

2009 International Symposium on Metallomics - Cincinnati, USA - final program

Monday, June 8

Tuesday, June 9

Wednesday, June 10

8:20 AM	Intro/Welcome - Joe Caruso	8:25 AM Intro/Welcome - Dave Koppenaal	8:25 Intro/Welcome - Gary Hieftje
8:30 AM	PL1 Detection of metalloproteins and their post-translational modifications by use of ICP-MS Norbert Jakubowski, Ingo Feldmann, Larissa Waentig and Peter H. Roos, ISAS - Institute for Analytical Sciences	PL3 Metallomic studies of photosynthetic microbes Himadri B. Pakrasi, Department of Biology, Washington University	PL5 Selenium analytical proteomics and metabolomics Joanna Szpunar and Mihaly Dernovics, National Research Council of France
9:15 AM	Break - Roebling 3	Break - Roebling 3	Break - Roebling 3
AM SESSION I	METALLOMIC TECH I	MICROBIAL METALLOMICS	HUMAN METALLOMICS III
9:30 AM	Joe Caruso - presiding	David Koppenaal - presiding	Himadri Pakrasi - presiding
9:30 AM	IL1 Analytical strategies for metallomics Ryszard Lobinski, National Research Council of France	IL5 Metallomics – Quo Vadis? Rudolf Grimm, Agilent Technologies	IL11 Metalloproteomics of copper-transport and copper-associated genetic diseases Bibudhendra Sarkar, University of Toronto
10:00 AM	TECH I Talks (6)	BIO IV Talks (6)	BIO III Talks (5)
10:00 AM	C1 UPLC – ESI MSMS/ICPMS: A global tool for comprehensive fingerprinting of seleno-metabolome Hugues Preud'homme, Johann Far, Ryszard Lobinski, Laboratory of Bio-Inorganic and Environmental Analytical Chemistry	C18 Allocating manganese versus copper to proteins. Nigel Robinson, Steve Tottey, Kevin Waldron, Susan Firbank, Conrad Bessant, Newcastle University	C40 In vivo tumor imaging using semiconductor compton camera Yousuke Kanayama, Shinji Motomura, Tomonori Fukuchi, Chinuyo Sumita, Yasuko Matsumoto, Emi Hayashinaka, Yasuhiro Wada, Yasuyoshi Watanabe, Shuichi Enomoto, RIKEN Center for Molecular Imaging Science
10:20 AM	C2 Multi-element determination in peptides using nano HPLC coupled with ICPMS Yoshinari Suzuki and Naoki Furuta, Chuo University	C19 Application of epithermal neutron activation analysis to study heavy-metal interactions with indigenous bacteria Nelly Tsibakhahsvili, Tamaz Kalabegishvili, Liguri Mosulishvili, Elena Kirkesali, Salome Kerkenjia, Marina Frontasyeva, Inga Ziniovskaja, Hoi-Ying Holman, Andronikashvili Institute of Physics and Chavchavadze State University	C41 Analysis of Gd-based MRI contrast agents and potential transmetallation products in human body fluids Lena Telgmann, Jens Künemeyer, Faruk Tokmak and Uwe Karst, University of Münster
10:40 AM	C3 Evaluation of metal exchange and binding capabilities of proteins by LC-PB/HC-OES C. Derrick Quarles Jr., R. Kenneth Marcus, Clemson University	C20 Narrow spectrum antimicrobials: targeting selenium metabolism in pathogenic microorganisms William T. Self and Sarah Jackson-Rosario, University of Central Florida	C42 Elemental bio-imaging of calcium phosphate based crystal deposits in samples from arthritic patients Christine Austin, Dominic Hare, Andrew L Rozelle, William H Robinson, Rudolf Grimm, Philip Doble, University of Technology Sydney
11:00 AM	C4 Separation and quantification of antisense oligonucleotides by hydrophilic interaction liquid chromatography coupled to ICP-MS Renee N. Easter, Karolin K. Kroening and Joseph A. Caruso. University of Cincinnati	C21 Proteomic investigation of microbial transformation of a roxarsone, a chicken feed additive Partha Basu, Vadiraja B. Bhat, Peter Chovanec, John F. Stolz, Duquesne University	C43 Distribution and speciation of metals in tissues from patients with metal-on-metal hip implants by laser ablation ICPMS and synchrotron X-ray spectrometry Barry Sampson, Ann Sandison, Paul Quinn, Fred Mosselmans and Alister Hart, Charing Cross Hospital
11:20 AM	C5 Capillary LC hyphenated to ICP-MS and on-line micro-fraction collection for MALDI-TOF analysis – New combined analytical approach for the hetero(atom) specific determination of phosphorylated peptides Daniel Proefrock, Andreas Prange, GKSS Research Centre	C22 Study of metalloproteins in lambda phage by size exclusion chromatography and inductively coupled plasma mass spectrometry Yaofang Zhang, Richard Thompson, Joseph Caruso, University of Cincinnati	C44 Advances in sulfur and phosphorus detection via ICPMS for the identification of oligonucleotide: peptide heteroconjugates Brittany Catron, Scott Afton, Patrick Limbach and Joseph Caruso, University of Cincinnati
11:40 AM	C6 Ion/Ion reactions and ion mobility mass spectrometry to probe gas-phase ion structures for metallomics R. S. Houk, G. M. Schieffer, D. L. Morast, Q. Zhao, E. R. Badman, Department of Chemistry, Iowa State University		C45 Immunoaffinity sample preparation with detection of proteins using lanthanide tags and ICP-MS Blakely Adair, Eric Kilpatrick, Guillaume Ballihaut, W Clay Davis, Walter Knight, Stephen Long, and Steven Christopher, NIST

AM SESSION II	HUMAN METALLOMICS I Scott Tanner, Chair	PHYTO METALLOMICS	METALLOMICS TECH III
9:30 AM	Scott Tanner - presiding	David Salt - presiding	Hiroki Haraguchi - presiding
9:30 AM	IL2 Metalloproteomics and the annotation of human metalloproteomes Wolfgang Maret, The University of Texas Medical Branch	IL6 Metals in photosynthetic gene expression and DNA binding Jeffrey M. Zaleski, Brigitte Robinson, Brian J. Kraft, Lee R. Swem, Danielle L. Swem, Carl E. Bauer, Indiana University	IL12 High Resolution mass spectrometry – highest accuracy for the characterization of metalloproteins Shona McSheehy, Meike Hamester, Thomas Moehring, Martin Zeller, Eugen Damoc, Thermo Fisher Scientific
10:00 AM	BIO I Talks (6)	PLANTS I Talks (6)	TECH III Talks (5)
10:00 AM	C7 Effects of statins on selenium metabolism in patients with chronic renal failure Barry Sampson, Adrian Park, Yusof Rahman, Lutz Schomburg, Frederick Tam and Andrew Frankel; Charing Cross Hospital	C23 Exploring the structural basis of the antagonism between mercury and selenium in the Allium fistulosum – green onion Scott E. Afton, David H. McNear, Jr. and Joseph A. Caruso, Research Triangle Institute	C46 Organometallic derivatizing agents for peptide and protein analysis Susanne Bomke, Heiko Hayen, Uwe Karst, University of Münster
10:20 AM	C8 Selenium metabolism in cancer cells and normal cells Bente Gammelgaard, Kristoffer Lunøe, Charlotte Gabel-Jensen, University of Copenhagen	C24 Comparative metallogenomics: Intracellular zinc handling proteins in plants Claudia A. Blindauer, Oksana I. Leszczyszyn, and Ralf Schmid, University of Warwick	C47 Analysis of arsenicals and their sulfur analogs using HPLC with collision cell ICP-MS and ESI-MS Kevin M. Kubachka, Christina M. Gallawa, Patricia A. Creed, John T. Creed, Michael C. Kohan, Karen Herbin-Davis, and David J. Thomas, U.S. Food and Drug Administration
10:40 AM	C9 Selenium status in mammals and its role during heavy metal deposition Armin Gross, Hagen Stosnach, Kostja Renko, Lutz Schomburg, Bruker AXS Microanalysis GmbH	C25 Lead speciation in botanical extracts via liquid chromatography particle beam mass spectrometry Joaudimir Castro, Derrick Quarles, R. Kenneth Marcus, Clemson University	C48 Iron (III) porphyrin supported on dowex resin as a heterogeneous catalyst for alkene epoxidation and alkanes hydroxylation with hydrogen peroxide Monalisa Mukherjee, Alok R. Ray, Amity University
11:00 AM	C10 Novel metallomic approaches for improved anti-cancer treatment Emma Peachey, Heidi Goenaga Infante, Shireen Kassam, Christopher Hopley, D. Juresa and Simon Joel, LGC Limited	C26 Simultaneous Fe, Zn, S and P speciation analysis of barley grain tissues using SEC-ICP-MS and IP-ICP-MS Søren Husted, Daniel P. Persson, Thomas H. Hansen, Kristian H. Laursen & Jan K. Schjørring, University of Copenhagen	C49 Stable isotope tracers in metallomics: data interpretation and calculation strategies Juris Meija and Zoltán Mester, National Research Council Canada
11:20 AM	C11 Detoxification mechanisms for copper in mouse fibroblast lacking metallothionein Takamitsu Miyayama, Yasumitsu Ogra, Chiba University	C27 Highly sensitive histochemical staining of iron combined with genetic analysis of arabidopsis embryos: iron specific accumulation in the endodermal cell layer Stéphane Mari, Hannelz Roschztardt, Geneviève Conéjéro, Catherine Curie, Université Montpellier II	C50 Multimodal X-ray and MS imaging of metallic nanodeposits in yeast Zoltan Mester, National Research Council
11:40 AM		C28 The investigation of selenium metabolites in soybean (Glycine Max) via ion-pairing reversed phase chromatography with ICPMS and ESI-IT-MS Qilin Chan, Scott E. Afton, Joseph A. Caruso, University of Cincinnati	C51 Elemental Mapping and Chemical Speciation of Cadmium in Metal-Hypertolerant Fern, Athyrium yokoscense, by X-ray Spectrometry Utilizing A Synchrotron Radiation Source Akiko Hokura, Sakiko Mitsuo, Nobuyuki Kitajima, Fumiyuki Goto, Toshihiro Yoshihar
12:00 PM	Lunch	Lunch	Lunch
1:30 PM	Joe Caruso - presiding	Gary Hieftje - presiding	Ken Marcus - presiding
1:30 PM	PL2 Professor Kazuo T. Suzuki Memorial Lecture – K. T. Suzuki, Leader in Metallomics, A Man Ahead of His Time; Hiroki Haraguchi, Association of International Research Initiatives for Environmental Studies	PL4 First applications of a mass cytometer and element-tagging system for individual cell bioanalysis, Scott D. Tanner, Olga Ornatsky, Dmitry I. Bandura, Vladimir I. Baranov, University of Toronto	PL6 Genetic Dissection of the Ionome, David E. Salt, Purdue University
2:15 PM	Break - Roebling 3	Break - Roebling 3	Break - Roebling 3

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PM SESSION I	HUMAN METALLOMICS II	METALLOMICS TECH II	INVITED SESSION
	Joanna Szpunar - presiding	Gary Hieftje - presiding	Ken Marcus - presiding
2:30 PM	IL3 Complementary mass spectrometry for the characterisation of protein-mercury species interactions Jörg Bettmer, Daniel J. Kutscher, University of Oviedo	IL7 Metal uptake and transport by proteins as assessed by species specific and unspecific quantitative speciation strategies A. Sanz-Medel, A. Sarmiento, J.M. Marchante-Gayón, J. Ruiz-Encinar, University of Oviedo	IL13 ICP-MS as a complementary analytical tool in studies of epigenetic phenomena Katarzyna Wrobel, Kazimierz Wrobel, University of Guanajuato
3:00 PM	BIO II Talks (7)	TECH II Talks (6)	
3:00 PM	C12 Analysis of the plasma metalloproteome by SEC-ICP-AES: bridging proteomics and metabolomics Jürgen Gailer, Katie L. Pei, Shawn A. Manley, University of Calgary	C29 3 D elemental bio-imaging Philip Doble, Dominic Hare, Christine Austin, David Bishop, Rudolph Grimm, University of Technology Sydney	IL14 Chromium inhibits gene expression by reprogramming histone marks Alvaro Puga, Li Peng, Michael Schneckeburger, University of Cincinnati
3:20 PM	C13 ICP-MS, a very useful tool in Diabetes Mellitus research Maria Montes-Bayón, E. del Castillo, Y. Nuevo, C. Sánchez, J. Llopis, E. Blanco and A. Sanz Medel, University of Oviedo	C30 Imaging of proteins with a pulsed radio frequency glow discharge after gel electrophoretic separation Carsten Engelhard, Yi Pan, Meghan McCormick, Steven J. Ray, Gary M. Hieftje, Indiana University	
3:30 PM			IL15 Metalloproteins in the mouse <i>Mus musculus</i> by multidimensional chromatography-ICP-MS assisted by 2D electrophoresis
3:40 PM	C14 Interactions of thimerosal with proteins – ethylmercury adduct formation of human serum albumin and β -lactoglobulin Uwe Karst, Stefan Trümpler, Björn Meermann, Wiebke Lohmann, Wolfgang Buscher, Michael Sperling University of Münster	C31 Quantification method for elemental bio-imaging by LA ICP-MS using spiked thin films Christine Austin, Tristan Rawling, Dominic Hare, Andrew McDonagh, Philip Doble, University of Technology Sydney	José Luis Gomez-Ariza, Tamara García-Barrera, Macarena Gonzalez-Fernandez, Juan Jurado, Juan Lopez-Barea, Carmen Pueyo, University of Huelva
4:00 PM	C15 Synthesis of zinc(II) complexes with benzo fused hydroxyazines and their insulin-mimetic activities Akira Katoh, Naoko Yagisawa, Maki Asaga, Yuriko Matsumura, Yutaka Yoshikawa, Hiroyuki Yasui, and Hiromu Sakurai, Seikei University	C32 Tche UMAS-ICP-MS Detector – a new universal mass spectrometric detection system for speciation analysis operated at only 1 L min ⁻¹ argon Wolfgang Buscher, Thorben Pfeifer, Michael Sperling, University of Münster and European Virtual Institute for Speciation Analysis – EVISA	IL16 Metabolism of selenium and tellurium in animals and plants Yasumitsu Ogra, Showa Pharmaceutical University
4:20 PM	C16 A study on effects of replenished zinc on patients with rheumatoid arthritis Seiichi Ono, Kenji Kawate, Sadahiro Suzuki, Fusazo Urano and Toshimichi Matsui, Center for Rheumatic Diseases, Shinonoi General Hospital	C33 Development of new metallomics techniques for microbial metallome characterization David W Koppenaal, Himadri Pakrasi, Jana Stockel, James A Campbell, Charles J Barinaga, Pacific Northwest National Laboratory	
4:30 PM			
4:40 PM	C17 Insights into Zn ²⁺ homeostasis in neurons and the cellular actions of clioquinol from experimental and modeling studies R.A. Colvin, A.I. Bush, I. Volitakis, C.P. Fontaine, D. Thomas, K. Kikuchi, W.R. Holmes, Ohio University	C34 High-throughput analytical method development for the ionomics of model organisms John M.C. Danku, Brett Lahner, Ivan Baxter, David E. Salt, Purdue University	IL17 Distribution and metabolism of selenium in mice injected with ⁸² Se enriched selenite Naoki Furuta, Yoshinari Suzuki, Faculty of Science and Technology Tokyo
5:00 PM	IL4 New avenues in brain research by imaging mass spectrometry and metallomics J. Sabine Becker, Kathryn Morton, J. Susanne Becker, Research Centre Juelich, Germany	IL8 Use of a dual-source inductively-coupled plasma/electrospray ionization mass spectrometer for metallomics analysis Steven J. Ray, Duane Rogers, Alex Graham, Gary Hieftje, Indiana University	

2:30 PM		Norbert Jakubowski - presiding
PM SESSION II	ENVIRONMENTAL METALLOMICS	ENVIRONMENTAL METALLOMICS
2:30 PM		IL9 Marine environmental analysis using speciation analysis and proteomic techniques Andreas Prange, GKSS Research Centre
	ENVIRON I Talks (0)	ENVIRON I Talks (6)
3:00 PM		C35 Cytotoxicity of arsenic containing chemical warfare agent degradation products with metallomic approaches for metabolite analysis Karolin K. Kroening , Renee N. Easter, Morwena J.V. Solivio, Alvaro Puga, Joseph A. Caruso, University of Cincinnati
3:20 PM		C36 Organo-arsenic animal feed additive and its environmental degradation induced protein biomarker using Tetrahymena pyriformis as a model Fang Xua, Jingjing Hana, Qun Sunb, Mingqiang Zouc, Shanghai Jiaotong University
3:40 PM		C37 Is ICP-MS the only way to do metallomics - an example with Ambystoma mexicanum Claudia A. Ponce de León, Fabiola Rodríguez, Cecilia Vanegas, Cecilia Robles, Manuel Hernández, Universidad Nacional Autónoma de México
4:00 PM		C38 Influence of selenium and mercury chemistries on the progression of cardiomyopathy: impacts on oxidative stress and selenoprotein profiles in pygmy sperm whales Colleen E. Bryan, W. Clay Davis, Guillaume Ballihaut, Gregory D. Bossart, Carola Neumann, Wayne E. McFee, Steven J. Christopher, NIST Hollings Marine Laboratory and Marine Biomedicine and Environmental Science Center, Medical University of South Carolina
4:20 PM		C39 Population based exposure assessment of bioaccessible arsenic in carrots Santha K.V Yathavakilla, Andrea R. Young, Sarah E. Lenhof, Madhavi Mantha, Christina M. Gallawa, Patricia A. Creed, Jianping Xue, John T. Creed. US EPA. NERL. HEAS
5:00 PM		IL10 Defining the metalloproteomes of microbes by letting metals take the lead Michael W. W. Adams, Aleksandar Cvetkovic, Angeli Lal Menon , Farris L. Poole II, Sarat Shanmukh, Michael Thorgersen, Joseph Scott, Jeremy Praissman, Ewa Kalisiak, Sunia Trauger, Steven M. Yannone, John A. Tainer, Gary Siuzdak, University of Georgia

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	Starts 5:30 PM - Poster Session I (12) Roebling 3	Starts 5:30 PM - Poster Session II (12) Roebling 3	Starts 5:00 PM - Poster Session III (11) Roebling 3
	P1 Detection and identification of selenoproteins in human serum and plasma SRMs by LC/ICP-MS and LC/MS/MS Guillaume Ballihaut, W. Clay Davis, Colleen Bryan, Eric L. Kilpatrick, Lisa E. Kilpatrick, Stephen E. Long, Stephen A. Wise, National Institute of Standards and Technology	P12 Expanding the metalloproteomes of microorganisms Aleksandar Cvetkovic, Angeli Lal Menon, Farris L. Poole II, Sarat Shanmukh, Michael Thorgersen, Joseph Scott, Jeremy Praissman, Ewa Kalisiak, Sunia Trauger, Steven M. Yannone, John A. Tainer, Gary Siuzdak, Michael W. W. Adams, University of Georgia	P24 Analysis of arsenicals and their sulfur analogs in biological samples using HPLC with collision cell ICP-MS and ESI-MS/MS Patricia A. Creed, Christina M. Gallawa, Kevin M. Kubachka, John T. Creed, Michael C. Kohan, Karen Herbin-Davis, David J. Thomas, Tom Van de Wiele, US EPA, ORD, NERL, MCEARD
	P2 Interactions of cisplatin in the human body Christine Brauckmann, Björn Meermann, Uwe Karst, University of Münster	P13 Metallomics study on the Cu, Pb, Ni binding to humic acid and the related metal bioavailability to tomato plant in the presence of Fusarium oxysporum f. sp. lycopersici Alma Rosa Corrales Escobosa, Julio Alberto Landero Figueroa, J. Felix Gutiérrez Corona, Katarzyna Wrobel, Kazimierz Wrobel, University of Guanajuato	P25 Synthesis and characterization of azidobis acetylacetonato manganese (III) ethylenediamine Seema Yadava and Umesh Yadava, Gorakhpur University
	P3 Comparison of capillary-HPLC-ICPMS sulfur detection techniques via the characterization of penicillins Brittany Catron, Scott Afton, Joseph Caruso, University of Cincinnati	P14 Identification of selenium compounds in Se enriched rice by Foliar application using HPLC-ICP-MS and chip-based nanoESI-ITMS Yong Fang, Yaofang Zhang, Qihui Hu, Joseph A. Caruso, University of Cincinnati	P26 Volatile selenium metabolites Charlotte Gabel-Jensen, Bente Gammelgaard, University of Copenhagen
	P4 Phosphorus as internal elemental tag for the determination of global DNA methylation by HPLC – ICP-MS Julio Alberto Landero Figueroa, Katarzyna Wrobel, Silvio Zaina, Gertrud Lund, Kazimierz Wrobel, University of Guanajuato	P15 Study of mercury-selenium interactions in microalgae by means of ultrasonic probe and column switching HPLC coupled to ICP-MS F. Moreno, T. García-Barrera, J.L. Gómez-Ariza, Universidad de Huelva	P27 Elemental speciation studies with a dual source time-of-flight mass spectrometer Alexander W. G. Graham, Duane A. Rogers, Steven J. Ray, Gary M. Hieftje, Indiana University
	P5 Effect of bis(picolinate)zinc on 3'-AMP forming enzyme activity in liver of mice treated with carbon tetrachloride Hiroyuki Fujimori, Miyako Takeshita, Hidemitsu Pan-Hou, Akihiro Miyamoto, Setsunan University	P16 Bioavailability of selenium in enriched Pleurotus ostreatus mushrooms Juliana Naozuka, Marliane C. S. da Silva, Pedro V. Oliveira, Maria C. D. Vanetti, Denise M. S. Bazzolli, Neuza M. B. Costa, Maria C. M. Kasuya, Universidade de Federal do ABC	P28 Identification and characterization of gadolinium-based magnetic resonance imaging agents from tissue samples by HPLC-ICP-OES Chethaka Kahakachchi, Dennis Moore, Covidien, Imaging Solutions
	P6 Identification of copper binding proteins in the brain of the genetically sequenced Mus musculus by orthogonal chromatography coupled to ICP-MS and QqTOF M. González-Fernández, T. García-Barrera, J.López-Barea, C. Pueyob, J.L. Gómez-Ariza, Campus Universidad de Huelva	P17 Evaluation of Cu and Fe bioavailability in Cashew nuts Pedro Vitoriano Oliveira, Angerson Nogueira do Nascimento, Juliana Naozuka, Universidade de São Paulo	P29 EC/LC/ICP-MS analysis of Amiodarone and its' oxidation products Karst, Uwe, Meermann, B., Möller, I., Lohmann, W., Scheffer, A, University of Münster
	P8 Ribonucleoside labeling with Os(VI) – a methodological approach to evaluation of RNA methylation by HPLC – ICP-MS Crescencio Rodríguez Flores, Katarzyna Wrobel, Kazimierz Wrobel, University of Guanajuato	P18 Study of Cr(VI) and Zinc(II) joint action on Arthrobacter globiformis Olia Rcheulishvili, Nelly Tsibakhahsvili, Tamaz Kalabegishvili, Alex Rcheulishvili, Dodo Pataraya, Manana Gurieidze, Hoi-Ying Holman, Chavchavadze State University	P30 Quantitative analysis of bio-molecules using phosphorus – a new combined LC-ESI and ICP-MS approach to minimize problems related with the application of monoisotopic element tags for quantification Daniel Proefrock, Andreas Prange, GKSS Research Centre
	P9 Metallomics study on toxic metals: high accumulation of aluminum, lead and cadmium in Japanese infants and children Hiroshi Yasuda, Kazuya Yoshida, Mitsuru Segawa, Ryoichi Tokuda, Yuichi Yasuda, Research Laboratory, La Belle Vie Inc.	P19 Study on Cd storage and detoxification mechanism of tobacco by micro-XRF-XAFS analyses using high-energy synchrotron radiation Saori Takada, Nobuyuki Kitajima, Yasuko Terada, Tomoko Abe, Akiko Hokura, Izumi Nakai, Tokyo University of Science	P31 Analytical speciation of mercury in fish by HPLC – ICP-MS with Bi(III) as internal standard María Maldonado Santoyo, Julio Alberto Landero Figueroa, Kazimierz Wrobel, Katarzyna Wrobel, University of Guanajuato

	<p>P10 Zn limitation as a host defense mechanism against <i>Histoplasma capsulatum</i> Michael S. Winters, Qilin Chan, Joseph A. Caruso, George S. Deepe, University of Cincinnati</p>	<p>P20 Chemical form of cadmium deposited in the roots of the higher plant <i>Portulaca oleracea</i> Etsuro Yoshimura, Moe Tsurunari, Kazuo Furihata, Mitsuru Abo, The University of Tokyo</p>	<p>P32 A practical approach in determination of toxicity of elements from magnesium recovered from seawater of Korea using ICP-MS Hyeon Yoon, Cheolho Yoon, Kang-Sup Chung, Korea Institute of Geoscience & Mineral Resources</p>
	<p>P11 Investigation on total and speciated arsenic in concentrated fruit juices Nohora V. Shockey, Barbara Barnes, John Urban, Kevin Kubachka, Cathy Dasenbrock, Douglas T. Heitkemper; U.S. Food and Drug Administration</p>	<p>P21 Metabolic transformation and accumulation of arsenic species in plant Hyeon Yoon, Cheolho Yoon, M. H. Lee, Bo-Ra Min, Kyung-Suk Cho, Ewha Womans University</p>	<p>P33 Uptake and metabolism of arsenic by exposure cultures of the Copepod <i>Tigriopus japonicus</i> Cheolho Yoon, Hyeon Yoon and Yun-Cheol Na, Korea Basic Science Institute</p>
		<p>P22 Development of adsorption techniques for removing toxic elements in magnesium oxide and hydroxide obtained from seawater of Korea Hyeon Yoon, M. H. Lee, Cheolho Yoon, Bo-Ra Min, Kang-Sup Chung, Korea Institute of Geoscience & Mineral Resources</p>	
		<p>P23 Metal distribution in rice seeds during the germination process using X-ray fluorescence imaging of Fe, Zn, Mn, and Cu Michiko Takahashi, Nobuyuki Kitajima, Naoki Fukuda, Akiko Hokura, Yasuko Terada, Izumi Nakai, Naoko K Nishizawa, The University of Tokyo</p>	
6:30 PM		<p><i>Gala Dinner - Metropolitan Club</i> <i>Reception cocktails/hors d'oeuvres</i> 6:30</p>	

KEY	6 Plenaries - 45 min, PL1 - PL6	Breaks/Lunch/Dinner/Closing
	17 Invited Lectures - 30 min, IL1 - IL17	Welcome/Presider
	Contributed Talks, C1 - C51	
	74 Total Talks	
	33 Posters, P1 - P33	