

26th ESCPB^{new} Congress

^{new}European Society for Comparative Physiology and Biochemistry

INNSBRUCK, Austria

September 6 - 9, 2009

**Environmental stimuli and their impact
on homeostasis and gene regulation**



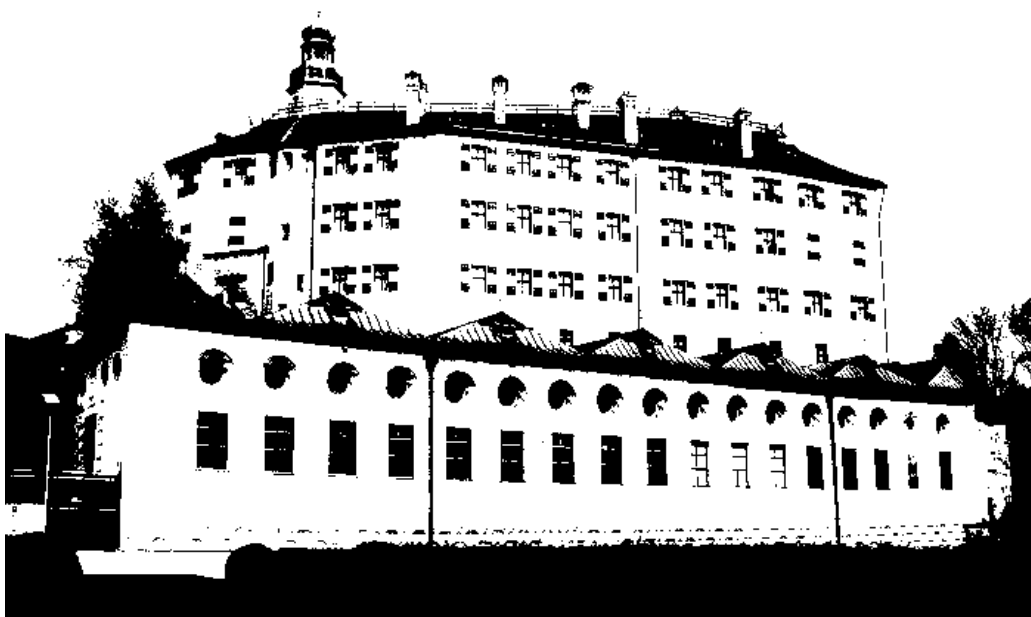
PROGRAMME



26th ESCPB^{new} Congress Innsbruck, Austria September 6 - 9, 2009

Innsbruck

As early as 15 BC, an important Roman road passed through “Veldidena”, the vicinity of today’s Innsbruck. The name Innsbruck was firstly mentioned in the year 1167 AD and translates into “a bridge over the Inn river”. During the medieval ages, the Austrian duke Friedrich IV resided in Innsbruck, which was also the capital of the Austrian emperor Maximilian I from 1459-1519. His residence, the “Hofburg”, is still a dominant building central to the old town. Some ten years later, the archduke of Tyrol, Ferdinand II, established his residence in the magnificent Renaissance castle of Ambras, situated close to the city, which boasts important historical and artistic collections. These days, Innsbruck is the cultural centre and capital of the Western Austrian country of Tyrol. Innsbruck has 120000 inhabitants and hosts two universities.



The Renaissance Castle of Ambras near Innsbruck

Innsbruck welcomes

the participants of the 26th Congress of the ^{new}European Society for Comparative Biochemistry and Physiology dedicated to:

Environmental stimuli and their impact on homeostasis and gene regulation

Scientific Sessions at this congress are:

- Environmental stimuli and their impact on cellular homeostasis and gene regulation
- Temperature and oxygen as modulatory factors of physiological processes from genes to cells
- Respiratory proteins: expression, structure, function, and evolution
- Metals, toxicants and toxicant mixtures: effects at the cellular, transcriptomic, proteomic and metabolomic levels
- The role of stress in organism performance, development and evolution
- Interaction between major cellular signalling pathways

Special session topics are:

- Extrinsic modulators and cardio-respiratory plasticity
- Molecular and physiological strategies of habitat adaptation in molluscs

For each scientific session and special sessions, renowned scientists were invited who will present an opening lecture. These scientists are:

- Coen M. Adema, Univ. of New Mexico, USA
- Lars Tomanek, California Polytechnic State Univ., USA
- Roy Weber, University of Aarhus, Denmark
- Dave Spurgeon, Population, Molecular and Community Ecology Centre for Ecology & Hydrology, Wallingford, UK
- William R. Driedzic, Memorial University of Newfoundland, Canada
- Nicholas S. Foulkes, Univ. of Heidelberg, Germany
- Stuart Egginton, University of Birmingham, UK
- Christine Coustau, CNRS Sophia Antipolis, France

ESCPB^{new} matters: To drive forth the re-vitalization of the ESCPB^{new} society, a general assembly will be held at which the new ESCPB board members will be elected, and some other important decisions will be taken.

- ESCPB^{new} general assembly (congress venue):
Tuesday, September 8th, 16.45 – 18.30 h.

In order to also provide a little bit of cultural atmosphere to our congress guests during their stay in Innsbruck, the local organizing committee has arranged a social program. This will include:

- A welcome party at the congress venue: Sunday, September 6th, 18.00 h.
- Visit of the Ambras Castle museum followed by an Ambras Castle Snack Party:
Monday, September 7th
Bus transfer to Ambras castle (starting from the congress venue): 16.45 h;
Guided Museum visit: 17.00 – 18.00 h;
Castle Snack Party: 18.00 – 20.00 h.
- Guided city tour on the way from the congress venue to the Hilton Hotel:
Tuesday, September 8th, 18.30 – 19.30 h.
- Congress Dinner at the Hilton Hotel of Innsbruck:
Tuesday, September 8th, 19.30 – 22.30 h.

Participation to all social activities is included in the congress fees (with the exception of one-day registrations, which will allow participation to social activities of the respective day only).

Congress Venue:

SOWI-Faculty, University of Innsbruck
Universitätsstraße 1, A-6020 Innsbruck, Austria

*Reinhard Dallinger
on behalf of the Scientific and Organizing Committees of the 26th ESCPB^{new} Congress*

ORGANIZATION

Congress Organizer

Reinhard DALLINGER, Institute of Zoology, University of Innsbruck, Austria

Scientific Committee

Reinhard DALLINGER, Univ. of Innsbruck, Austria

Gudrun DE BOECK, Univ. of Antwerp, Belgium

Elena FABBRI, Univ. of Bologna, Italy

Heinz-R. KÖHLER, Univ. of Tübingen, Germany

Bernhard LIEB, Univ. of Mainz, Germany

Jean-Charles MASSABUAU, Univ. of Bordeaux, France

Bernd PELSTER, Univ. of Innsbruck, Austria

Stephen STÜRZENBAUM, King's College, London, UK

Aldo VIARENGO, Univ. of Piemonte Orientale, Italy

Local Organizing Committee (all: Institute of Zoology, University of Innsbruck)

Reinhard DALLINGER

Margit EGG

Martina HÖCKNER

Renate KOPP

Louise KÖBLITZ

Peter LADURNER

Bernd PELSTER

Adolf SANDBICHLER

Dietmar SCHULER

Thorsten SCHWERTE

Secretariat

Reinhard DALLINGER, Institute of Zoology, University of Innsbruck, Austria

PROGRAMME: OVERVIEW

Sunday, September 6th

- 14.00 – 18.00 Registration
18.00 – 20.30 Welcome Party at the Congress Venue

Monday, September 7th

- 9.00 – 9.30 Opening Ceremony of the 26th ESCPB^{new} Congress
9.30 – 10.00 Session 1: **Environmental stimuli and their impact on cellular homeostasis and gene regulation**
Session Opening Lecture (*Introduced by S. Stürzenbaum*):
“*Biomphalaria glabrata (Gastropoda, Mollusca) responses to immune challenges, a genomics perspective*”
by C. M. ADEMA and E.S. LOKER (University of New Mexico, USA)
10.00 – 11.00 Oral Communications: **Environmental stimuli and their impact on cellular homeostasis and gene regulation**
(*Chairpersons: S. Stürzenbaum, C. M. Adema*)
11.00 – 11.30 Coffee Break
11.30 – 12.00 Session 2: **Temperature and oxygen as modulatory factors of physiological processes from genes to cells**
Session Opening Lecture (*Introduced by R. Dallinger*):
“*The proteomic response of marine model and non-model organisms to thermal and oxidative stress*”
by L. TOMANEK (California Polytechnic State University, USA)
12.00 – 12.50 Oral Communications: **Temperature and oxygen as modulatory factors of physiological processes from genes to cells**
(*Chairpersons: R. Dallinger, L. Tomanek*)
13.00 – 14.00 Lunch
14.00 – 15.00 Poster Session

PROGRAMME: OVERVIEW

- 15.00 – 15.30 Session 3: **Respiratory Proteins: expression, structure, function, and evolution**
Session Opening Lecture (*Introduced by B. Lieb*):
“Adaptations in O₂ transporting proteins to exogenous and endogenous factors, with special reference to temperature as “neglected allosteric factor”
by R. WEBER, (University of Aarhus, Denmark), K.L. CAMPBELL
(University of Manitoba, Winnipeg, Canada)
- 15.30 – 16.00 Coffe Break
- 16.00 – 16.40 Oral Communications: **Respiratory Proteins: expression, structure, function, and evolution**
(*Chairpersons: B. Lieb, R. Weber*)
- 16.45 – 17.00 Bus transfer to Ambras Castle
- 17.00 – 18.00 Guided visit to Ambras Castle museum
- 18.00 – 20.00 Ambras Castle Snack Party

Tuesday, September 8th

- 8.30 – 9.00 Session 4: **Metals, toxicants and toxicant mixtures: effects at the cellular, transcriptomic, proteomic and metabolomic levels**
Session Opening Lecture (*Introduced by S. Stürzenbaum*):
“Mixture toxicity from patterns to mechanisms”
by D. SPURGEON (Population, Molecular and Community Ecology Centre for Ecology & Hydrology, Wallingford, UK)
- 9.00 – 10.30 Oral Communications: **Metals, toxicants and toxicant mixtures: effects at the cellular, transcriptomic, proteomic and metabolomic levels**
(*Chairpersons: G. De Boeck, S. Stürzenbaum*)
- 10.30 – 11.00 Coffee Break

PROGRAMME: OVERVIEW

- 11.00 – 11.50 Oral Communications: **Metals, toxicants and toxicant mixtures: effects at the cellular, transcriptomic, proteomic and metabolomic levels**
(Chairpersons: G.De Boeck, D. Spurgeon)
- 11.50 – 12.20 Special Topic Session 1: **Extrinsic modulators and cardio-respiratory plasticity**
Session Opening Lecture (Introduced by T. Schwerte):
“The influence of environmental temperature and phylogeny on cardio-respiratory control in fishes”
by S. EGGINTON (University of Birmingham, UK)
- 12.20 – 13.00 Oral Communications: **Extrinsic modulators and cardio-respiratory plasticity**
(Chairpersons: T. Schwerte, S. Egginton)
- 13.00 – 14.00 Lunch
- 14.00 – 15.00 Poster Session
- 15.00 – 15.30 Session 6: **Interaction between major cellular signalling pathways**
Session Opening Lecture (Introduced by B. Pelster):
“Cellular signaling and time: links between light, clocks and the cell cycle”
by P. MRACEK, N. CAVALLARI, K. LAHIRI, S. RADEVA,
D. VALLONE, N.S. FOULKES (Forschungszentrum Karlsruhe, Eggenstein-Leopoldshafen, Germany)
- 15.30 – 16.00 Coffee Break
- 16.00 – 16.40 Oral Communications: **Interaction between major cellular signalling pathways**
(Chairpersons: B. Pelster, N.S. Foulkes)
- 16.45 – 18.30 **ESCPB^{new}: General Assembly**
- 18.30 – 19.30 Guided City Tour on the way to the Hilton Hotel of Innsbruck
- 19.30 – 22.30 Congress Social Dinner

PROGRAMME: OVERVIEW

Wednesday, September 9th

- 8.30 – 9.00 Special Topic Session 2: **Molecular and physiological strategies of habitat adaptation in molluscs**
Session Opening Lecture (*Introduced by R. Dallinger*):
“Adaptation of *Biomphalaria glabrata* to foreign invaders”
by C. COUSTAU (CNRS-INRA, Centre Agrobiotech, Sophia-Antipolis, France), A. BAEZA-GARCIA (Institut Pasteur, Lille, France),
B. GOURBAL, A. THÈRON (CNRS, UPDV, Perpignan, France)
- 9.00 – 10.15 Oral Communications: **Molecular and physiological strategies of habitat adaptation in molluscs**
(*Chairpersons: R. Dallinger, C. Coustau*)
- 10.15 – 10.45 Coffee Break
- 10.45 – 11.15 Session 5: **The role of stress in organismic performance, development and evolution**
Session Opening Lecture (*Introduced by E. Fabbri*):
“Low temperature stress results in glycerol accumulation: function and metabolism”
by W.R. DRIEDZIC (Memorial University of Newfoundland, Canada), K. V. EWART (Institute of Marine Bioscience, Halifax, Canada)
- 11.15 – 13.00 Oral Communications: **The role of stress in organism performance, development and evolution**
(*Chairpersons: E. Fabbri, W.R. Driedzic*)
- 13.00 -13.30 Closing Ceremony

DAILY PROGRAMME: Sunday, Monday

Sunday, September 6th

- 14.00 – 18.00 Registration
18.00 – 20.30 Welcome Party at the Congress Venue

Monday, September 7th

- 9.00 – 9.30 Opening Ceremony of the 26th ESCPB^{new} Congress
- 9.30 – 10.00 Session 1: **Environmental stimuli and their impact on cellular homeostasis and gene regulation**
Session Opening Lecture (*Introduced by S. Stürzenbaum*):
“*Biomphalaria glabrata* (Gastropoda, Mollusca) responses to immune challenges, a genomics perspective”
by C. M. ADEMA and E.S. LOKER (University of New Mexico, USA)
- 10.00 – 11.00 Oral Communications: **Environmental stimuli and their impact on cellular homeostasis and gene regulation**
(*Chairpersons: S. Stürzenbaum, C. M. Adema*)
- Aquaporins in a challenging aquatic environment: Genomic and functional analysis of the zebrafish aquaporin superfamily.**
A. TINGAUD-SEQUEIRA, M. CALUSINSKA, F. CHAUVIGNÉ, J. CERDÀ, R.N. FINN, J. LOZANO.
Implication of cortisol/glucocorticoid receptor in the immune response after an acute stress in Eurasian perch. S. MILLA, C. MATHIEU, S. LAMBERT, J. DOUXFILS, P. KESTEMONT.
Transcriptome profiling of the gills of a euryhaline teleost fish, *Tetraodon nigroviridis*, in response to altered calcium concentrations in water.
P.I.S. PINTO, D.M. POWER, A.V.M. CANÁRIO, M.A.S. THORNE, R. REINHARDT, H. MATSUMURA, R. TERAUCHI.
Gene expression of the gill epithelium in three salmon (*Salmo salar*) stocks migrating to freshwater, brackish water or full-strength seawater.
M. VORNANEN, J. LEMMETYINEN, J. PIIRONEN, P. KIISKINEN.
Seasonal variations in metabolism and cellular stress response in the white muscle of the gilthead sea bream (*Sparus aurata*).
K. FEIDANTSIS, H.O. PÖRTNER, A. LAZOU, E. ANTONOPOULOU, B. MICHAELIDIS.
- 11.00 – 11.30 Coffee Break
- 11.30 – 12.00 Session 2: **Temperature and oxygen as modulatory factors of physiological processes from genes to cells**
Session Opening Lecture (*Introduced by R. Dallinger*):
“The proteomic response of marine model and non-model organisms to thermal and oxidative stress”
by L. TOMANEK (California Polytechnic State University, USA)

DAILY PROGRAMME: Monday

- 12.00 – 12.50 Oral Communications: **Temperature and oxygen as modulatory factors of physiological processes from genes to cells**
(Chairpersons: R. Dallinger, L. Tomanek)
- The role of the lactate dehydrogenase of *Daphnia magna* and *Daphnia pulex* for the tolerance of elevated temperatures.** B. ZEIS, I. BUERS, T. MORAWE, R.J. PAUL.
- Field study of the molecular and metabolic responses of the bivalve *Modiolus barbatus*.** M. KATSIKATSOU, H.O. PÖRTNER, B. MICHAELIDIS.
- Evidence for close relationship between anaerobic metabolism and Heat Shock Response (HSR) in the marine bivalve *Mytilus galloprovincialis*.** A. ANESTIS, H.O. PÖRTNER, B. MICHAELIDIS.
- Ambient temperature during pregnancy entails short-term and long-term effects on cortisol levels in mother and offspring Guinea pigs.** C.L. MICHEL, X. BONNET, O. CHASTEL.
- 13.00 – 14.00 Lunch
- 14.00 – 15.00 Poster Session 1: **Environmental stimuli and their impact on cellular homeostasis and gene regulation**
- P1 Reactive oxygen species (ROS) and redox buffers as an interface between stress sensing, signalling and physiological responses in *Daphnia magna*.** D. BECKER, B. BRINKMANN, B. BUDEUS, U. SCHNELL, S. ZUMBRÄGEL, B. ZEIS, R.J. PAUL.
- P2 Comparative analysis of Heat shock proteins and thermoresistance in stenothermal insects from caves and cold streams.** P. BERNABÒ, O. JOUSSON, L. LATELLA, J.L. MARTÍNEZ-GUITARTE, L. REBECCHI, V. LENCIONI.
- P3 The modulation of gene expressions in the prophenoloxidase activating system proteins of tiger shrimp *Penaeus mondon* subjected to salinity and temperature stimuli.** Y.-C. LIN, C.-F. KO, T.-T. CHIOU, F.-I. WANG, J.-C. CHEN.
- P4 Effects of stress in the specific activity of G6PDH and gene expression in *Sparus aurata*.** M. FURNÉ, S. MANZANO, C. VALDERRAMA, C. TRENZADO, A. SANZ, M. JAMILENA, M.J. SÁNCHEZ-MUROS.
- P5 The effects of chemical and handle stress in oxidative stress of liver and body performance of *Sparus aurata*.** M.J. SÁNCHEZ-MUROS, M. FURNÉ, S. VILLARECES, F. GARCÍA-BARROSSO.
- P6 Metal-dependent transcription of Metallothionein Isoform genes in the terrestrial snail *Cantareus aspersus*.** M. HÖCKNER, D. SCHULER, K. STEFANON, R. FANTUR, A. DE VAUFLEURY, R. DALLINGER.
- P7 Rhythms of gene expression in mussel *Mytilus galloprovincialis* during an annual cycle.** A. NEGRI, A. VIARENGO, F. DONDERO, M. BANNI, F. MIGNONE.
- P8 Xenobiotic detoxification in Australian marsupials – An overview.** S.N.T. NGO, I. STUPANS, R.A. MCKINNON.
- P9 Characterization and expression analysis of bacteria challenged calmodulin homologue in disk abalone.** C. NIKAPITIYA, J. LEE.

DAILY PROGRAMME: Monday

- P10** Expression profiling of antioxidant and selected immune genes in the gill of disk abalone against thermal, low-salinity and hypoxic stresses. M. DE ZOYSA, J. LEE.
Poster Session 2: Temperature and oxygen as modulatory factors of physiological processes from genes to cells
- P11** Temperature dependent regulation of cardiac excitability by sarcolemmal potassium currents in fish. M. HASSINEN, V. PAAJANEN, J. HAVERINEN, M. VORNANEN.
- P12** Effect of temperature acclimation on sarcoplasmic reticulum calcium content in atrial and ventricular myocytes of the fish heart. J. HAVERINEN, M. VORNANEN.
Poster Session 3: Respiratory Proteins: expression, structure, function, and evolution
- P13** Differential haemoglobin expression in *Daphnia pulex* as a response to oxygen and temperature-related stress. P. GERKE, C. BÖRDING, B. ZEIS, R.J. PAUL.
- P14** Effects of temperature and CO₂ on relative haemocyanin expression of the common cuttlefish *Sepia officinalis*. A. STROBEL, B. LIEB, M. LUCASSEN, F. MELZNER, H.O. PÖRTNER, F.C. MARK.
Poster Session 4: Metals, toxicants and toxicant mixtures: effects at the cellular, transcriptomic, proteomic and metabolomic levels.
- P15** Effect of chemical pollutants on F-actin cytoskeleton in earthworm coelomocytes. A. CALISI, M.G. LIONETTO, T. SCHETTINO.
- P16** Sub-lethal cadmium toxicity in bullhead *Cottus gobio*. Biochemical and proteomic approaches. J. DORTS, P. KESTEMONT, M. DIEU, M. RAES, F. SILVESTRE.
- P17** Histopathological effects of environmental pollution in mussels monitored along the Basque Coast. A. JIMENO-ROMERO, M. SOTO, I. MARIGÓMEZ, M.P. CAJARAVILLE.
- P18** The analysis of interleukin-17 genes in Japanese pufferfish, *Takifugu rubripes*. T. KONO, H. KORENAGA, M. SAKAI.
- P19** Platinum-induced internalization of shell formation in snails. L. MARSCHNER, R. OSTERAUER, O. BETZ, M. GERBERDING, P. CLOETENS, B. SURES, R. TRIEBSKORN, H.-R. KÖHLER.
- P20** Modulation of telomeric RNA expression by Bisphenol A and Cadmium in *Chironomus riparius* (Diptera). J.L. MARTINEZ-GUITARTE, R. PLANELLÓ, G. MORCILLO.
- P21** Peptide cyanobacterial hepatotoxins are modified by the immobilization of both monomeric and prepolymeric molecules to alter their toxicity. T.A.M. MSAGATI.
- P22** Protein expression profile of *Mytilus galloprovincialis* haemolymph and its modifications following exposure to heavy metals. L. PERIĆ, L. BOATTI, F. MARSANO, A. VIARENGO.
- P23** Development of a molecular biomarker system using proteomics on lymphocyte culture to assess the use of drugs and chemicals in *Pangasianodon hypophthalmus* aquaculture. M.-A. PIERRARD, P. KESTEMONT, F. SILVESTRE.

DAILY PROGRAMME: Monday

- P24** Characterization and expression analysis of type I interferon in common carp *Cyprinus carpio* L. Y. KITAO, T. KONO, M. SAKAI.
- P25** The chicken embryo as a model organism for detection of potential endocrine disruptors. J. SCHEIDER, J. OEHLMANN.
- P26** Cellular level effects of metal toxicity on gills and liver of fishes. R. SRIVASTAVA (Sinha), S.M. SRIVASTAVA, R. ABIDI, M.K. DAS.
- P27** The fatty acid profiles of polar and neutral lipids from enterocytes and hepatocytes of gilthead seabream (*Sparus aurata*) cultured at two salinities: A chemometrics approach. J.C. NAVARRO, M.J. PÉREZ, N.G. ACOSTA, E. VICIANO, I. VARÓ, R. UREÑA, A. TORREBLANCA, C. RODRÍGUEZ.
- P28** Effect of different hydrothermal vent conditions in the proteome of vent mussel *Bathymodiolus azoricus*. R. COMPANY, A. SERAFIM, M.J. BEBIANNO, M. CAJARAVILLE, O. ANTÚNEZ, A. TORREBLANCA.
- P29** A systems biology approach to the effects of cadmium exposure via water in zebrafish (*Danio rerio*). D. BENOOT, L. VERGAUWEN, D. KNAPEN, R. BLUST.
- P30** Modulation of BCL-2 gene expression in leukaemia cell line after treatment with a toxin isolated from Bothrops snake venom. G.A. ANTONUCCI, R. DEMELO ALVES, A.C.O. CINTRA, J.J. FRANCO, R.F. FIGUEIREDO, A.F. FERREIRA, F.A. DE CASTRO, A.M. SOARES, S.V. SAMPAIO.
- P31** Cadmium, lead and metallothionein contents in tissues of the sea bream *Sparus aurata* from three different fish farming systems. R. MARTIGNAGO, F. TRINCHELLA, R. SCUDIERO, P. CRETÌ.
- P32** Toxicity of crude venom from the Scyphozoan *Pelagia noctiluca*. A. MARINO, R. MORABITO, G. LA SPADA.
- P33** Effects of cadmium on retinal development in lizard embryo: A molecular and morphological study. P. SIMONIELLO, F. TRINCHELLA, L. BORRELLI, R. DE STASIO, C.M. MOTTA, S. FILOSA, R. SCUDIERO.
- P34** Differential spatial expression of metal responsive transcription factor MTF-1 is related to functional organization of pituitary cells in *Cyprinus carpio*. G. KAUSEL, A. MUÑOZ, Y. HORNING, M. CORTES, M. NAVARRO, T. VERA, A. ROMERO, J. FIGUEROA.
- P35** Metallothionein fails to protect lizard embryos from cadmium neurotoxicity. P. SIMONIELLO, F. TRINCHELLA, C.M. MOTTA, S. FILOSA, R. SCUDIERO.
- 15.00 – 15.30 Session 3: **Respiratory Proteins: expression, structure, function, and evolution**
Session Opening Lecture (Introduced by B. Lieb):
“Adaptations in O₂ transporting proteins to exogenous and endogenous factors, with special reference to temperature as neglected allosteric factor”
by R. WEBER, (University of Aarhus, Denmark), K.L. CAMPBELL (University of Manitoba, Winnipeg, Canada)
- 15.30 – 16.00 Coffee Break

DAILY PROGRAMME: Monday, Tuesday

- 16.00 – 16.40 Oral Communications: **Respiratory Proteins: expression, structure, function, and evolution**
(Chairpersons: *B. Lieb, R. Weber*)
Molluscan hemocyanins: News and views. *B. LIEB, J. MARKL.*
Recombinant expression of gastropod (*Biomphalaria glabrata*) haemoglobin. *V. MOELLER, B. LIEB, R. DÜRR, W. GEBAUER, N. HELLMANN, J. MARKL.*
Breathing new life into old blood: Cold-adaptive evolution of woolly mammoth haemoglobin. *K.L. CAMPBELL, J. ROBERTS, J. STETEFELD, A. SLOAN, A. SIGNORE, J. HOWATT, J. TAME, N. ROHLAND, M. HOFREITER, T.-J. SHEN, C. HO, L. WATSON, J. AUSTIN, A. COOPER R.E. WEBER.*
- 16.45 – 17.00 Bus transfer to Ambras Castle
- 17.00 – 18.00 Guided visit to Ambras Castle museum
- 18.00 – 20.00 Ambras Castle Snack Party

Tuesday, September 8th

- 8.30 – 9.00 Session 4: **Metals, toxicants and toxicant mixtures: effects at the cellular, transcriptomic, proteomic and metabolomic levels**
Session Opening Lecture (*Introduced by S. Stürzenbaum*):
“Mixture toxicity from patterns to mechanisms”
by *D. SPURGEON* (Population, Molecular and Community Ecology Centre for Ecology & Hydrology, Wallingford, UK)
- 9.00 – 10.30 Oral Communications: **Metals, toxicants and toxicant mixtures: effects at the cellular, transcriptomic, proteomic and metabolomic levels**
(Chairpersons: *G. De Boeck, S. Stürzenbaum*)
Environmental proteomics in the social amoeba *Dictyostelium discoideum*. *L. BOATTI, F. MARSANO, A. NEGRI, F. DONDERO, A. VIARENGO.*
Transcriptional and physiological responses of wild yellow perch under chronic exposure to metals. *P. COUTURE, P.G.C. CAMPBELL, F. PIERRON, L. BERNATCHEZ.*
Metal accumulation and metallothionein induction in the spotted dogfish *Scyliorhinus canicula*. *G. DE BOECK, M. EYCKMANS, I. LARDON, R. BOBBAERS, A.K. SINHA, R. BLUST.*
Active biomonitoring of a polluted harbour using gene expression profiles in caged sentinel thicklip gey mullets (*Chelon labrosus*). *O. DÍAZ DE CERIO, M.P. CAJARAVILLE, G. DÍEZ, I. CANCIO.*
Effects of the beta-blocker propranolol on health status and gene regulation in the mussel, *Mytilus galloprovincialis*. *E. FABBRI, S. FRANZELLITTI, A. CAPUZZO.*

DAILY PROGRAMME: Tuesday

- Closing the gap between transcriptomics and physiology.**
D. KNAPEN, R. BLUST.
- Metal-induced death in fish cells: Signalling pathways and mechanisms.** G. KRUMSCHNABEL, C. MANZL, H.L. EBNER.
- 10.30 – 11.00 Coffee Break
- 11.00 – 11.50 Oral Communications, continued: **Metals, toxicants and toxicant mixtures: effects at the cellular, transcriptomic, proteomic and metabolomic levels**
(Chairpersons: G. De Boeck, D. Spurgeon)
- Biomphalaria glabrata* embryonic cells as a model system for toxicological and molecular studies of stress-induced expression of metallothionein genes.** D. SCHULER, M. HÖCKNER, A. PRADER, R. DALLINGER.
- Simulation of moderated, severe metal pollution and remediation scenarios using ex situ transplant experiments with real soils: Effects on mortality, growth, and cell and tissue-level biomarkers in slugs *Arion ater*.** A.M. CASTILLA, B. ZALDIBAR, I. MARIGÓMEZ, M. SOTO.
- Characterization of *Caenorhabditis elegans* metallothioneins: Genomics, metabolomics and XAFS.** S.R. STÜRZENBAUM, S.M. ZEITOUNGHANDOUR, M. HODSON, J.M. CHARNOCK, J.G. BUNDY, E.J. WANT, S. HUGHES, S.C. SWAIN.
- Real-time RT-QPCR integration in soil quality assessment.**
M.E. DE BOER, D. ROELOFS, N.M. VAN STRAALEN.
- 11.50 – 12.20 Special Topic Session 1: **Extrinsic modulators and cardio-respiratory plasticity**
Session Opening Lecture (Introduced by T. Schwerte):
“The influence of environmental temperature and phylogeny on cardio-respiratory control in fishes”
by S. EGGINTON (University of Birmingham, UK)
- 12.20 – 13.00 Oral Communications: **Extrinsic modulators and cardio-respiratory plasticity**
(Chairpersons: T. Schwerte, S. Egginton)
- Hypoxic adaptation of the cardio-respiratory system in the millimetre sized model zebrafish (*Danio rerio*).** T. SCHWERTE, N. YAQOUB, M. HOLOTTA, C. PREM.
- New insights into the avian heart functioning.** V. PROSHEVA, T. SHKLYAR, F. BLYAKHMAN.
- Effects of salinity acclimation on the proteome of the gilthead seabream (*Sparus aurata*) heart.** I. VARÓ, J. DEL RAMO, A. TORREBLANCA, L. CANTERO, M.M. SÁNCHEZ DEL PINO.
- 13.00 – 14.00 Lunch

DAILY PROGRAMME: Tuesday

- 14.00 – 15.00 **Poster Session 5: The role of stress in organismic performance, development and evolution.**
- P36** **Mammalian steroid stress hormone metabolites masculinize external sex characteristics in fish.** B. GRILLITSCH, D. ALTMANN, M. SCHABUSS, I. SOMMERFELD-STUR, E. MOESTL.
- P37** **Hypothalamic arginine, vasotocin and isotocin are involved in stress response in fish.** E. KULCZYKOWSKA, M. GOZDOWSKA, H. KALAMARZ, A. KLESZCZYŃSKA, M. NIETRZEBA, G. MARTINEZ-RODRIGUEZ, J.M.MANCERA.
- P38** **Effects of intertidal exposure in mussel lysosomes.** V. MOSCHINO, L. DA ROS.
- P39** **Muscular biomarker responses in several marine fish species from the NW Mediterranean and their relationship with ecological markers.** M. SOLÉ, M. BAENA, S. ARNAU, M. CARRASSON, F. MAYNOU, J. CARTES.
- P40** **The influence of different stress-related signalling cascades on fitness parameters of *Caenorhabditis elegans*.** A. MERTENSKÖTTER, P. GERKE, T. JANOWITZ, R.J. PAUL.
- P41** **Discernment of temporal and spatial components in the environmental effect on zebra mussel *Dreissena polymorpha* by using a set of biochemical markers.** H. FALFUSHYNSKA, L. GNATYSHYNA, O. STOLIAR, A. GEFFARD.
- Poster Session 6: **Interaction between major cellular signalling pathways**
- P42** **Cortisol-dependent remodelling of tight junction claudin 28b and cortical F-actin in cultured gill epithelia of rainbow trout.** A.M. SANDBICHLER, T. SCHWERTE, B. PELSTER.
- P43** **Regulated permeability transition pore in low conductance state in lamprey liver mitochondria.** M. SAVINA, S. KOROTKOV, L. EMELYANOVA, I. BRAILOVSKAYA, S. KONOVALOVA, I. ZUBATKINA, A. NADEEV.
- P44** **Biochemical and physiological study of *Bothrops jararaca* antithrombin and comparison with other animal antithrombins.** K. MORAIS-ZANI, A.M. TANAKA-AZEVEDO.
- Special Topic Poster Session 2: **Molecular and physiological strategies of habitat adaptation in molluscs**
- P45** **Acclimation to detrital diets in the cockle *Cerastoderma edule*.** U. ARAMBALZA, I. IBARROLA, M.B. URRUTIA.
- P46** **Variations through their life-cycle in the responsiveness of cell and tissue-level biomarkers in the digestive gland of slugs subjected to chronic metal pollution.** B. ZALDIBAR, A.M. CASTILLA, E. ANGULO, M. SOTO, I. MARIGÓMEZ.

DAILY PROGRAMME: Tuesday

Poster Session: **Other Subjects.**

- P47** **Effects of arginine and/or lysine diet supplementation on nitrogen excretion in zebrafish.** D. IACCARINO, E. ULIANO, C. AGNISOLA.
- P48** **DARENET: A novel technological platform to promote the use of zebrafish model.** M.A. PARDO, S. RAINIERI, A. MURIANA, C. CALLOL, J.L. GÓMEZ, E. DÍAZ, M.L. CAYUELA, A. FIGUERAS, I.G. FERNÁNDEZ DE MERA, R.E. RODRÍGUEZ, A. BARRALLO, J. COLL, J.S. BURGOS, J.M. CABALLERO, J.A. MONTERO, V. MULERO, M.P. CAJARAVILLE, B. ALSINA, J.F. RODRÍGUEZ, E. SELA.
- P49** **Expression profiling of antioxidant enzymes in the gill of disk abalone after viral hemorrhagic septicemia virus (VHSV) infection.** M. DE ZOYSA, J. LEE.
- P50** **Purification of *Bothrops jararaca* antithrombin from the discarded supernatant of fibrinogen isolation.** K. MORAIS-ZANI, A. S. TANAKA, A. M. TANAKA-AZEVEDO.

15.00 – 15.30 Session 6: **Interaction between major cellular signalling pathways**
Session Opening Lecture (*Introduced by B. Pelster*):
“Cellular signaling and time: links between light, clocks and the cell cycle”
by P. MRACEK, N. CAVALLARI, K. LAHIRI, S. RADEVA,
D. VALLONE, N.S. FOULKES (Forschungszentrum Karlsruhe,
Eggenstein-Leopoldshafen, Germany)

15.30 – 16.00 Coffee Break

16.00 – 16.40 Oral Communications: **Interaction between major cellular signalling pathways**
(*Chairpersons: B. Pelster, N.S. Foulkes*)

Clock genes establish a connection between heart performance and development. R. KOPP, B. PELSTER.

The role of insulin-like signalling in the response to stress of the nematode *Caenorhabditis elegans*. T. JANOWITZ, M. WOLF, F. NUNES, A. HENKEL, A. HEINICK, R.J. PAUL.

Comparative analysis of P receptor-mediated induction of regulatory volume decrease in cells from teleosts and mammals.

C.L. ALVAREZ, M.V. ESPELT, D.E. PAFUNDO, G. KRUMSCHNABEL, P. J. SCHWARZBAUM.

16.45 – 18.30 **ESCPB^{new}: General Assembly**

18.30 – 19.30 Guided City Tour on the way to the Hilton Hotel of Innsbruck

19.30 – 22.30 Congress Social Dinner

DAILY PROGRAMME: Wednesday

Wednesday, September 9th

- 8.30 – 9.00 **Special Topic Session 2: Molecular and physiological strategies of habitat adaptation in molluscs**
Session Opening Lecture (*Introduced by R. Dallinger*):
“Adaptation of *Biomphalaria glabrata* to foreign invaders”
by C. COUSTAU (CNRS-INRA, Centre Agrobiotech, Sophia-Antipolis, France), A. BAEZA-GARCIA, B. (Institut Pasteur, Lille, France), GOURBAL A., THÉRON (CNRS, UPDV, Perpignan, France)
- 9.00 – 10.15 **Oral Communications: Molecular and physiological strategies of habitat adaptation in molluscs**
(*Chairpersons: R. Dallinger, C. Coustau*)
Molecular adaptation to cope with environmental stress of terrestrial gastropod Cadmium-Metallothioneins: High metal specificity at the protein level combines with multifunctionality of genes. R. DALLINGER, M. EGG, M. HÖCKNER, D. SCHULER, S. ATRIAN, M. CAPDEVILA.
Antarctic octopod haemocyanin — Does form follow function? F.C. MARK, B. LIEB.
The gene expression of the *Potamopyrgus antipodarum* estrogen receptor under estrogenic exposure. D. STANGE, R. HORRES, J. OEHLMANN.
Immune responses induced by cadmium in *Mytilus galloprovincialis* haemocytes. S. KOUTSOGIANNAKI, M. KALOYIANNI.
Seasonal metabolic and activity pattern in the land snail *Faustina trizona olympica*. G.K. TACHTATZIS, A. STAIKOU, B. MICHAELIDIS.
Alteration in the status of glutathione transferase of the water snail, *Bulinus globosus*, during aestivation and recovery. I. O. ADEWALE, Y. A. OJOPAGOGO.
- 10.15 – 10.45 Coffee Break
- 10.45 – 11.15 **Session 5: The role of stress in organismic performance, development and evolution**
Session Opening Lecture (*Introduced by E. Fabbri*):
“Low temperature stress results in glycerol accumulation: function and metabolism”
by W.R. DRIEDZIC (Memorial University of Newfoundland, Canada), K. V. EWART (Institute of Marine Bioscience, Halifax, Canada)
- 11.15 – 13.00 **Oral Communications: The role of stress in organism performance, development and evolution**
(*Chairpersons: E. Fabbri, W.R. Driedzic*)
Toxicity prediction of chloro-substituted anilines versus acute and chronic toxicity testing in *Daphnia magna*. N. DOM, D. KNAPEN, W.DE COEN, R. BLUST.

DAILY PROGRAMME: Wednesday

Differing transcription patterns of Cd-Metallothionein genes in two terrestrial gastropod species are related to divergences in promoter structure and function. M. HÖCKNER, K. STEFANON, D. SCHULER, R. FANTUR, A. DE VAUFLEURY, R. DALLINGER.

Steroid acyltransferases regulate endogenous levels of testosterone and estradiol in the marine mussel *Mytilus galloprovincialis*. D. FERNANDES, C. PORTE, C. RIVA, S. BORDONALI.

Use of an Expert System for biomarkers' data integration to assess the level of stress syndrome in *Eisenia andrei* exposed to dioxin-spiked soils.

S. SFORZINI, A. DAGNINO, I. SAGGESE, A. NEGRI, C. BOLOGNESI, A. VIARENGO.

The thermal acclimation response in zebrafish: A study on the physiological, biochemical and gene expression level. L. VERGAUWEN, D. KNAPEN, G. DE BOECK, R. BLUST.

Effect of water emersion stressor on stress physiology, immunity and protein expression profiles in Eurasian perch (*Perca fluviatilis* L.) juveniles under domestication process.

J. DOUXFILS, S. LAMBERT, S. MILLA, E. HENROTTE, N. WANG, C. MATHIEU, R. MANDIKI, F. SILVESTRE, P. KESTEMONT, M. VANDECAN, C. MÉLARD, E. DELAIVE, M. DIEU, M. RAES.

Cloning and characterization of cortisol receptor from *Salmo salar* and analyses of its role in fish leukocytes. C. ALVAREZ, C. ROJAS, R. MANRÍQUEZ, G. KAUSEL, J. FIGUEROA, R. ENRÍQUEZ, M. MONRAS, A. ROMERO.

Factors affecting critical swimming speed (Ucrit) in zebrafish: A preliminary study. E. ULIANO, F. CUCCARO, S. GALBANO, C. AGNISOLA.

13.00 -13.30

Closing Ceremony

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