

Christian Giommi

Personal Information

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Web of Knowledge: [15916308](https://www.webofscience.com/wol/doi/10.1093/wbi/wbq008)

Current Position

01/02/2024 – CURRENT Ancona, Italy

Postdoctoral Fellow Polytechnic University of Marche (UNIVPM)

Occupational skills covered:

The focus of my research activity is to investigate the mitigation capacity of probiotic strain and formulation in counteracting the endocrine disruptor pleiotropic toxicity using both *in vivo* (*Danio rerio*) and *in vitro* (Human intestinal and hepatic organoids) approaches.

Education

01/11/2020 – 05/06/2024 Ancona, Italy

Ph.D. Polytechnic University of Marche (UNIVPM)

Field of study: Life and Environmental Sciences (D.M. 45/2013), Curriculum Biomolecular Sciences, XXXVI ciclo, funded by Polytechnic University of Marche, Ancona, Italy.

Number of credits: 180

Thesis Title: Impact of contaminants of emerging concern on reproduction and metabolism: focus on toxicity and mitigation.

Main subject / occupational skills covered:

The aim of my Ph.D. was to study the mitigation capacity of probiotic strain and formulation in counteracting the endocrine disruptor toxicity on reproduction, development, immune system, hepatic metabolism and brain and gut health using both *in vivo* (*Danio rerio*) and *in vitro* (Human intestinal and hepatic organoids) experimental models.

06/11/2017 – 22/07/2020 Ancona, Italy

MASTER OF SCIENCES (M.Sc.) Polytechnic University of Marche (UNIVPM)

Field of study: Applied and Molecular Biology

Number of credits: 120

Thesis Title: Probiotic modulation of metabolic disorders caused by BPA exposure in zebrafish

Main subject / occupational skills covered: The main focus of my thesis project was to investigate the mitigation capacity of a commercial probiotic formulation administered through food against the waterborne Bisphenol A-induced hepatic toxicity using *Danio rerio* adults as experimental models.

Final grade: Cum Laude (110/110 cum laude).

14/10/2013 – 25/10/2017 Ancona, Italy

Field of study: Biological Sciences

Number of credits: 180

Thesis Title: mRNA selective transport control gene expression in mammals

Final grade: 97

Publications

- **A Pretty Kettle of Fish: A Review on the Current Challenges in Mediterranean Teleost Reproduction-2024**
Marta Lombó †, **Christian Giommi** †, Matteo Zarantoniello and Giulia Chemello
Animals, MDPI, 2023 IF (Web of Knowledge) 2.7, Q1 in Veterinary Sciences and General Veterinary.
- **The probiotic SLAB51 as agent to counteract BPA toxicity on zebrafish gut microbiota -liver-brain axis - 2024**
Christian Giommi †, Marta Lombó †, Hamid R Habibi, Giacomo Rossi, Danilo Basili, Sara Mangiaterra, Claudia Ladisa, Giulia Chemello, Oliana Carnevali and Francesca Maradonna
Science of the Total Environment, Elsevier, 2023 IF (Web of Knowledge) 8.2, Q1 in Environmental Sciences.
- **EDCs: Focus on metabolic alteration of mammalian and nonmammalian models - 2023**
Christian Giommi, Oliana Carnevali and Hamid R Habibi, 2023, pages 73-88
DOI: 10.1016/B978-0-12-824464-7.00015-5
Book Chapter of ENVIRONMENTAL CONTAMINANTS AND ENDOCRINE HEALTH journal Acta Endocrinologica (Buchar).
- **Gestational diabetes mellitus and small-for-gestational-age: an insight into the placental molecular biomarkers – 2023**
Christian Giommi †, Marta Lombó †, Nina Montik, Michela Paolucci, Valentina Notarstefano, Giovanni Delli Carpini, Andrea Ciavattini, Antonio Ragusa, Francesca Maradonna, Elisabetta Giorgini and Oliana Carnevali
DOI: 10.3390/ijms24032240
Journal International Journal of Molecular Sciences, MDPI, 2023 IF (Web of Knowledge) 4.9, Q1 in Biochemistry and Molecular Biology.
- **A zebrafish HCT116 xenograft model to predict anandamide outcomes on colorectal cancer - 2022**
Francesca Maradonna, Camilla M. Fontana, Fiorenza Sella, **Christian Giommi**, Nicola Facchinello, Chiara Rampazzo, Micol Caichiolo, Seyed Hossein Hoseinifar, Luisa Dalla Valle, Hien Van Doan and Oliana Carnevali
DOI: 10.1038/s41419-022-05523-z
Journal Cell Death & Disease, SPRINGER NATURE, 2022 IF (Web of Knowledge) 9, Q1 in Cell Biology. 3 citations (Web of Knowledge).

- Preeclampsia correlates with an increase in cannabinoid receptor 1 levels leading to macromolecular alterations in chorionic villi of term placenta – 2022**
 Marta Lombó †, **Christian Giommi** †, Michela Paolucci, Valentina Notarstefano, Nina Montik, Giovanni Delli Carpini, Andrea Ciavattini, Antonio Ragusa, Francesca Maradonna, Elisabetta Giorgini and Oliana Carnevali
 DOI: 10.3390/ijms232112931
 Journal International Journal of Molecular Sciences, MDPI, 2022 IF (Web of Knowledge) 5.6, Q1 in Biochemistry and Molecular Biology. 6 citations (Web of Knowledge).
- Metabolomic and transcript analysis revealed a sex-specific effect of glyphosate in zebrafish liver – 2022**
Christian Giommi, Claudia Ladisa, Oliana Carnevali, Francesca Maradonna and Hamid R. Habibi
 DOI: 10.3390/ijms23052724
 Journal International Journal of Molecular Sciences, MDPI, 2022 IF (Web of Knowledge) 5.6, Q1 in Biochemistry and Molecular Biology. 11 citations (Web of Knowledge).
- Probiotic administration mitigates Bisphenol A reproductive toxicity in zebrafish – 2021**
Christian Giommi, Hamid R. Habibi, Michela Candelma, Oliana Carnevali and Francesca Maradonna
 DOI: 10.3390/ijms22179314
 Journal International Journal of Molecular Sciences, MDPI, 2021 IF (Web of Knowledge) 6.208, Q1 in Biochemistry and Molecular Biology. 14 citations (Web of Knowledge).

† **These Authors Contributed Equally.**

Conferences and Seminars

- 01/09/2024 – 05/09/2024 Ancona, Italy
31st Conference of the European Society for Comparative Endocrinology
 Poster presentation titled "Investigating miRNAs and their target mRNAs within human cumulus cells to infer ideal ovarian stimulation protocols for normal ovarian reserve patients"
- 15/07/2024 – 18/07/2024 León, Spain
IX international workshop on thebiology of fish gametes
 Oral presentation titled "Unraveling Glyphosate Toxicity on Brain-Gonadal Axis in zebrafish female: A Multiomics Study"
- 24/06/2024 – 26/06/2024 Basel, Switzerland
BaCell 3D conference
 Poster presentation titled "In vitro evidence of BPA-induced intestinal toxicity and Probiotic mitigation capacity using 3D models of human intestine"
- 05/06/2024 – 07/06/2024 Barcelona, Spain
58th Annual Scientific Meeting of the European Society for Clinical Investigation
- 05/06/2023 – 08/06/2023 Virtual Meeting

Gruppo Embriologico Italiano Società Italiana dello Sviluppo e della Cellula (GEI-SIBSC)

Poster presentation titled "Beneficial bacteria to counteract PFOA toxicity on *Danio rerio* development"

- 15/05/2023 – 19/05/2023 Crete – Greece
12th International Symposium on Reproductive Physiology of Fish
Poster presentation titled "Glyphosate chronic exposure impairs vitellogenesis and affects female zebrafish reproduction"
- 30/04/2023 – 04/05/2023 Dublin – Ireland
SETAC EUROPE 33RD ANNUAL MEETING
Oral presentation titled "Probiotic administration counteracts Bisphenol A induced toxicity at brain-gut-microbiome axis level in *Danio rerio* adults"
- 17/11/2022 – 18/11/2022 Rome – Italy
XIV Convegno INBB
Poster presentation titled "Probiotics mitigate BPA-induced brain-gut-microbiome axis toxicity in *Danio rerio* adults"
- 20/09/2022 – 23/09/2022 Gdansk – Poland
8th International Workshop on the Biology of Fish Gametes
Oral presentation titled "Insights on reproductive gender specific toxicity induced by Glyphosate chronic exposure in *Danio rerio* adults"
- 04/09/2022 – 08/09/2022 Faro – Portugal
30th CECE & 9th ISFE Joint Conference of the European Society for Comparative Endocrinology and of the International Society for Fish Endocrinology
Oral presentation titled "A multidisciplinary approach to investigate probiotic mitigation against chronic Bisphenol A exposure effects at hepatic and gut levels in *Danio rerio*"
- 28/06/2022 – 01/07/2022 Montpellier – France
14th International Congress on the Biology of Fish
Oral presentation titled "Probiotic administration counteracts Bisphenol A reproductive toxicity in zebrafish"
- 22/06/2021 – Virtual Meeting
Gruppo Embriologico Italiano Società Italiana dello Sviluppo e della Cellula (GEI-SIBSC)
Poster presentation titled "Use of probiotic to mitigate the reproductive disorders caused by BPA using zebrafish as model"

Internships

01/09/2023 – 30/11/2023 Barcelona, Spain

INSTITUTO DE INVESTIGACION BIOMEDICA DE BELLVITGE (IDIBELL)

I'm conducting an internship at Dr. Jordi Guiu Sagarra laboratory at IDIBELL P-CMR[C] to learn the techniques required for human intestinal and hepatic organoids establishment and maintenance and to investigate the toxic effects of two environmental widespread endocrine disruptors, Bisphenol A and Perfluorooctanoic Acid, on gut architecture and hepatic metabolism and to study the mitigation of this toxicity induced by the administration of a commercial probiotic formulation.

02/07/2019 – 21/12/2019 Calgary, Canada

UNIVERSITY OF CALGARY Department of Biological Sciences

This internship was conducted in Professor Hamid R. Habibi laboratory at the University of Calgary, allowing me to work in part of my Master thesis project focusing on metabolomic analysis of zebrafish liver and to develop other two projects to investigate the metabolic and reproductive toxicity of Glyphosate and to investigate the mitigation capacity of a commercial probiotic formulation against Diisononylphtalate metabolic and reproductive toxicity on *Danio rerio* adults.

20/03/2017 – 29/04/2017 Vallefoglia , Italy

BioLab

Internship in the analysis laboratory carrying out clinical tests.

Affiliation to Scientific Associations

20/12/2022 – CURRENT

Istituto Nazionale Biostrutture e Biosistemi Consorzio Interuniversitario

Reviewer Activity

22/02/2022

Journal of Experimental Zoology Part A

Trainings

08/09/2022 Faro, Portugal

MODEL-EDC 2nd Edition: Threats and Tools for Endocrine-Disrupting Pollutants in Marine Organisms - Algarve Centre of Marine Sciences (CCMAR), University of the Algarve, Gambelas Campus

26/02/2022 Online , Italy

CORSO BASE DI R - Turtles of the Adriatic Organization (TAO)

12/01/2021 Online , Italy

NOVITÀ NELLE MSCA E NEI GRANTS ERC IN HORIZON EUROPE - Agenzia per la Promozione della Ricerca Europea (APRE)

18/09/2021 Online , Italy

FORMAZIONE SPECIFICA SALUTE E SICUREZZA SUL LAVORO RISCHIO MEDIO - Polytechnic University of Marche (UNIVPM)

Teaching Activity

18/10/2023

Master Thesis Co-Supervisor

Thesis Title: Impact of PFOA on bone homeostasis: an in vitro study on human fetal osteoblasts

Student: Binci Annachiara

Supervisor: Professor Carnevali Oliana

19/07/2023

Master Thesis Co-Supervisor

Thesis Title: Multidisciplinary approach for the characterization of the placentas from patients with gestational diabetes and small for gestational age infants

Student: Pisacane Silvia

Supervisor: Professor Carnevali Oliana

19/07/2023

Master Thesis Co-Supervisor

Thesis Title: Probiotics as a potential tool to mitigate the effects of PFOA on zebrafish gut development and function

Student: Bevilacqua Lisa

Supervisor: Professor Carnevali Oliana

19/07/2023

Master Thesis Co-Supervisor

Thesis Title: A comparative study on the CB1 sperm localization: an insight into human sperm capacitation and activation

Student: Sandroni Cristina

Supervisor: Professor Carnevali Oliana

25/10/2022 – 26/05/2023

Teacher Assistant

Cellular Biology course, Biological Sciences, Professor Giorgia Gioacchini (50 hours)

Polytechnic University of Marche, Ancona, Italy

22/09/2022 – 19/12/2022

Teacher Assistant

Reproductive Biotechnology course, Molecular and Applied Biology, Professor Oliana Carnevali (50 hours)

Polytechnic University of Marche, Ancona, Italy

29/09/2021 – 29/11/2021

Teacher Assistant

Developmental Biology course, Biological Sciences, Dr. Francesca Maradonna (60 hours)

Polytechnic University of Marche, Ancona, Italy

25/09/2020 – 28/01/2021

Teacher Assistant

Insegnamenti Biologici, Biological Sciences, Professor Oliana Carnevali (60 hours)

Polytechnic University of Marche, Ancona, Italy

Language Skills

Mother Tongue(s): ITALIAN

Other Language(s):

	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken Production	Spoken Interaction	
ENGLISH	C2	C2	C2	C2	C2
FRENCH	A2	B2	A2	A2	B1
SPANISH	A2	B1	A1	A1	A2

Basic Users: levels A1 and A2; Independent Users: Levels B1 and B2; Proficient Users: levels C1 and C2

Digital Skills

Microsoft Office: Microsoft Excel, Microsoft PowerPoint, Microsoft Word, Microsoft Outlook | Zoom | Teams | PubMed, NCBI, Blast, ClustalW | Mendeley Citation Management | GraphPad Prism |

MetaboAnalyst 5.0 | SIMCA Umetrics | Knowledge of ZFIN the Zebrafish Information Network, UCSC Genome Browser, OMIM

Laboratory Skills

DNA/RNA Extraction and Isolation | RT-qPCR | Western Blot | Metabolomic | Metagenomic | Histology and Immunohistochemistry Staining | Optical and Confocal Microscopy | TUNEL Apoptosis Assay | Cell Culture (cell freezing, cell thawing, cell passage and cell counting) | 3D Organoids cell culture | Zebrafish Handling and Husbandry | Zebrafish exposure and live-imaging | Aquaculture and Ornamental teleost species Handling and Husbandry

Personal Skills

Team Management and Team Work | Organizational and Planning Skills | Good Listener and Communicator | Critical Thinking | Decision-Making | Written and Verbal Skills | Highly Motivated and Creative | Adaptation Skills | Relentless

Research Activity Resume

My research activity regarding the study of probiotic mitigation of endocrine disruptors toxic effects started during my Master thesis in Professor Oliana Carnevali laboratory at Polytechnic University of Marche. During that period, I worked mainly with two plasticizers, Bisphenol A and Diisononylphthalate, and a commercial probiotic formulation named SLAB51 to investigate its possible mitigation capacity against the contaminant toxicity, mainly at reproductive level, using *Danio rerio* adults as experimental models. SLAB51 reduced the Bisphenol A detrimental effects on spermatogenesis but was also able to alleviate the metabolic perturbation induced by both the plasticizers at hepatic level. The internship that I performed during the Master in Professor Hamid R. Habibi laboratory at University of Calgary allowed me to work in this last part of these two projects and to develop another project to address the reproductive and metabolic toxicity of the herbicide Glyphosate and its formulation RoundUP in zebrafish adults. This period abroad also allowed me to learn how to perform metabolomic analysis and to analyze the metabolomic data. During my Ph.D. in Professor Oliana Carnevali laboratory, I had the possibility to continue my research activity in the same field of investigation continuing to work on the projects that I started during the Master thesis preparation, and I developed also other projects in the field of environmental toxicology focusing on the study of the mitigation effects and mechanism of probiotic strain and formulation. The results obtained so far highlight the capacity of SLAB51 to counteract Bisphenol A toxicity at brain level by reducing the damage induced by the contaminant and to mitigate the Bisphenol A-induced alterations on gut architecture and gut microbiota composition. In this period, I also used another probiotic strain, *Bacillus subtilis* var. *natto*, to mitigate the Perfluorooctanoic Acid toxicity at developmental and bone ossification levels on zebrafish larvae, finding a counteraction of the pollutant toxic effects.

Working on Professor Oliana Carnevali laboratory allowed me also to develop other side projects on human reproduction, studying the histological, macromolecular and endocannabinoid system changes induced by gestational diseases on placenta, investigating the oocyte quality of patients undergoing different hormonal treatments by analyzing cumulus cells samples and addressing the involvement of endocannabinoid system on male human fertility by analyzing spermatozoa samples from normozoospermic patient and oligo-, asteno- and terato-zoospermic patients.

Currently, I'm conducting an internship in Dr. Jordi Guiu Sagarra Laboratory at IDIBELL, in Barcelona, working on human intestinal and hepatic organoids to investigate the mitigation capacity of SLAB51 against the intestinal and hepatic toxicity of Bisphenol A and Perfluorooctanoic Acid administered at different doses.

Scientific Dissemination:

During my research activity I published five papers on international journals and an additional one is under review in the journal Science of the Total Environment, I published one book chapter in an international journal, I presented an oral contribution to four international congresses, one poster presentation to an international congress and three poster presentations to national congresses, I'm affiliated to the INBB scientific association, and I served as reviewer for one paper in the journal of experimental zoology part A, I worked as teacher assistant for four different university courses, and I've been co-supervisor of four Master thesis.

I hereby declare that I consent to the publication of my curriculum vitae on the web.

Ancona, 01/10/2024

Christian Giommi

