overcoming ATO-resistant APL

Hua Naranmandura
Zhejiang University



9:15 - 10:15

Oral Session 9 "Metalloid-1" (10 min Presentation + 2 min Discussion)

Chairpersons: Yoshiro Saito (Graduate School of Pharmaceutical Sciences, Tohoku University, Japan)

Tejo Prakash Nagaraja (School of Energy and Environment, Thapar Institute of Engineering and Technology, Patiala, India)

09-1 New insights on mercury detoxification in marine animals: Role of selenoneine and isotopic tracking of HgSe nanoparticles formation

9:15 - 9:27

Zoyne Pedrero Zayas¹, Khouloud El Hanafi¹, Silvia Queipo-Abad¹, Laurent Ouerdane¹, Claudia Marchán Moreno¹, Maité Bueno¹, Florence Pannier¹, Warren T. Corns², Yves Cherel³, Paco Bustamante^{4,5}, David Amouroux¹
¹Université de Pau et des Pays de l'Adour, E2S UPPA, CNRS, IPREM, Institut des Sciences Analytiques et de Physico-Chimie pour l'Environnement et les Matériaux, 64000 Pau, France, ²PS Analytical, Orpington, Kent BR5 3HP, U.K., ³Centre d'Etudes Biologiques de Chizé, UMR 7372 CNRS-La Rochelle Université, 79360 Villiers-en-Bois, France, ⁴Littoral Environnement et Sociétés (LIENSs), UMR 7266 CNRS-La Rochelle Université, 17000 La Rochelle, France, ⁵Institut Universitaire de France (IUF), 75005 Paris, France

09-2 Synchrotron μ -XRF imaging of arsenic in frozen-hydrated sections of a root of *Pteris vittata*

9:27 - 9:39

Teruhiko Kashiwabara¹, Nobuyuki Kitajima³, Ryoko Onuma², Naoki Fukuda², Satoshi Endo², Yasuko Terada⁶, Tomoko Abe⁵, Akiko Hokura⁴, Izumi Nakai²
¹Japan Agency for Marine-Earth Science and Technology, ²Tokyo University of Science, ³Fujita Co., ⁴Tokyo Denki University, ⁵RIKEN, ⁶JASRI SPring-8

09-3 Characterization of pentaheme cytochrome c selenoprotein, a novel polysulfide/selenite reductase, from *Geobacter sulfurreducens*

9:39 - 9:51

Hisaaki Mihara¹, Takuya Yoshizawa¹, Yukiko Izu¹, Miki Jinno¹, Masao Inoue^{1,2}, Riku Aono¹, Ryuta Tobe¹, Hiroyoshi Matsumura¹
¹College of Life Sciences, Ritsumeikan University, ²R-GIRO, Ritsumeikan University

09-4* Selenium and Seleniferous Crops of Punjab, India: A research account on quantification, speciation and bioactivity

9:51 - 10:03

Tejo Prakash Nagaraja
Centre of Excellence in Emerging Materials, School of Energy and Environment, Thapar Institute of Engineering and Technology, Patiala, India



July 14 (Thu), Room A (1F)

09-5*

10:03 - 10:15

The Role of Selenium on Shaping Mice Brain and Testicular Metabolomes and Metallomes. Microbial-Produced Metabolites and the Crosstalk with Gut Microbiota

Belén Callejón-Leblic¹, Sara Ramírez-Acosta¹, Marta Selma-Royo², José Luis Gómez-Ariza¹, Nieves Abril³, MCarmen Collado², TAMARA GARCÍA-BARRERA¹

¹Research Center for Natural Resources, Health and the Environment (RENSMA). Department of Chemistry, Faculty of Experimental Sciences, University of Huelva, Campus El Carmen, Fuerzas Armadas Ave., 21007, Huelva, Spain, ²Institute of Agrochemistry and Food Technology (ATA-CSIC), Food Biotechnology, Agustín Escardino 7. 46980 Paterna, Valencia, Spain., ³Department of Biochemistry and Molecular Biology, University of Córdoba, Campus de Rabanales, Edificio Severo Ochoa, E-14071, Córdoba, Spain

10:15 -

Coffee Break

10:30 - 11:18

Oral Session 10 "Metalloid-2" (10 min Presentation + 2 min Discussion)

Chairperson: Hisaaki Mihara (College of Life Sciences, Ritsumeikan University, Japan)

010-1

10:30 - 10:42

A multi-technique platform for the quantification and identification of Selenoneine in biological matrices

Claudia Marchan-Moreno¹, Christian L. Ward-Deitrich², Jasmina Allen³, Maite Bueno¹, David Amouroux¹, Zoyne Pedrero-Zayas¹, Heidi Goenaga-Infante³, Warren T. Corns³

¹Université de Pau et des Pays de l'Adour, E2S UPPA, CNRS, IPREM, Institut des Sciences Analytiques et de Physico-chimie pour l'Environnement et les matériaux, Pau, France., ²LGC Limited, Queens Road, Teddington, Middlesex TW11 0LY, UK, ³PS Analytical, Arthur House, Crayfields Industrial Estate, Main Road, Orpington, Kent BR5 3HP, UK

010-2*

10:42 - 10:54

Chemical Modeling of the Catalytic Cycle of Glutathione Peroxidase Utilizing Selenocysteine Selenenic Acids Stabilized by a Molecular Cradle

Kei Goto, Ryosuke Masuda, Ryutaro Kimura, Takafumi Karasaki, Shohei Sase, Satoru Kuwano
Department of Chemistry, School of Science, Tokyo Institute of Technology

010-3

10:54 - 11:06

Detection of peptidyl-prolyl cis-trans isomerase A as a selenotrisulfide reactive protein in rat brain

Sakura Yoshida¹, Akinori Yamamoto¹, Tae Kuroiwa¹, Miku Hoshikawa¹, Hiroshi Masumoto², Takeshi Fuchigami³, Akira Toriba¹, Morio Nakayama¹, Mamoru Haratake⁴

¹Graduate School of Biomedical Sciences, Nagasaki University, ²Biomedical Research Support Center, School of Medicine, Nagasaki University, ³Graduate School of Medical Sciences, Kanazawa University, ⁴Faculty of Pharmaceutical Sciences, Sojo University

010-4

11:06 - 11:18

A significant role of selenoprotein P as a regulator of pancreatic β cell function-disorders related to its deficiency and excess

Yoshiro SAITO
Graduate School of Pharmaceutical Sciences, Tohoku University

11:35 -

Closing & Handover Ceremony



July 14 (Thu), Room B (2F)

8:45 - 11:30

Specialty Session 4

(25 min Presentation + 5 min Discussion)

Chairperson: Kazuya Kikuchi (Graduate School of Engineering, Osaka University, Japan)

SS4-1*

8:45 - 9:15

Single cell ICP-MS to study the uptake of trace elements and the biosynthesis of nanoparticles by microorganisms

Maria Montes-Bayon^{1,2}, Roberto Alvarez-Fernández³, Paula García-Cancela^{1,2}, Beatriz Gómez-Gómez³, Yolanda Madrid-Albarran³, Jörg Bettmer^{1,2}

¹Department of Physical and Analytical Chemistry, University of Oviedo, 33006 Oviedo, Spain, ²Instituto de Investigación Sanitaria del Principado de Asturias (ISPA), ³Department of Analytical Chemistry, Complutense University of Madrid, 28040 Madrid, Spain

SS4-2*

9:15 - 9:45

Microfluidic chip combined with inductively coupled plasma mass spectrometry for single cell analysis

Bin Hu

Department of Chemistry, Wuhan University

SS4-3*

9:45 - 10:15

New tools for illuminating extracellular metallobiology as potential disease biomarkers

Marie C Heffern

Department of Chemistry, University of California, Davis

Coffee Break

10:15 - 10:30

SS4-4*

10:30 - 11:00

Metalloproteomics for mapping metals to proteins by in cells: uncovering molecular target of chromium(III)

Hongzhe Sun¹, Haibo Wang¹, Ligang Hu², Ying Zhou¹, Xiaohan Xu¹, Guibin Jiang², Hongyan Li¹

¹Department of Chemistry, The University of Hong Kong, Hong Kong, P.R. China, ²State Key Laboratory of Environmental Chemistry and Ecotoxicology, Research Center for Eco-environmental Sciences, the Chinese Academy of Sciences, Beijing, P.R. China

SS4-5*

11:00 - 11:30

Design of organogold complexes for biomedical applications: from non-covalent interactions to metal-templated catalysis in cells

Angela Casini

Department of Chemistry, Technical University of Munich



Poster Presentation July 12 (Tue)- July 14 (Thu), Room C (2F)

On-site Poster Presentation Core Time

Odd Number: 13:20 - 14:20, July 12 (Tue), Room C (2F)

Even Number: 10:50 - 11:50, July 13 (Wed), Room C (2F)

Online Poster Presentation Core Time (oVice)

Odd Number: 20:00 - 20:45, July 12 (Tue), Online (oVice)

Even Number: 20:45 - 21:30, July 12 (Tue), Online (oVice)

- P-1** **Coupling of Fe stable isotope analysis and X-ray absorption spectroscopy to assess the biological Fe cycle of marine organisms**
 Nanako Hasegawa¹, Takaaki Itai¹, Tatsuya Kunisue², Yoshio Takahashi¹
¹Department of Earth and Planetary Science, the University of Tokyo, ²Center for Marine Environmental Studies (CMES), Ehime University
- P-2** **Withdrawal**
- P-3** **Quantification of trace amount of ⁹⁰Sr in small size biosamples using isotope dilution–energy filtered thermal ionization mass-spectrometry: controlling the background noise from natural Sr in samples**
 Jo Aoki¹, Shigeyuki Wakaki², Takashi Miyazaki², Katsuhiko Suzuki², Yoshitaka Takagai^{1,3}
¹Faculty of Symbiotic Systems Science, Fukushima University, ²JAMSTEC, ³IER, Fukushima University
- P-4** **Influence of Alkali Metals on Emission Intensity of Indium and Gallium using Liquid Electrode Plasma Atomic Emission Spectroscopy (LEP-AES)**
 Shunto Sakai¹, Tamotsu Yamamoto², Jun Miyazaki³, Akiko Hokura⁴
¹Department of Materials Science and Engineering, Graduate School of Engineering, Tokyo Denki University, ²Micro Emission Ltd., ³Department of Natural Sciences, School of Engineering, Tokyo Denki University, ⁴Department of Applied Chemistry, School of Engineering, Tokyo Denki University
- P-5** **Withdrawal**
- P-6** **Development of an Infrared Droplet Desolvation System for Single Human Cell Introduction to ICP-AES/MS**
 Takashi Ohta¹, Yusaku Yanagii¹, Yuya Shimizu¹, Kiori Kawade¹, Yuki Maemoto², Motohide Aoki², Takahiro Iwai³, Tomonari Umemura², Koichi Chiba⁴, Akitoshi Okino¹
¹FIRST, Tokyo Institute of Technology, ²School of Life Sciences, Tokyo University of Pharmacy and Life Sciences, ³Photon Science Research Division, RIKEN, ⁴School of Science and Technology, Kwansai Gakuin University
- P-7** **Inverter-modulated microplasma excitation source for high sensitive analysis of various elements**
 Yuya Shimizu¹, Yuta Ishikawa¹, Yusaku Yanagii¹, Daiki Yoshida¹, Takashi Ohta¹, Motohide Aoki², Tomonari Umemura², Akitoshi Okino¹
¹Laboratory for Future Interdisciplinary Research of Science and Technology, Tokyo Institute of Technology, ²Graduate School of Life Sciences, Tokyo University of Pharmacy and Life Sciences
- P-8** **Development of ICP-MS sampling equipment for single cell elemental analysis**
 Motohide Aoki¹, Yanbei Zhu², Takao Yasui³, Akitoshi Okino⁴, Tomonari Umemura¹
¹School of Life Sciences, Tokyo University of Pharmacy and Life Sciences, ²National Metrology Institute of Japan (NMIJ), National Institute of Advanced Industrial Science and Technology (AIST), ³Department of Biomolecular Engineering, Graduate School of Engineering, Nagoya University, ⁴FIRST, Tokyo Institute of Technology



- P-9** **Development and application of quantitative detection method for reactive selenium species**
 Misaki Matsunaga¹, Noriyuki Suzuki², Yasumitsu Ogra²
¹Grad. Sch. Med. Pharm. Sci., Chiba Univ., ²Grad. Sch. Pharm. Sci., Chiba Univ.
- P-10** **Physiological Response to the Extraordinary Iron Stress in A Unicellular Red Alga *Galdieria sulphuraria***
 Yukihiko Fukuta¹, Shin-ichi Miyashita², Yuu Hirose³, Ayumi Minoda⁴
¹Graduate school of science and technology, University of Tsukuba, ²National Metrology Institute of Japan, National Institute of Advanced Industrial Science and Technology, ³Faculty of Applied Chemistry and Life Science Toyohashi University of Technology, ⁴Faculty of Life and Environmental sciences, University of Tsukuba
- P-11** **Polysulfide transport across outer membrane in the sulfur-reducing bacterium *Geobacter sulfurreducens***
 Daiki Fujita¹, Mst. Ishrat Jahan¹, Yudai Ishido¹, Yukiko Izu¹, Masao Inoue^{1,2}, Riku Aono¹, Hisaaki Mihara¹
¹Department of Biotechnology, College of Life Sciences, Ritsumeikan University, Kusatsu, Shiga 525-8577, Japan, ²Ritsumeikan Global Innovation Research Organization, Ritsumeikan University, Kusatsu, Shiga 525-8577, Japan
- P-12** **Molecular Dynamics Simulation Reveals Structural Variations of Metallothionein with or without Zinc Ions**
 Rikuri Morita, Yasuteru Shigeta, Ryuhei Harada
 Center for Computational Sciences, University of Tsukuba
- P-13** **Adaptive changes in expression and structure of Ni transporters in the Ni hyperaccumulator *Noccaea japonica***
 Sho Nishida^{1,2}, Takuo Enomoto¹, Junko Yoshida³, Ryoji Tanikawa⁴, Takafumi Mizuno³, Naoki Furuta⁴
¹Faculty of Agriculture, Saga University, ²United Graduate School of Agricultural Sciences, Kagoshima University, ³Graduate School of Bioresources, Mie University, ⁴Faculty of Science and Engineering, Chuo University
- P-14** **Selenite respiration in a *Cellulomonas* strain isolated from a seleniferous soil**
 Hibiki Ueda¹, Akinori Sakamoto¹, Kohei Makimura¹, Masao Inoue^{1,2}, Riku Aono¹, Ryuta Tobe¹, Yu Hirose³, N. Tejo Prakash⁴, Hisaaki Mihara¹
¹Department of Biotechnology, College of Life Sciences, Ritsumeikan University, Shiga 525-8577, Japan, ²Ritsumeikan Global Innovation Research Organization, Ritsumeikan University, Kusatsu, Shiga 525-8577, Japan, ³Department of Applied Chemistry and Biotechnology, Toyohashi University of Technology, Toyohashi, Aichi 441-8580, Japan, ⁴Thapar Institute of Engineering & technology, Patiala, Punjab 147004, India
- P-15** **Different substrate specificities of two catalytic subunits of selenate/tellurate reductase in *Escherichia coli***
 Kyohei Kusakabe¹, Riku Aono¹, Masao Inoue^{1,2}, Ryuta Tobe¹, Hisaaki Mihara¹
¹College of Life Sciences, Ritsumeikan University, ²R-GIRO, Ritsumeikan University
- P-16** **Functional analysis of a novel molybdenum-dependent methionine sulfoxide reductase from *Bacillus* species**
 Kyohei Kojima¹, Yuka Kuzuno¹, Anna Ochi¹, Riku Aono¹, Masao Inoue^{1,2}, Ryuta Tobe¹, Yoichi Takeda¹, N. Tejo Prakash³, Hisaaki Mihara¹
¹College of Life Sciences, Ritsumeikan University, ²R-GIRO, Ritsumeikan University, ³School of Energy and Environment, Thapar Institute of Engineering and Technology
- P-17** **Structure and function of heme uptake system in *Corynebacteria***
 Norifumi Muraki^{1,2}, Shigetoshi Aono^{1,2}
¹Metallobiology group, Exploratory Research Center on Life and Living System, National Institute for Natural Sciences, ²Biomolecular Functions, Institute for Molecular Science, National Institute for Natural Sciences



- P-18 Metallomic investigation for inhibiting the fibril-formation of collagen proteins**
 Hiroyuki Yasui, Eikichi Tanaka, Hiyori Fukui, Rio Uno, Akari Tsunoda, Wakana Nishino
Department of Analytical and Bioinorganic Chemistry, Division of Analytical and Physical Sciences, Kyoto Pharmaceutical University
- P-19 TDP-43 transports ferritin heavy chain mRNA to regulate oxidative stress in neuronal axons**
 Jyunki Jinno^{1,2}, Rehab Abdelhamid^{1,2}, Yasuyoshi Kimura¹, Kensuke Ikenaka¹, Goichi Bekku¹, Kousuke Baba^{1,5}, Yoshitaka Nagai^{2,4}, Emiko Kasahara³, Atsuo Sekiyama³, Tasuku Hirayama⁶, Isao Hozumi⁷, Tatsuya Hasegawa⁸, Hideki Mochizuki¹, Seiichi Nagano^{1,2,9}
¹Department of Neurology, Osaka University Graduate School of Medicine, ²Department of Neurotherapeutics, Osaka University Graduate School of Medicine, ³Preemptive Medical Pharmacology for Mind and Body, Osaka University Graduate School of Pharmaceutical Sciences, ⁴Department of Neurology, Faculty of Medicine, Kindai University Graduate School of Medicine, ⁵Department of Neurology, Faculty of Medicine, Academic Research Division, University of Toyama, ⁶Laboratory of Pharmaceutical and Medicinal Chemistry Gifu Pharmaceutical University, ⁷Laboratory of Medical Therapeutics and Molecular Therapeutics, Gifu Pharmaceutical University, ⁸Mount Fuji Research Institute, Yamanashi Prefectural Government, ⁹Integrated Frontier Research for Medical Science Division, Institute for Open and Transdisciplinary Research Initiatives (OTRI), Osaka University
- P-20 KNS3 and its two homologs form a probable cargo-receptor complex, important for ER exit of boric acid channels in Arabidopsis**
 Zhe Zhang¹, Arisa Yamasaki¹, Shunsuke Nakamura², Shunsuke Takemura³, Sumie Ishiguro³, Junpei Takano^{1,4}
¹Graduate School of Life and Environmental Sciences, Osaka Prefecture University, ²Graduate School of Agriculture, Hokkaido University, ³Graduate School of Bioagricultural Sciences, Nagoya University, ⁴Graduate School of Agriculture, Osaka Metropolitan University
- P-21 Regulation of alternative splicing of MYB59 secures shoot K homeostasis under low K conditions in Arabidopsis thaliana**
 Takuo Enomoto¹, Nobuhiro Tanaka², Toru Fujiwara³, Sho Nishida^{1,4}
¹Faculty of Agriculture, Saga University, Saga, Japan, ²Institute of Crop Science, NARO, Japan, ³Graduate School of Agricultural and Life Sciences, The University of Tokyo, Japan, ⁴United Graduate School of Agricultural Sciences, Kagoshima University, Kagoshima, Japan
- P-22* Helicase (nsp13) as a Target to Develop Inhibitors for Combating SARS-CoV-2 Infection**
 Xueying WEI, Suyu Wang, Yuen-Ting Wong, Runming Wang, Tianfan Cheng, Lijian Jin, Jasper Fuk-Woo Chan, Shuofeng Yuan, Hongyan Li, Hongzhe Sun
The University of Hong Kong
- P-23 Creation of the Artificial Water Oxidation Metalloenzyme using Cytochrome P450 Scaffold**
 Misa Kamei, Masaki Nojiri
Department of Chemistry, Graduate School of Science, Osaka University
- P-24 Iron(III) and gallium(III) complexes of siderophores and their biomimetic analogues – coordination properties and biological activity in vitro and in vivo**
 Andrzej Mikołaj Mular¹, Isabella Hubmann², Matthias Misslinger³, Hubertus Haas³, Milos Petrik⁴, Clemens Decristoforo², Elżbieta Gumianna-Kontecka¹, Henryk Kozłowski¹
¹Faculty of Chemistry Wrocław University Wrocław Poland, ²Department of Nuclear Medicine Medical University Innsbruck Austria, ³Department of Molecular Biology, Medical University Innsbruck, Innsbruck, Austria, ⁴Institute of Molecular and Translational Medicine, Palacký University Olomouc, Olomouc, Czech Republic
- P-25 Effect of Warm Water Washing of Green Coffee Beans on Elemental Concentrations of Roasted Coffee Beans Observed by ICP-MS after Microwave Acid Digestion**
 Yanbei Zhu¹, Tomonari Umemura², Kitaro Oka²
¹National Institute of Advanced Industrial Science and Technology, ²Tokyo University of Pharmacy and Life Sciences



- P-26** **Histidine rich C-terminal (HRCT) tail of mycobacterial GroEL1 as a potential ligand for Cu(II)/Ni(II) ions**
Anna Maria Rola, Elzbieta Gumienna-Kontecka, Sławomir Potocki
The Biological Inorganic Chemistry Group, Faculty of Chemistry, University of Wrocław
- P-27** **To bind zinc or not to bind zinc: *S. pneumoniae* metallopeptidase binding site interaction with Zn(II), Ni(II), and Cu(II)**
Paulina Potok, Elzbieta Gumienna-Kontecka, Sławomir Potocki
The Biological Inorganic Chemistry Group, Faculty of Chemistry, University of Wrocław
- P-28*** **Metallo-sideromycin: A double Trojan Horse strategy for combating antimicrobial strategy**
Chenyuan Wang, Runming Wang, Jingru Li, Patrick H Toy, Hongyan Li, Hongzhe Sun
Department of Chemistry, Faculty of Science, the University of Hong Kong
- P-29** **Development of a new heme-selective fluorescent probe for sensing subcellular dynamics of labile heme**
Kanta Kawai, Tasuku Hirayama, Takanori Murakami, Masatoshi Inden, Mieko Tsuji, Hideko Nagasawa
Gifu Pharmaceutical University
- P-30** **Possible involvement of brain copper accumulation in emotional memory disturbance in multiple mouse models of Down syndrome**
Keiichi Ishihara¹, Eri Kawashita¹, Haruhiko Sago², Kazuhiro Yamakawa³, Satoshi Akiba¹
¹Department of Pathological Biochemistry, Kyoto Pharmaceutical University, ²Center for Maternal -Fetal, Neonatal and Reproductive Medicine, National Center for Child Health and Development, Tokyo Japan, ³Department of Neurodevelopmental Disorder Genetics, Institute of Brain Science, Nagoya City University Graduate School of Medical Sciences, Nagoya, Japan
- P-31** **Crosstalk of selenium metabolisms between intestinal microflora and a host animal**
Kazuaki Takahashi^{1,2}, Sakie Horiai³, Sayano Iijima³, Yoshikazu Yamagishi⁴, Hirotaro Iwase⁴, Yasumitsu Ogra²
¹Graduate School of Horticulture, Chiba University, ²Graduate School of Pharmaceutical Sciences, Chiba University, ³Faculty of Pharmaceutical Sciences, Chiba University, ⁴Graduate School of Medicine, Chiba University
- P-32** **Metallomics Analysis for Early Assessment and Intervention of Neurodevelopment Disorders: Infantile Zinc Deficiency and Toxic Metal Burdens**
Hiroshi Yasuda^{1,2}, Toyoharu Tsutsui¹
¹La Belle Vie Research Laboratory, ²Institute of Nature and Environmental Technology, Kanazawa University
- P-33** **Neutron irradiation after administration of Gd-EDTMP to a mouse model of mammary tumor bone metastasis: Effects and distribution of Gd formulation as a novel neutron capture therapy agent**
Takehisa Matsukawa^{1,2}, Minoru Suzuki³, Ayano Kubota¹, Atsuko Shinohara^{1,4}, Kazuhito Yokoyama^{1,5}
¹Department of Epidemiology and Environmental Health, Juntendo University Faculty of Medicine, ²Department of Forensic Medicine, Juntendo University Faculty of Medicine, ³Institute for Integrated Radiation and Nuclear Science, Kyoto University, ⁴Research Institute for Cultural Studies, Seisen University, ⁵Department of Epidemiology and Environmental Health, International University of Health and Welfare Graduate School of Public Health
- P-34** **Dietary exposure to trace elements in Japan in 2019-2021 with time trends since 1977**
Yoshinari Suzuki¹, Ikuko Kitayama¹, Masae Harimoto¹, Midori Kondo¹, Hiroshi Akiyama^{1,2}, Tomoaki Tsutsumi¹
¹National Institute of Health Sciences, ²Hoshi University
- P-35** **Challenges in measuring minerals in hair as a health indicator**
Hiroaki Kitamura, Keigo Sugimoto, Atsuko Ota
Research and Development Department, Aderans Co., Ltd



- P-36** **Vitamin E increases lysosomal Fe (II) production in hepatocytes despite being protective against ferroptosis**
Kotoko Arisawa¹, Moeka Natori², Yoshiro Saito¹
¹Graduate School of Pharmaceutical Sciences, Tohoku University, ²Faculty of Pharmaceutical Sciences, Tohoku University
- P-37** **Iron supplementation attenuates obesity and hepatic steatosis via upregulation of mitochondrial, heme, and iron-sulfur cluster-associated gene transcription**
Naho Kitamura^{1,2}, Yoko Yokoyama^{1,2}, Hiroki Taoka^{1,2}, Utana Nagano^{1,2}, Shotaro Hosoda^{1,2},
Tanon Tawornawat^{1,2}, Anna Nakamura^{1,2}, Yoko Ogawa⁴, Kazuo Tsubota^{2,4,5}, Mitsuhiro Watanabe^{1,2,3,6}
¹Graduate School of Media and Governance, Keio University, Japan, ²Health Science Laboratory, Keio Research Institute at SFC, Japan,
³Department of Environment and Information Studies, Keio University, Japan, ⁴Department of Ophthalmology, Keio University School of Medicine, Japan, ⁵Tsubota Laboratory, Inc., Japan, ⁶Department of Internal Medicine, Keio University School of Medicine, Japan
- P-38** **Cu and Zn isotope ratio variations in plasma for survival prediction in haematological malignancy cases**
Mari Shimura¹, Agustina A. M. B. Hastuti², Marta Costas-Rodríguez², Akihiro Matsunaga¹, Takayuki Ichinose³,
Shotaro Hagiwara⁴, Frank Vanhaecke²
¹Research Institute, National Center for Global Health and Medicine, ²Ghent University, Department of Chemistry, Atomic & Mass Spectrometry – A&MS research unit, ³Inorganic Analysis Laboratories, Toray Research Center Inc., ⁴Internal Medicine, Hospital, National Center for Global Health and Medicine
- P-39** **Development of micromini plasma jet for plasma injection probe to *in vivo* drug measurement in living organisms**
Daiki Yoshida¹, Yuya Shimizu¹, Yukiko Moriiwa², Toshihiro Takamatsu^{3,4}, Takahiro Iwai⁵, Atsushi Shoji²,
Akitoshi Okino¹
¹FIRST, Tokyo Institute of Technology, ²Tokyo University of Pharmacy and Life Sciences, ³Tokyo University of Science, ⁴National Cancer Center Hospital East, ⁵RIKEN
- P-40** **Low-temperature Plasma Source Capable of Generating Various Reactive Species and Irradiating Living Organisms**
Taiki Osawa¹, Zhizhi Liu¹, Kai Fukuchi¹, Yohei Fukuyama¹, Yuriko Matsumura², Atsuo Iwasawa², Akitoshi Okino¹
¹FIRST, Tokyo Institute of Technology, ²Tokyo Healthcare University
- P-41** **Development of high-speed temperature control multi-gas plasma jet for irradiating to living organisms/cells**
Toshiki Aizawa¹, Yohei Fukuyama¹, Yuriko Matsumura², Atsuo Iwasawa², Akitoshi Okino¹
¹FIRST, Tokyo institute of technology, ²Tokyo Healthcare University
- P-42** **Estimation of exposure to various elements in infancy via breast milk and formula milk**
Miyuki Iwai-Shimada¹, Nozomi Tatsuta², Kenta Iwai¹, Kaname Asato², Kunihiro Nakai³, Yayoi Kobayashi¹,
Mai Takagi¹, Shoji F. Nakayama¹
¹National Institute for Environmental Studies, ²Tohoku University Graduate School of Medicine, ³Tokai Gakuen University
- P-43** **Synchrotron radiation-based X-ray absorption spectroscopy revealed production of Mn oxide mediated by epiphytic bacteria in a submerged freshwater macrophyte *Egaria densa***
Emiko Harada¹, Keisuke Okui², Sawa Tanaka¹, Yumu Azuma¹, Tomoki Ichinose³, Kensuke Inaba³, Akiko Hokura³
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- P-44** **Isolation and characterization of a manganese oxidizing bacterium from a submerged plant, *Ranunculus nipponicus* var. *submersus***
Emiko Harada¹, Keisuke Okui², Hiroshi Hasegawa¹, Yoshiyasu Nagakawa³, Takahide Kurosawa⁴
¹Department of Biological Resources Management, School of Environmental Science, The University of Shiga Prefecture, ²Division of Environmental Dynamics, Graduate School of Environmental Science, The University of Shiga Prefecture, ³Biotechnology Group, Tokyo Metropolitan Industrial Technology Research Institute, ⁴Faculty of Symbiotic Systems Science, Fukushima University
- P-45** **Roles of RecA in growth and round-body formation of *Bacillus subtilis* exposed to selenite**
Anna Ochi¹, Masao Inoue^{1,2}, Riku Aono¹, Hisaaki Mihara¹
¹College of Life Sciences, Ritsumeikan University, ²R-GIRO, Ritsumeikan University
- P-46** **Crosstalk of zinc and copper in the pathogenesis of vascular type senile dementia**
Masahiro Kawahara, Motonari Nakashiro, Risa Ookubo, Ken-ichiro Tanaka, Midori Kato-Negishi
Department of Bio-Analytical Chemistry, Faculty of Pharmacy, Research Institute of Pharmaceutical Sciences, Musashino University
- P-47** **Tributyltin inhibits neural induction via mitochondrial dysfunction in human iPS cells**
Shigeru Yamada, Yukuto Yasuhiko, Yasunari Kanda
Division of Pharmacology, National Institute of Health Sciences
- P-48** **Biogenic extracellular selenium particles are wrapped within membrane vesicles in *Escherichia coli***
Kano Shibamoto¹, Anna Ochi¹, Yosuke Toyotake¹, Riku Aono¹, Masao Inoue^{1,2}, Tomoya Imai³, Hisaaki Mihara¹
¹Department of Biotechnology, College of Life Sciences, Ritsumeikan University, ²R-GIRO, Ritsumeikan University, ³Research Institute for Sustainable Humanosphere, Kyoto University
- P-49** **Distinct distributions of aluminum, manganese, cobalt, and lead in the Pacific Ocean**
Yoshiki Sohrin, Linjie Zheng, Cheuk-Yin Chan
Institute for Chemical Research, Kyoto University
- P-50** **Arsenic-induced insulin resistance and its relation with muscle loss in humans**
Seiichiro Himeno¹, Khaled Hossain²
¹School of Pharmacy, Showa University, ²Rajshahi University
- P-51** **Effect of cadmium on human trophoblast differentiation**
Shoko Ogushi¹, Tsuyoshi Nakanishi², Tomoki Kimura¹
¹Department of Life Science, Faculty of Science and Engineering, Setsunan University, ²Laboratory of Hygienic Chemistry and Molecular Toxicology, Gifu Pharmaceutical University
- P-52** **FOXA1 is responsible factor for cytoprotection by exposure to arsenic in HaCaT cells**
Daigo Sumi¹, Rio Fujinaga¹, Yuri Sato¹, Ai Takase¹, Seiichiro Himeno^{1,2}
¹Faculty of Pharmaceutical Sciences, Tokushima Bunri University, ²Faculty of Pharmaceutical Sciences, Showa University
- P-53** **Iron Nanoparticles in plants: toxicity or beneficial effect?**
Sandrine CHAY, Lara ZOTTNER, Carine ALCON, Catherine CURIE, Stéphane MARI
Institute for Plant Sciences of Montpellier IPSiM, Metal Mobility team, Cnrs – Inrae – Institut Agro – Université de Montpellier, France
- P-54** **Formation of biogenic tellurium nanorods in a unicellular green alga, *Chlamydomonas reinhardtii***
Shohei Takada¹, Yu-ki Tanaka¹, Kazuhiro Kumagai², Keita Kobayashi², Akiko Hokura³, Yasumitsu Ogra¹
¹Graduate School of Medical and Pharmaceutical Sciences, Chiba University, Japan, ²Nanodimensional Standards Group, National Institute of Advanced Industrial Science and Technology, Japan, ³Department of Applied Chemistry, School of Engineering, Tokyo Denki University, Japan



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- P-55** **Selenium toxicity accelerated by out-of-control response of Nrf2-xCT pathway**
Koji Ueda, Akira Aoki, Yoshinori Okamoto, Hideto Jinno
Faculty of Pharmacy, Meijo University
- P-56** **Distribution of uranium in bone tissues by quantum beam-based elemental analyses with microbeam**
Shino Homma Takeda¹, Kyoko Ayama¹, Yugo Kato¹, Haruko Yakumaru¹, Daisuke Ohsawa¹, Ryotaro Sato^{1,2}, Chiya Numako³, Akihiro Uehara¹, Izumi Tanaka¹, Masakazu Oikawa¹, Oki Sekizawa⁴, Kiyofumi Nitta⁴, Hiroshi Ishihara¹
¹National Institute of Radiological Sciences, National Institutes for Quantum and Radiological Science and Technology, ²Graduate School of Science and Engineering, Chiba University, ³Graduate School of Science, Chiba University, ⁴Japan Synchrotron Radiation Research Institute
- P-57** **Conditions for the addition of platinum hyperaccumulation in unicellular algae and speciation of platinum accumulated in algae**
Masato Tokoro¹, Kazuhiro Kumagai², Akiko Hokura¹
¹Department of Materials Science and Engineering, Graduate School of Engineering, Tokyo Denki University, ²National Institute of Advanced Industrial Science and Technology
- P-58** **Fundamental study on the detection of uranium in bio-fluids: uranium detection and chemical form in serum**
Akihiro Uehara¹, Ryotaro Sato^{1,2}, Daisuke Ohsawa³, Haruko Yakumaru¹, Chiya Numako², Oki Sekizawa⁴, Kiyofumi Nitta⁴, Izumi Tanaka¹, Hiroshi Ishihara¹, Shino Homma-Takeda¹
¹National Institute of Radiological Sciences, National Institutes for Quantum Science and Technology, ²Department of Chemistry, Graduate School of Science, Chiba University, ³Institute for Quantum Medical Science, National Institutes for Quantum Science and Technology, ⁴Japan Synchrotron Radiation Research Institute
- P-59** **Analysis of selenium metabolites accumulated in callus of fern, *Athyrium yokoscense***
Akiko Hokura¹, Koutarou Matsui¹, Shota Yuzawa², Kazuaki Takahashi³, Yasumitsu Ogra³
¹School of Engineering, Tokyo Denki University, ²Graduate School of Science and Engineering, Tokyo Denki University, ³Graduate School of Pharmaceutical Sciences, Chiba University
- P-60** **Lead increases susceptibility to ferroptosis by disrupting iron and selenium metabolism**
Takayuki Hoshi, Satoru Shiina, Takashi Toyama, Yoshiro Saito
Laboratory of Molecular Biology and Metabolism, Graduate School of Pharmaceutical Sciences, Tohoku University
- P-61** **Thallium induces oxidative stress in hypothalamic neuronal cell line (GT1-7 cells)**
Dai Mizuno¹, Masahiro Kawahara², Keiko Mizuno¹
¹Faculty of Medicine, Yamagata University, ²Faculty of Pharmacy, Musashino University
- P-62** **Cadmium induces metallothionein expression in mouse thoracic aorta and perivascular adipose tissue**
Yasuyuki Fujiwara, Yayoi Tsuneoka, Tsutomu Takahashi, Yo Shinoda
Department of Environmental Health, School of Pharmacy, Tokyo University of Pharmacy and Life Sciences
- P-63** **Elemental distribution of essential elements in the sternum by micro-PIXE analysis**
Yugo Kato, Kyoko Ayama, Haruko Yakumaru, Akihiro Uehara, Izumi Tanaka, Masakazu Oikawa, Shino Homma-Takeda
National Institute of Radiological Science, National Institutes for Quantum Science and Technology



- P-64** **Induction of a reactive sulfur-producing enzyme cystathionine gamma-lyase in cultured vascular endothelial cells exposed to arsenite**
 Tsutomu Takahashi¹, Naoya Miyakawa¹, Sumire Fuji¹, Yayoi Tsuneoka¹, Yo Shinoda¹, Tomoya Fujie^{2,3}, Chika Yamamoto², Toshiyuki Kaji³, Yasuyuki Fujiwara¹
¹Department of Environmental Health, School of Pharmacy, Tokyo University of Pharmacy and Life Sciences, ²Department of Environmental Health, Faculty of Pharmaceutical Sciences, Toho University, ³Department of Environmental Health, Faculty of Pharmaceutical Sciences, Tokyo University of Science
- P-65*** **Mechanism of methylmercury toxicity reduction by the transcription factor TCF3**
 Himeka Ota¹, Akari Matsushima¹, Takashi Toyama², Akira Naganuma², Gi-Wook Hwang^{1,2}
¹Laboratory of Environmental and Health Sciences, Faculty of Pharmaceutical Sciences, Tohoku Medical and Pharmaceutical University, ²Laboratory of Molecular Biochemical Toxicology, Graduate School of Pharmaceutical Sciences, Tohoku University
- P-66** **Tri-substituted organotin compounds bind specifically to lipocalin family protein complement component 8gamma**
 Katsuya Yamamoto^{1,2}, Daisuke Matsumaru¹, Keishi Ishida¹, Youhei Hiromori^{1,3}, Satoshi Endo⁴, Hisamitsu Nagase^{1,5}, Tsuyoshi Nakanishi¹
¹Laboratory of Hygienic Chemistry and Molecular Toxicology, Gifu Pharmaceutical University, ²JSPS Research Fellow DC, ³Faculty of Pharmaceutical Sciences, Suzuka University of Medical Science, ⁴Laboratory of Biochemistry, Gifu Pharmaceutical University, ⁵Faculty of Pharmacy, Gifu University of Medical Science
- P-67** **Construction of ionome database of Japanese wild plants and extraction of plant nutritional information**
 Takafumi Mizuno¹, Daichi Kondo², Hiroto Kasai², Yoshinori Murai³, Atsushi Hashimoto¹, Toshihiro Watanabe⁴
¹Graduate School of Bioresources, Mie University, ²Faculty of Bioresources, Mie University, ³Department of Botany, National Museum of Nature and Science, ⁴Research Faculty of Agriculture, Hokkaido University
- P-68** **Geogenic arsenic and nickel exposure from rice consumption in Yangon Division, Myanmar: Health risk assessment**
 Kazuhiro Toyoda^{1,2}, Aye Myint Myat Soe², Aye Aye Mu³
¹Section of Integrated Environmental Science, Faculty of Environmental Earth Science, Hokkaido University, ²Division of Environmental Science Development, Graduate School of Environmental Science, Hokkaido University, ³Department of Botany, Bago University, Bago, Myanmar
- P-69** **Development of on-chip sample injection system with a 6-port valve for micro-flow-injection analysis**
 Kazuhiro Morioka¹, Hina Sato¹, Kenji Morita¹, Akihide Hemmi², Hizuru Nakajima³, Atsushi Shoji¹, Akio Yanagida¹
¹Department of Biomedical Analysis, School of Pharmacy, Tokyo University of Pharmacy and Life Sciences, ²Mebius Advanced Technology Ltd., ³Department of Applied Chemistry, Graduate School of Urban Environmental Sciences, Tokyo Metropolitan University
- P-70*** **Chrono-toxicity of cisplatin induced renal injury in mice**
 Hiroki Yoshioka¹, Sarah Tominaga², Masumi Suzui², Nobuhiko Miura³
¹College of Pharmacy, Gifu University of Medical Science, ²Department of Neurotoxicology, Nagoya City University Graduate School of Medical Sciences, ³Department of Health Science, Yokohama University of Pharmacy
- P-71** **Simultaneous quantification of oligo-nucleic acids and ferritin nanocage by size-exclusion chromatography hyphenated to inductively coupled plasma mass spectrometry for developing drug delivery systems**
 Junko Yamazaki, Ippei Inoue, Akihiro Arakawa, Sachise Karakawa, Kazutoshi Takahashi, Akira Nakayama
 Research Institute for Bioscience Products & Fine Chemicals, Ajinomoto Co., Inc.



- P-72** **Differentiating nanoparticles based on their composition using continuous, fast, full spectral acquisitions of a TOF-ICP-MS**
 Lukas Schlatt, Phil Shaw
Nu Instruments
- P-73** **Isotopologue pattern based data mining for selenium species from HILIC-ESI-Orbitrap-MS derived data**
 Katarzyna Bierla¹, Mihály Dernovics², Simon Godin¹, Márta Ladányi³, Joanna Szpunar¹
¹IPREM CNRS UPPA UMR 5254, ²Agricultural Institute, ELRN, ³Institute of Mathematics and Basic Science, MATE
- P-74*** **MULTI-ELEMENT ANALYSIS OF SINGLE CELLS USING A TOF-ICP-MS – FLOW CYTOMETRY ANALYSIS ALONG WITH A NOVEL INSTRUMENT CAPABLE OF FAST UNINTERRUPTED FULL MASS DATA ACQUISITION**
 Darryl Neil Johnson¹, Lukas Schlatt², Phil Shaw²
¹Materials Characterisation and Fabrication Platform, Dept. Chemical Engineering, The University of Melbourne, ²Nu Instruments, Clywedog Road South Wrexham Industrial Estate, Wrexham, UK
- P-75*** **Analysis of metal-binding mechanism in SOD1 by native mass spectrometry**
 Satoko Akashi¹, Michiko Tajiri¹, Yoshiaki Furukawa²
¹Graduate School of Medical Life Science, Yokohama City University, ²Department of Chemistry, Keio University
- P-76*** **Using CO₂ Reaction to Achieve Mass-Spectrometric Discrimination for Pu isotopic analysis with Inductively Coupled Plasma-Mass Spectrometry**
 Makoto Matsueda^{1,2}, Tomohiko Kawakami³, Kazuma Koarai², Motoki Terashima², Kenso Fujiwara², Kazuki Iijima², Makoto Furukawa⁴, Yoshitaka Takagai^{1,5}
¹Faculty of Symbiotic Systems Science, Cluster of Science and Technology, Fukushima University, ²Collaborative Laboratories for Advanced Decommissioning Science, Japan Atomic Energy Agency, ³Kaken Inc., ⁴PerkinElmer Japan Co., Ltd., ⁵Institute of Environmental Radioactivity, Fukushima University
- P-77*** **Identification of a Transcription Factor, SPL7, Involved in the Enhanced Expression of SULTR2;1 in Arabidopsis Roots**
 Tsukasa Ushiwatari¹, Akiko Maruyama-Nakashita¹, Nobutaka Mitsuda², Toshiharu Shikanai³
¹Department of Bioscience and Biotechnology, Faculty of Agriculture, Kyushu University, ²Bioproduction Research Institute, National Institute of Advanced Industrial Science and Technology (AIST), ³Department of Botany, Graduate School of Science, Kyoto University
- P-78*** **Pharmacological role of metallothionein in drug-induced gingival overgrowth**
 Yukihiko Tamura¹, Pornpoj Fuangtharnthip², Yasuka Kusumoto³, Tsutomu Iwamoto³, Yoshihiro Waki⁴
¹Department of Dental Pharmacology, Division of Bio-Matrix, Graduate School of Medical and Dental Sciences, Tokyo Medical and Dental University, Tokyo Japan, ²Department of Advanced General Dentistry, Faculty of Dentistry, Mahidol University, Bangkok, Thailand, ³Department of Pediatric Dentistry/Special Needs Dentistry, Graduate School of Medical and Dental Sciences, Tokyo Medical and Dental University, Tokyo Japan, ⁴Division of Social Pharmacy, Department of Pharmaceutical Sciences, Nihon Pharmaceutical University, Saitama, Japan
- P-79*** **Semistable and redox active kinetic intermediates expose a gold mine of novel ideas for copper biology**
 Radosław Kotuniak¹, Iwona Ufnalska¹, Marc J.F. Strampraad², Peter-Leon Hagedoorn², Wojciech Bal¹
¹Laboratory of Biological Chemistry of Metal Ions, Institute of Biochemistry and Biophysics, Polish Academy of Sciences, Poland, ²Department of Biotechnology, Delft University of Technology, The Netherlands
- P-80*** **Bactericidal and Anti-oxidant Activity of SeNPs Concomitantly Synthesized and Stabilized with Fungal Extracts**
 Anmol¹, Ranjana Prakash², Sumit Jaiswal³, Hisaaki Mihara⁴, Tejo Prakash Nagaraja⁵
¹School of Chemistry and Biochemistry, Thapar Institute of Engineering and Technology, ²School of Chemistry and Biochemistry, Thapar Institute of Engineering and Technology, Patiala, India, ³Department of Microbiology, Marwadi University, Rajkot, India, ⁴Department of Biotechnology, Ritsumeikan University, Kusatsu, Japan, ⁵School of Energy and Environment, Thapar Institute of Engineering and Technology, Patiala, India



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Effect of metallothionein on elastase-induced pulmonary emphysema

Ken-ichiro Tanaka¹, Sachie Shiota¹, Okina Sakakibara¹, Mikako Shimoda¹, Ayaka Takafuji¹, Misaki Takabatake¹, Yoshito Kadota², Takashige Kawakami², Shinya Suzuki², Masahiro Kawahara¹

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Withdrawal

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Targeting zinc-binding protein metallothionein in astrocytes for dopaminergic neuroprotection

Ikuko Miyazaki, Masato Asanuma

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Marine environmental impact assessment technique for ecological effects of heavy metals using amphipod

Kyoko Yamaoka¹, Akira Iguchi¹, Miyuki Nishijima¹, Eri Ikeuchi¹, Yukiko Kozaka¹, Atsushi Suzuki¹, Masayuki Nagao¹, Misa Toda², Tetsuro Okamura²

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Tributyltin decreases lysosomal acidity and inhibits autophagic degradation

Shunichi Hatamiya, Masatsugu Miyara, Yaichiro Kotake

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Variations of anthropogenic Gadolinium, Lanthanum, and presence of iodine in wastewater from water-recycle plants in Sapporo city, Hokkaido, Japan

Zakia Aktar¹, Kazuhiro Toyoda^{1,2}

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