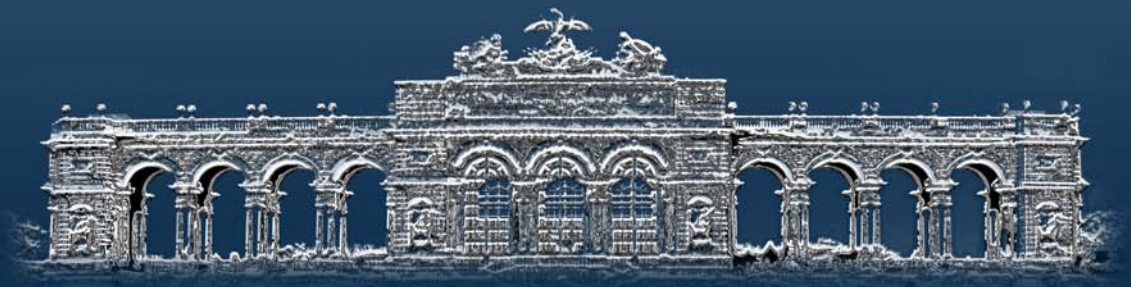
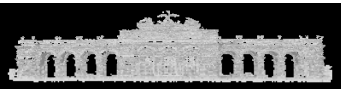
The 6th International Symposium on Metallomics

Metallomics 2017

University of Vienna

Program / Timetable





Day 1 - Sunday (Details)

Large Ceremonial Chamber

15:00	Registration
17:00	Opening (by the Conference Chairs)
17:15	**Bob Crichton / IL1 / pg 3** A journey through the world of iron
18:00	**Christian Obinger / IL2 / pg 4** From innate immunity to hormone and extracellular matrix biosynthesis - how posttranslational modifications of the heme cofactor modulate catalysis of human peroxidases
18:45	Welcome reception

Day 2 - Monday (Details)

	Large Lecture Room	Small Lecture Room
	Analytical approaches in metallomics / Chair: Norbert Jakubowski	
08:15	**Ryszard Lobinski / IL3 / pg 5** Analytical chemistry tools for metallomics: revisited and emerging	**Toxicology / Chair: Yasumitsu Ogra**
09:00	**Thomas Walczyk / IL4 / pg 6** Exploration of brain iron uptake and turnover in rodents using stable isotope techniques	**Tanja Schwerdtle / IL5 / pg 9** Toxicological characterization of arsenolipids: insights from cells, flies, worms and mice
09:30	**Yuko Yamagata / you1 / pg 7** Evaluation of Fe metabolism for deep sea organisms based on isotope signature	**Teresa Chavez-Capilla / you3 / pg 10** Arsenolipids: A journey through the human gut
09:45	**Sara Lauwens / you2 / pg 8** High-precision isotopic analysis of Cu via multi-collector ICP-mass spectrometry in blood serum of liver transplant recipients	**Ronald Glabonjat / you4 / pg 11** A novel arsenolipid biosynthesised by Dunaliella tertiolecta under controlled culturing conditions
10:00	Coffee break	
	Analytical approaches in metallomics / Chair: Walter Gössler	**Toxicology / Chair: Tanja Schwerdtle**
10:30	**Maria Montes / IL6 / pg 12** Nanostructured metallodrugs: new challenges for analytical chemistry	**Yasumitsu Ogra / IL7 / pg 19** Toxicology of tellurium explored by speciation and identification of tellurometabolites
11:00	**Konrad Loehr / you5 / pg 13** Towards quantitative high throughput single cell LA-ICP-MS: microarraying of single cells and calibration standards via piezo based non-contact dispensing	**Hai-Bo Wang / you8 / pg 20** Mapping protein targets of bismuth- and silver- based antimicrobials enables in-depth deciphering their molecular mechanisms
11:15	**Ying Zhou / you6 / pg 14** Single cell analysis of arsenic-containing drugs -Implicating the design of more effective arsenic drugs with better intracellular uptake	**Michael Stiboller / you9 / pg 21** Distribution of arsenic and its species in human milk
11:30	**Lingdong Sun / L1 / pg 15** Dual-Band Luminescent Nanoparticles toward Integrated Therapy and Imaging Platform	**Theodora Stewart / L4 / pg 22** Impact of chronic Ag exposure on intracellular Zn homeostasis in a fish intestinal cell line
11:50	**Dörthe Dietrich / L2 / pg 16** Complementary bioimaging to investigate changes in the phospholipid distribution in lung tissue after instillation of nanoparticles	**Yuchuan Wang / L5 / pg 23** Metalloproteomic and metabolomic analyses reveal the competing mechanism of gallium with iron in Pseudomonas aeruginosa
12:10	**Olga Borovinskaya / L3 / pg 17** Multi-element rapid detection using time-of-flight mass spectrometry for bioimaging and single cell analysis	**Yu-Feng Li / L6 / pg 24** Selenium reduced the level of mercury and promoted it to bind with Selenoprotein P in serum from methylmercury-poisoned rats
12:30	**Justyna Wojcieszek / you7 / pg 18** Investigation of mechanisms of the ZnO nanoparticles uptake in edible plants by single particle ICP MS and HPLC - ICP MS / ESI FT MSn	**Barbara Witt / you10 / pg 25** Characterizing neurotoxic effects of arsenolipids applying various in vitro models
12:45	Lunchseminar (Thermo Fisher: Performance for all Applications, Technology for all Challenges) / Lunchbreak	
14:00	Postersession	

Day 2 - Monday (Details)

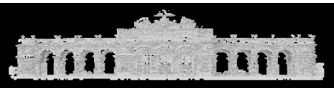
	Large Lecture Room	Small Lecture Room
	Analytical techniques / Chair: Claudia Swart	**Toxicology / Chair: Chunying Chen**
14:45	**Clay Davis / IL8 / pg 26** Developing the Next Generation of Reference Materials for Proteomic and Metalloprotein Measurements	**Seiichiro Himeno / IL9 / pg 29** Renal handling of heavy metals and its implications in renal toxicity
15:15	**Julia Gleitzmann / L7 / pg 27** IDMS-based quantification of metal-containing proteins with clinical relevance	**Javier Jiménez-Lamana / L9 / pg 30** Identification of molecular targets of different chemical forms of nickel in human skin cells by mass spectrometry
15:35	**Larissa Müller / L8 / pg 28** Laser Ablation Imaging Using Triple Quadrupole ICP-MS as a Tool for Biological Studies	**Magdalena Matczuk / L10 / pg 31** On the track of trafficking gold nanoparticles: Speciation changes in human cytosol
15:55	Coffee break	
	Analytical techniques / Chair: Martina Marchetti-Deschmann	**Different applications of hyphenated techniques / Chair: Xinrong Zhang**
16:25	**Heidi Goenaga-Infante / IL10 / pg 32** A Metallomic Approach to Study the Interaction of Inorganic Oxide Nanoparticles with Biological Systems in Nanotoxicity Studies	**Chunying Chen / IL11 / pg 39** Understanding the interaction of living systems with engineered metal nanoparticles by synchrotron radiation-based techniques
16:55	**Sören Meyer / L11 / pg 33** Single-cell analysis by ICP-MS/MS as fast tool for cellular bioavailability studies of metal species	**Agnes Hagege / L16 / pg 40** Hyphenated capillary electrophoresis ICP/MS: a promising technique to boost the metallomics toolbox.
17:15	**Jörg Bettmer / L12 / pg 34** Single Quadrupole and Triple Quadrupole ICP-MS for Single Particle Analysis of TiO2 Particles	**Andrea Raab / L17 / pg 41** Sulphur-containing peptides - Detection, Identification and Quantification
17:35	**Ana Lopez-Serrano / L13 / pg 35** Quantification of Silver Nanoparticles at Single Cell Level by Mass Cytometry	**Martin Stillman / L18 / pg 42** Binding constants for copper binding to metallothionein: Solving very complicated problems using ESI mass spectrometry
17:55	**Jörg Michel / L14 / pg 36** Improving Drug Therapies using Single Cell ICP-MS	**Naoki Furuta / L19 / pg 43** Peptide analysis of selenoproteins produced after intravenous injection of 82Se enriched selenite or selenomethionine in mice
18:15	**Weiyue Feng / L15 / pg 37** ICP-MS based single cell analysis and its application to the study of element masses and distribution patterns in single cells	**Lena Ruzik / L20 / pg 44** What is hidden in the goji berries? A response from hyphenated techniques
18:35	**Annabelle Mattern / you11 / pg 38** Synthesis and Functionalisation of Gold Nanoparticles with Biogenic Amines	
18:50	Workshop 2 (Martina Marchetti-Deschmann, Andreas Limbeck) Tutorial Imaging	Workshop 4 (Thomas Walzyk) Tracer Studies

Day 3 - Tuesday (Details)

	Large Lecture Room	Small Lecture Room
	Metallomic methods / Chair: Ryszard Lobinski	
09:00	**Norbert Jakubowski / IL12 / pg 45** Method development for metal detection at cellular levels	
09:45	**Uwe Karst / IL13 / pg 46** Complementary Imaging Techniques for Metallomics	
10:30	Coffee break	
11:00	Workshop 3 (Stephan Hann) Elemental Speciation	Workshop 1 (Tanja Schwerdtle) Toxicology

Day 4 - Wednesday (Details)

	Large Lecture Room	Small Lecture Room
	Metal based drugs / Chair: Bernhard Keppler	
08:15	**Walter Berger / IL14 / pg 47** Networks of molecular mechanisms cooperate in resistance against anticancer metal drugs	
09:00	**Hongzhe Sun / IL15 / pg 48** Systems approach for revealing the role of metals in medicine	**Isotopic analysis / Chair: Stephan Hann**
09:30	**Christopher Gerner / L21 / pg 49** On the molecular mechanism of action of organometallic anticancer drugs	**Marta Costas Rodriguez / L22 / pg 51** Cu isotope ratio variations in mice suffering from liver disease induced by common bile duct ligation
09:50	**Mario Corte Rodríguez / you12 / pg 50** Analysis of cisplatin uptake in sensitive and resistant individual cells by single-cell-ICP-MS	**Yu-Ki Tanaka / you13 / pg 52** Evaluation of the changes in the net bone volume through the calcium isotopic signatures for CKD and diabetic rat
10:05	Coffee break	
	Metal based drugs / Chair: Maria Montes	**Metallomics in plants / Chair: Stephan Hann**
10:30	**Paul Dyson / IL16 / pg 53** The influence of RAPTA-T on the tumor microenvironment.	**Soren Husted / IL17 / pg 59** The power of ICP-MS based bioimaging and speciation analysis to study mineral ion transport and functionality in plants
11:00	**Christian Kowol / L23 / pg 54** Distinctly enhanced anticancer activity in vivo by albumin-targeted platinum(IV) prodrugs	**Markus Puschenreiter / L28 / pg 60** Mobilization of iron by phytosiderophores in the rhizosphere of wheat
11:20	**Michael Jakupec / L24 / pg 55** Multicellular spheroids as models and tools in anticancer metallodrug research	**Emiko Harada / L29 / pg 61** Hyperaccumulation of manganese in a submerged plant is mediated by epiphytic bacteria
11:40	**Karla Pelivan / you14 / pg 56** Understanding the pharmacological behavior of the anticancer drug Triapine and its biologically active iron complex	**Sho Nishida / L30 / pg 62** Splicing isoform of NjZNT1 expressed in the zinc hyper accumulator Noccaea japonica encodes full active zinc transporter
12:00	**Petra Heffeter / L26 / pg 57** In vivo evaluation of serum binding, tissue distribution and anticancer activity of bismaleimide-containing oxaliplatin prodrugs after short- and long-time treatment	**Katarzyne Kinska / L31 / pg 63** Identification of palladium species following the uptake and metabolism of Pd nanoparticles by Sinapis alba L.
12:20	**Alessio Terenzi / L27 / pg 58** Ruthenium arene complexes for G-quadruplex DNA recognition	**Günther Weber / L32 / pg 64** Investigation into the coumarin-mediated mechanism of iron acquisition from alkaline soil into plants
12:40	Lunchseminar (Agilent: Understanding mechanisms of ICP-MS/MS for the accurate quantification of heteroatoms) / Lunchbreak	
13:30	Postersession	
	Metal based drugs / Chair: Hongzhe Sun	**Applications / Chair: Heidi Goenaga-Infante**
14:30	**Angela Casini / IL18 / pg 65** Supramolecular Self-assembled Metallacages for Biomedical Applications: New Insights	**Xinrong Zhang / IL19 / pg 68** Study of Organic Reactions with ICP-MS/MS



Day 4 - Wednesday (Details)

	Large Lecture Room	Small Lecture Room	
15:00	**Schoenhacker-Alte, Beatrix / L33 / pg 66** The role of caspase 8 induction and disruption of ER homeostasis in the sensitivity towards the GRP78 inhibitor KP1339/IT-139	**Jenifer García-Fernández / you16 / pg 69** Studies on Characterization and Bioavailability of Iron Oxide Nanoparticles for the Treatment of Iron Deficiency Anaemia	
15:15	**Daisy Wong / you15 / pg 67** Anti-Tumour Complex Dirhodium(II) Tetraacetate and its Interactions with Glutathione and Human Metallothionein	**Joanna Legat / you17 / pg 70** Interaction of medically promising gold nanorods with human serum proteins examined by CE-ICP-MS	
15:30	Coffee break		
	Metals in biomedicine / Chair: Christian Hartinger	**Applications of metallomic approaches / Chair: Christopher Gerner**	
16:00	**Frank Vanhaecke / IL20 / pg 71** Medical diagnosis based on natural isotope ratio variations of essential mineral elements in human biofluids?	**Qiuquan Wang / IL21 / pg 78** Metal-tagging strategy for PTMs Analysis	
16:30	**José Gómez-Ariza / L34 / pg 72** Characterization of metals profiles and homeostasis in serum during the progression of Alzheimer's disease	**Mona Sharar / you18 / pg 79** Elemental labeling for addressing peptides and proteins post-translational modifications: the formation of cysteine sufenic acids	16:30
16:50	**Sarah Theiner / L35 / pg 73** Multimodal imaging of multicellular tumor spheroids by MALDI-MS and high Resolution LA-ICP-MS	**Antje Jutta Herrmann / you19 / pg 80** Novel antibody tagging strategy using lanthanide loaded NHS-DOTA-ester for the application in highly selective LA-ICP-MS-based immunoassays	16:45
17:10	**Elena Milaeva / L36 / pg 74** Tin- and gold complexes with antioxidant pendants - candidates for selective anticancer agents	**Dorothee Ott / you20 / pg 81** Deeper insight into Fe(III) and Al(III) binding to the shuttle protein serum transferrin using ESI mass spectrometry and circular dichroism	17:00
17:30	**Margot Wenzel / L37 / pg 75** 'Gold-finger' domains formation by organometallic gold compounds: strategies to design PARP-1 inhibitors for cancer treatment	**Stefanie Fingerhut / you21 / pg 82** Gadolinium in human brain - LA-ICP-MS to quantify the distribution of gadolinium in different brain regions	17:15
17:50	**Konstantinos Kiakos / L38 / pg 76** Restoring cellular sensitivity to platinum-based drugs by targeted inhibition of STAT3	**Shahin Amirkhalili / you22 / pg 83** LA-ICP-MS imaging experiments on snap frozen tissue sections using a cooled ablation stage	17:30
18:10	**Hristo Varbanov / L39 / pg 77** Oxaliplatin reacts with DMSO only in the presence of water. Impact on drug combination studies	**Hannah Holtkamp / you23 / pg 84** Efficient separations of organometallic anticancer agents in serum samples using coated capillaries for CE-ICP-MS analysis	17:45
		Luis Galvez / you24 / pg 85 In vitro investigations on oxaliplatin - a comparison study of resistant and sensitive cells	18:00
		Christian Artner / you25 / pg 86 DNA or Protein - Capillary Zone Electrophoresis-Mass Spectrometry Rapidly characterizes Metallodrug binding Preferences	18:15

Day 5 - Thursday (Details)

	Large Lecture Room	Small Lecture Room
	Metal based drugs / Chair: Christian Kowol	**Bioinorganic chemistry / Chair: David Giedroc**
08:30	**Christian Hartinger / IL22 / pg 87** Bioanalytical Studies in the Development of Anticancer Metallodrugs	**Peter Faller / IL23 / pg 91** Bioinorganic Chemistry of amyloidogenic peptides
09:00	**Jürgen Gailer / L40 / pg 88** Tuning the metabolism of cisplatin	**Gerhard Multhaup / L43 / pg 92** The ß-site Amyloid precursor protein cleaving enzyme beta-secretase (BACE1) modulates intracellular copper homeostasis
09:20	**Eva Fischer-Fodor / L41 / pg 89** Molecular basis of platinum based drugs' otoxicity-an in vitro study on inner ear cells	**Atsushi Takeda / L44 / pg 93** Extracellular Zn2+ is essential for amyloid ß1-42-induced cognitive decline in the normal brain and its rescue
09:40	**Samuel Meier / L42 / pg 90** Unravelling the Reactivity of Gold-based Metallodrugs with Zinc Finger Domains and G-Quadruplex DNA by Mass Spectrometry	**Erin McAllum / L45 / pg 94** Identifying specific metalloproteomic changes in dementia with Lewy bodies using HPLC-ICP-MS
10:00	Coffee break	
	Imaging / Chair: Frank Vanhaecke	
10:30	**Joanna Collingwood / IL24 / pg 95** The case for imaging and speciation of metals in neurodegenerative disorders	**Applications / Chair: Thomas Walzyk**
11:00	**Mari Shimura / L46 / pg 96** Imaging of intracellular fatty acids by a single element labeling	**Anton Legin / L25 / pg 101** Ruthenium-based drug interactions with lipid turnover in cancer cells revealed by correlative NanoSIMS and TEM imaging
11:20	**Stijn Van Malderen / L47 / pg 97** High-resolution LA-ICP-MS imaging of lanthanide-based (hybrid) labels with low-dispersion aerosol transport systems	**Claudia Swart / L51 / pg 102** Importance of Reference Measurement Procedures in Diagnostic of Alzheimer's Disease
11:40	**Michael Sperling / L48 / pg 98** Quantitative Bioimaging by LA-ICP-MS for Studying the Migration of Silver from Silver-coated Endoprostheses	**Wenbing Yun / L52 / pg 103** A New Approach to Microns-Resolution Trace Element Mapping at PPM Sensitivity for Metallomics
12:00	**Liuxing Feng / L49 / pg 99** A Novel Absolute Quantitative Imaging strategy of Iron, Copper and Zinc in Biological Tissues by Isotope Dilution Laser Ablation ICP-MS	**Hongyan Li / L53 / pg 104** Tracking arsenic binding proteins in live leukemia cells by an organoarsenic probe
12:20	**Bill Spence / L50 / pg 100** An instrumental approach to improving trace metal determinations for metallomics analysis	**Maria Florez / L54 / pg 105** Natural Fe isotope fractionation in an intestinal Caco-2 cell line model
12:40	Lunch	

Day 5 - Thursday (Details)

Large Lecture Room | **Small Lecture Room**

	Biochemistry of metals / Chair: Peter Faller
13:30	**David Giedroc / IL25 / pg 106** Mechanisms of Zinc Metallostasis in Bacterial Pathogens
14:00	**Shigetoshi Aono / L55 / pg 107** Structure and Function of Heme Transport Proteins in Corynebacterium glutamicum
14:20	**Clotilde Policar / L56 / pg 108** Inorganic Complexes for Applications in Biology: Mn-Complexes as SOD mimics from Design to Evaluation in Cells
14:40	**Ferman Chavez / L57 / pg 109** Synthetic studies for bioremediation enzymes
15:00	**Takamitsu Kohzuma / L58 / pg 110** Structure and Function of Non-Covalent Weak Interaction in Blue Copper Protein
15:20	**Angel Zhang / you26 / pg 111** Computational and spectroscopic studies toward design of chlorophyll derivatives for photodynamic therapy
15:35	Coffee break
16:05	Closing ceremony