



Società Italiana di
Immunobiologia Comparata
e dello Sviluppo



UNIMORE
UNIVERSITÀ DEGLI STUDI DI
MODENA E REGGIO EMILIA



Dipartimento di Scienze della Vita

Sede di Modena

Via Giuseppe Campi, 183
41125 - Modena, Italia
T +39 059 2055170 · 2055529 · 2055014
F +39 059 2055700

Sede di Reggio Emilia

Via Amendola 2
42122 - Reggio Emilia, Italia
T +39 0522 522036/ 67 · F +39 0522 522053

PROGRAM

XXIV Meeting of the Italian Association of Developmental and Comparative Immunobiology (IADCI)

February 14th - 16th, 2024

Accademia Nazionale di Scienze, Lettere e Arti di Modena (Modena, Italy)

Organizing Committee

DAVIDE MALAGOLI^{1,2}
NICOLA FRANCHI¹
MAURO MANDRIOLI^{1,2}
LORENA REBECCHI^{1,2}
SANDRO SACCHI¹

¹*Department of Life Sciences, University of Modena and Reggio Emilia, Modena, Italy*

²*NBFC, National Biodiversity Future Center, Palermo, Italy*

Wednesday, February 14th, 2024

13:00 - 14:00 Registration

14:00 - 14:30 Opening of the Congress and Welcome address

Session I.1: Immunotoxicological and eco-immunological impact of xenobiotics and climate change on animal biodiversity

Chair: Laura Canesi (University of Genoa, Italy) and Simona Picchietti (University of Tuscia, Italy)

14:30 - 15:30 V Matozzo

Lecture: Ecoimmunology in a changing world

Department of Biology, University of Padua, Padua Italy

15:30 - 16:00 Coffee break

16:00 - 16:15 L Bisanti^{1,2}, C La Corte^{1,2}, M Dara^{1,2}, F Bertini^{1,2}, MG Parisi^{1,2}, D Parrinello^{1,2}, R Chemello^{1,2}, M Cammarata^{1,2}

Warmer seawater affects the immune activities of thermophilic coral *Astroides calyculiris* under LPS challenge

¹*Department of Earth and Marine Sciences, University of Palermo, Palermo, Italy*

²*NBFC, National Biodiversity Future Center, Palermo, Italy*

16:15 - 16:30 E Piva¹, S Schumann¹, S Pacchini¹, V Stoilova², C Papetti¹, P Irato¹, D Pellegrino³, G Santovito¹

Could rising seawater temperatures become a challenge for Antarctic fish? Exploring defence responses of *Trematomus bernacchii* to climate change

¹*Department of Biology, University of Padua, Padua, Italy*

²*Department of Environmental and Life Sciences, University of Karlstad, Karlstad, Sweden*

³*Department of Biology, Ecology and Earth Sciences, University of Calabria, Rende (CS), Italy*

16:30 - 16:45 A Ametrano, P Italiani, MR Coscia

Epigenetic modifications on the polymeric Ig receptor gene from the cold adapted teleost *Trematomus bernacchii*

Institute of Biochemistry and Cell Biology, National Research Council of Italy, Naples, Italy

16:45 - 17:00 N Baranzini^{1,2}, G Marcolli¹, C Bon¹, L Pulze^{1,2}, A Calisi³, F Dondero³, A Grimaldi^{1,2}

Evaluation of Per- and Polyfluoroalkyl substances (PFAS) toxic effects on the acute and chronic inflammatory response in the medicinal leech *Hirudo verbana*

¹*Department of Biotechnology and Life Sciences, University of Insubria, Varese, Italy*

²*Italian Leech Farm (ILFARM) Srl, Varese Italy*

³*Department of Science and Technological Innovation, University of Eastern Piedmont, Alessandria, Italy*

17:00 - 17:15 A Calisi, D Rotondo, D Gualandris, C Lorusso, F Dondero

Assessing apical toxicity and sublethal responses of earthworms in PFAS-contaminated soils

Department of Science and Technological Innovation, University of Eastern Piedmont, Alessandria, Italy

17:15 - 17:30 S Pacchini¹, G Vanzan¹, E Piva¹, S Schumann¹, P Irato¹, A Bottacin², A Marion², G Santovito¹
Antioxidant responses in the kidney of *Squalius cephalus* chronically exposed to PFAS in Veneto rivers

¹*Department of Biology, University of Padua, Padua, Italy*

²*Department of Industrial Engineering, University of Padua, Padua, Italy*

Thursday, February 15th, 2024

Session II Session in memory of Professor Enzo Ottaviani: Immunocyte, hemocyte and immune-related cell roles in metazoans

Chair: Loriano Ballarin (University of Padua, Italy) and Matteo Cammarata (University of Palermo, Italy)

9:00 - 9:15 D Malagoli^{1,2}

Professor Enzo Ottaviani: a pioneer in the study of the “immune-mobile brain” in invertebrates

¹Department of Life Sciences, University of Modena and Reggio Emilia, Modena, Italy

²NBFC, National Biodiversity Future Center, Palermo, Italy

9:15 - 10:15 N Franchi

History of invertebrate self/non-self recognition: from phagocytes to immunocytes

Department of Life Sciences, University of Modena and Reggio Emilia, Modena, Italy

10:15 - 10:45 Coffee break

10:45 - 11:00 L Ballarin

Stem cells and innate immunity: any relationship?

Department of Biology, University of Padua, Padua, Italy

11:00 - 11:15 C Losi¹, M Montanari¹, S Sacchi¹, D Malagoli^{1,2}

Hemolymph withdrawal transiently alters the ratio of hemocyte populations and promotes an increase in total hemocyte number in the invasive snail *Pomacea canaliculata*

¹Department of Life Sciences, University of Modena and Reggio Emilia, Modena, Italy

²NBFC, National Biodiversity Future Center, Palermo, Italy

11:15 - 11:30 F La Torre¹, C Gissi², L Manni¹

Phylogenetic analysis of the main components of the JAK/STAT pathway and their expression in the haemocytes of the colonial tunicate *Botryllus schlosseri*

¹Department of Biology, University of Padua, Padua, Italy

²Department of Biosciences, Biotechnologies and Environment, University of Bari, Bari, Italy

11:30 - 11:45 M Leonessi^{1,2}, M Auguste^{1,2}, R J Lopez⁴, C Ciacci³, C Oliveri¹, D Furones⁴, L Vezzulli^{1,2}, L Canesi^{1,2}

A potential pathogenic vibrio for *Mytilus galloprovincialis*

¹DISTAV, Dept. of Environmental, Earth and Life Sciences, University of Genoa, Genoa, Italy

²NBFC, National Biodiversity Future Center, Palermo, Italy

³Department of Biomolecular Science (DISB), University of Urbino “Carlo Bo”, Urbino (PU), Italy

⁴IRTA_Sant Carles de la Ràpita Centre, Aquaculture Program, Spain

11:45 - 12:00 J Fabrello, M Dalla Fontana, M Ciscato, V Matozzo

Haemocyte parameters in the clam *Ruditapes philippinarum* feed with BPA analogs-contaminated microalgae

Department of Biology, University of Padua, Padua, Italy

12:00 - 12:15 T Balbi^{1,2}, C Ciacci³, F Frontalini⁴, M Montanari³, G Panza³, B Canonico³, L Canesi^{1,2}

Effects and mechanisms of action of the antidepressant Fluoxetine on *Mytilus* hemocytes

¹DISTAV, Department of Environmental, Earth and Life Sciences, University of Genoa, Genoa, Italy

²NBFC, National Biodiversity Future Center, Palermo, Italy

³DiSB, Department of Biomolecular Sciences, University "Carlo Bo", Urbino (PU), Italy

⁴DISPeA, Department of Pure and Applied Sciences, Urbino University, Urbino (PU), Italy

12:15 - 12:30 G Udayan, ME Giordano, P Pagliara, MG Lionetto

Paracetamol affects the motility of *Mytilus galloprovincialis* hemocytes

Department of Biological and Environmental Sciences and Technologies, University of Salento, Lecce, Italy

12:30 - 14:00 Light Lunch

Session I.2: Immunotoxicological and eco-immunological impact of xenobiotics and climate change on animal biodiversity

Chair: Caterina Ciacci (University of Urbino "Carlo Bo", Italy) and Patrizia Pagliara (University of Salento, Italy)

14:00 - 14:15 D Melillo¹, R Marino^{1,2}, L Schembri¹, D Boraschi^{1,2,3}, P Italiani^{1,2}

Monitoring of pharmaceutical impact on marine environment through an eco-immunotoxicological approach: an "ENVIROMED" study

¹Institute of Biochemistry and Cell Biology, National Research Council of Italy, Naples, Italy

²Stazione Zoologica "Anton Dohrn", Naples, Italy

³Shenzhen Institute of Advanced Technology, Chinese Academy of Science, China

14:15 - 14:30 G De Marco, MC Eliso, M Galati, B Billè, M Terranova, T Cappello, M Maisano

Cellular pathway disturbances triggered by the anti-inflammatory dexamethasone in mussel *Mytilus galloprovincialis* under environmental scenarios

Department of Chemical, Biological, Pharmaceutical and Environmental Sciences, University of Messina, Messina, Italy

14:30 - 14:45 M Dara^{1,2}, N Torregrossa¹, L Bisanti¹, C La Corte¹, F Bertini^{1,2}, D Piazzese^{1,2}, M Banni³, D Parrinello^{1,2}, MG Parisi^{1,2}, M Cammarata^{1,2}

Mussels for investigate the effects of bio - based plastic on marine organisms

¹Department of Earth and Marine Sciences, University of Palermo, Palermo, Italy

²NBFC, National Biodiversity Future Center, Palermo, Italy

³Higher Institute of Biotechnology Monastir, Sousse University, Tunisia

14:45 - 15:00 PR Saraceni¹, A Miccoli², AR Taddei³, M Mazzonna⁴, AM Fausto⁵, G Scapigliati⁵, S Picchiatti⁵

Adverse effects of polystyrene nanoplastics on teleost fish: *in vitro* and *ex vivo* evidence

¹Italian National Agency for New Technologies, Energy and Sustainable Development (ENEA), Division of Health Protection Technologies, Rome, Italy

²National Research Council, Institute for Marine Biological Resources and Biotechnology (IRBIM), Ancona, Italy

³Center of Large Equipments, Section of Electron Microscopy, University of Tuscia, Viterbo, Italy

⁴National Research Council, Institute for Biological Systems (ISB), Monterotondo (RM), Italy

⁵Department for Innovation in Biological, Agro-food and Forest systems (DIBAF), University of Tuscia, Viterbo, Italy

15:00 - 15:15 C Bon¹, A Maretti¹, N Baranzini¹, L Pulze¹, L Izzo¹, S Pragliola², A Grimaldi¹

Effects of polypropylene micro and nanoplastics on wound healing and tissue regeneration in the medicinal leech *Hirudo verbana*

¹Department of Biotechnology and Life Sciences, University of Insubria, Varese, Italy

²Department of Chemistry and Biology, University of Salerno and INSTM Research Unit, Salerno, Italy

15:15 - 15:30 F Bertini^{1,2}, M Dara^{1,2}, L Bisanti¹, M Staropoli¹, C La Corte¹, L Scirè Calabrisotto¹, D Parrinello^{1,2}, MG Parisi^{1,2}, V Catania^{1,2}, M Cammarata^{1,2}

***Mytilus galloprovincialis* as sentinel to detect marine hydrocarbon contamination: an integrated approach**

¹Department of Earth and Marine Sciences, University of Palermo, Palermo, Italy

²NBFC, National Biodiversity Future Center, Palermo, Italy

Session III.1: Morpho-functional and molecular advances in comparative and developmental immunobiology

Chair: Annalisa Grimaldi (University of Insubria, Italy) and Jacopo Vizioli (Université de Lille, France)

15:30 - 15:45 G Bergamini¹, G Fiorito^{1,2}, P Imperadore^{1,2}

***Octopus vulgaris* as a model for studying indeterminate growth and regeneration**

¹Stazione Zoologica "Anton Dohrn", Naples, Italy

²Associazione Cephalopod Research-ETS, Italy

15:45 - 16:00 C La Corte^{1,2}, P Furla³, S Barnay-Verdier^{3,4}, L Bisanti^{1,2}, G Rizzuto⁴, M Cammarata^{1,2}, M G Parisi^{1,2}

Symphony of resilience: unravelling wound healing, regeneration, and symbiotic dynamics amidst stress

¹Marine Immunobiology Laboratory, Department of Earth and Marine Sciences (DiSTeM), University of Palermo, Palermo, Italy;

²NBFC, National Biodiversity Future Center, Palermo, 90133, Italy

³LIA ROPSE, Laboratoire International Associé Université Côte d'Azur - Centre Scientifique de Monaco, Monaco; Université Côte d'Azur, CNRS, INSERM, Institute for Research on Cancer and Aging, Nice (IRCAN), Nice, France; Université Côte d'Azur, Institut Fédératif de Recherche - Ressources Marines (IFR MARRÉS), Nice, France

⁴Sorbonne Université; Paris, France

⁵Department of Earth and Marine Sciences (DiSTeM), University of Palermo, Palermo, Italy

16:00 - 16:15 L Pulze^{1,2}, G Marcolli¹, F Acquati^{1,2}, A Grimaldi^{1,2}, N Baranzini^{1,2}

The role of the medicinal leech *HvRNASET2* enzyme during tissue remodeling

¹Department of Biotechnology and Life Sciences, University of Insubria, Varese, Italy

²Italian Leech Farm (ILFARM) Srl, Varese, Italy

16:15 - 16:30 G Marcolli¹, L Pulze^{1,2}, N Baranzini^{1,2}, L Barone¹, R Gornati¹, A Grimaldi^{1,2}

The medicinal leech *Hirudo verbana* as an innovative model to explore the potential of human Mesenchymal Stem Cells for multiple biomedical applications

¹Department of Biotechnology and Life Sciences, University of Insubria, Varese, Italy

²Italian Leech Farm (ILFARM) S.r.l, Varese, Italy

16:30 - 17:30 Members General Assembly

20:00 Social Dinner at "Caffè Concerto Modena", Piazza Grande 26, Modena

Friday, February 16th, 2024

Session III.2: Morpho-functional and molecular advances in comparative and developmental immunobiology

Chair: Maria Rosaria Coscia (National Research Council of Italy, Naples) and N Franchi (University of Modena and Reggio Emilia, Italy)

9:00 - 10:00 A D'Amico (writer and journalist, Italy)

“La memoria del nemico” the uneasy road to the immune system knowledge

10:00 - 10:15 A Montali¹, F Berini^{1,2}, F Gamberoni¹, A Saviane³, S Cappellozza³, G Bernardini¹, R Gornati¹, F Marinelli^{1,2}, G Tettamanti^{1,2}

The silkworm as a non-mammalian infection model for screening nanoconjugated-antibiotics

¹*Department of Biotechnology and Life Sciences, University of Insubria, Varese, Italy*

²*Interuniversity Center for Studies on Bioinspired Agro-Environmental Technology (BAT Center), University of Naples “Federico II”, 80055 Portici (NA), Italy*

³*Council for Agricultural Research and Economics, Research Centre for Agriculture and Environment (CREA-AA), Padua, Italy*

10:15 - 10:30 A Vallesi¹, G Di Giuseppe², R Marangoni², P Luporini¹, A Candelori¹

How bacteria escape from digestion in the phagosome: comparative analysis of the Type 6 Secretion System in pathogenic *Francisella* and non-pathogenic *Parafrancisella* bacteria

¹*Laboratory of Eukaryotic Microbiology and Animal Biology, School of Biosciences and Veterinary Medicine, University of Camerino, Camerino, Italy*

²*Department of Biology, University of Pisa, Pisa, Italy*

10:30 - 10:45 V Pianese¹, D Alvarez-Torres², J Gemez³, E Garcia-Rosado³, P Moreno³, A.M Fausto¹, G Scapigliati¹, S Picchietti¹

Immune responses to Betanodavirus (RGNNV) in European sea bass central nervous system

¹*Department for Innovation in Biological, Agro-food and Forest systems (DIBAF), University of Tuscia, Viterbo, Italy*

²*Institute of Biotechnology and Blue Development (IBYDA), University of Malaga, Malaga, Spain*

³*Institute of Biotechnology and Blue Development (IBYDA), Department of Microbiology, Faculty of Science, University of Malaga, Malaga, Spain*

10:45 - 11:00 U Rosani¹, P Venier¹, M Krupovic²

The search for invertebrate herpesviruses and their possible association with basal chordates

¹*Department of Biology, University of Padua, Padua, Italy*

²*Institut Pasteur, Université Paris Cité, Archaeal Virology Unit, 75015 Paris, France*

11:00 - 11:30 Coffee break

Session III.3: Morpho-functional and molecular advances in comparative and developmental immunobiology

Chair: Marco Gerdol (University of Trieste, Italy) and Adriana Vallesi (University of Camerino, Italy)

11:30 - 11:45 G Sabbadin¹, L Ballarin¹, C Anselmi², G Zambon³, V Zaffaroni Caorsi³, L Manni¹

Underwater noise induces stress on behavioral and physiological performances of the colonial ascidian *Botryllus schlosseri*

¹*Department of Biology, University of Padua, Padua, Italy*

²*Stem Cell Biology Regenerative Medicine Institute, Stanford University, Stanford, United Kingdom*

³Department of Earth and Environmental Sciences, University of Milano-Bicocca, Milan, Italy

11:45 - 12:00 L Drago¹, T Sasada², T Sunanaga², L Ballarin¹

Stress granule related-genes during the blastogenetic cycle of two colonial ascidians: *Botryllus schlosseri* compared to *Botryllus primigenus*

¹Department of Biology, University of Padua, Padua, Italy

²Department of Chemistry and Biotechnology, University of Kochi, Kochi, Japan

12:00 - 12:15 E Bortoletto¹, K Nagasawa², U Rosani³, P Venier³

Comparative Insights into ADAR-Mediated RNA Editing: Developmental and Immunological Perspectives

¹Department of Life Sciences, University of Trieste, Trieste, Italy

²Laboratory of Aquaculture Biology, Graduate School of Agricultural Science, Tohoku University, Sendai, Miyagi 980-8572, Japan

³Department of Biology, University of Padua, Padua, Italy

12:15 - 12:30 S Greco¹, P Cao², Z Liao², A Pallavicini¹, M Gerdol¹

Evolutionary insights into the large repertoire of antimicrobial peptides encoded by the genome of *Mytilus unguiculatus*

¹Department of Life Sciences, University of Trieste, Trieste, Italy

²Key Laboratory for Marine Living Resources and Molecular Engineering, College of Marine Science, Zhejiang Ocean University

12:30 - 12:45 M Gerdol, D Riommi, S Greco, A Pallavicini

The mytilin gene cluster: shedding light on the enigmatic origin of mussel dispensable genes

Department of Life Sciences, University of Trieste, Trieste, Italy

12:45 - 13:00 A Ferri¹; S Sacchi²; C Sabia²; R Simonini²; PM Costa³; R Iseppi²

The defensive anthraquinone Hallachrome: new insight on its antimicrobial potential and histological localization in *Halla parthenopeia* (Polychaeta)

¹Department of Chemical and Geological Sciences, University of Modena and Reggio Emilia, Modena, Italy

²Department of Life Sciences, University of Modena and Reggio Emilia, Modena, Italy

³UCIBIO - Applied Molecular Biosciences Unit, Department of Life Sciences, NOVA School of Science and Technology, NOVA University of Lisbon, Caparica, Portugal

13:00 - 13:15 N Franchi¹, S Sacchi¹, D Malagoli^{1,2}

Constitutive expression of complement C3 and its regulator *PcRCA1* in the Gastropod *Pomacea canaliculata*: tissue localization and response to bacterial stimuli

¹Department of Life Sciences, University of Modena and Reggio Emilia, Modena, Italy

²NBFC, National Biodiversity Future Centre, Palermo, Italy

13:15 - 13:30 Closing remarks and scientific closing of the XXIV IADCI Meeting