

Dr. Veronica Rivi

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Department of Biomedical, Metabolic and Neural Sciences
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RESEARCH INTERESTS: Neuropsychiatric, Neurodegenerative, and Neuropharmacological research fields.

Keywords: Learning and memory, Neurodegeneration, Neuroinflammation, Stress, Translational medicine, Alternative models

Skills

- Strongly inclined to teamwork and extremely focused on details to obtain accurate results.
- Great interpersonal skills in public engagement and public speaking pertaining to teaching experiences.
- Managerial skills from working with multi-disciplinary and international teams.
- Strong work ethic, self-motivated, and powerful mediation abilities.
- Ability to quickly adapt to new methods, and work under tight deadlines.

Computer: Windows operating systems, Adobe Photoshop, SPSS, GraphPad, and Origin.

Language: Italian mother tongue. Fluent in English.

EDUCATION

Nov 2022 - ongoing

Specialization in Clinical Pharmacology and Toxicology

UNIMORE (Italy)

Oct, 2018 – Mar 2022

Ph.D in Neuroscience *cum laude*

UNIMORE (Italy)

Oct, 2015 – July, 2017

M.S., Biology *cum laude* and graduation commendations.

UNIMORE (Italy)

In collaboration with the Washington University – St. Louis (USA)

Oct, 2012 - July, 2015

B.S., Biological Sciences

UNIMORE (Italy)

WORK EXPERIENCES

Oct 7, 2020 – Oct 30, 2021

International visiting researcher

University of Calgary (Canada)

Jan 2019 – Jan 2022

Ph.D. candidates representative

UNIMORE (Italy)

Nov 2016 – July 2017

Internship in Electrophysiology

UNIMORE (Italy)

Jan 2015 – July 2015

Internship in Genetics

UNIMORE (Italy)

Pertinent skills

- Experimental design, data collection, and critical analysis.
- Bioinformatics analysis, acid nucleic and protein extraction, RT-q PCR,, Real-time PCR, gel electrophoresis, HPLC-ESI-HRMS/MS, and Western Blot.
- Data tabulation, organization, analysis, writing, and presentation.
- Animal maintenance and behavioral manipulation.

PEER-REVIEWED SCIENTIFIC PUBLICATIONS

1. Kagan D, **Rivi V**, Batabyal A, Benatti C, Blom JMC, Tascetta F, Lukowiak K. No Food for Thought: An Intermediate Level of Food Deprivation Enhances Memory in *Lymnaea stagnalis*. JEB – in press
2. **Rivi V**, Batabyal A, Benatti C, Blom JMC, Tascetta F, Lukowiak K. A novel behavioral display in *Lymnaea* induced by quercetin and hypoxia. The Biol Bull. – In press
3. **Rivi V**, Benatti C, Blom JMC, Pani L, Brunello N, Drago F, Papaleo F, Caraci F, Geraci F, Torrisi S, Leggio GM, Tascetta F., The role of dopamine D3 receptors, Dysbindin, and their functional interaction on the expression of key genes for neuroplasticity and neuroinflammation in the mouse brain. IJMS (2023), doi.org/10.3390/ijms24108699
4. **Rivi V**, Batabyal A, Benatti C, Blom JM, Tascetta F, Lukowiak K. Novel taste, sickness, and memory: Lipopolysaccharide to induce a Garcia-like effect in inbred and wild strains of *Lymnaea stagnalis*. Physiol Behav. (2023); doi: 10.1016/j.physbeh.2023.11413
5. **Rivi V**, Benatti C, Rigillo G, Blom JMC. Invertebrates as models of learning and memory: investigating neural and molecular mechanisms. J Exp Biol (2023); doi.org/10.1242/jeb.244844
6. Blom JMC, Barisone E, Bertolotti M, Caprino D, Cellini M, Clerici CA, Colliva C, di Giuseppe S, Jancovic M, Pancaldi A, Pani L, Poggi G, **Rivi V**, Tascetta F, Torta R, Scarponi D. The use of psychotropic medication in pediatric oncology for acute psychological and psychiatric problems: balancing risks and benefits. Children (2022); doi.org/10.3390/children9121878
7. Laudani S, Torrisi SA, Alboni S, Bastiaanssen TFS, Benatti C, **Rivi V**, Moloney R, Fuochi V, Furneri P, Drago F, Salomone S, Tascetta F, Cryan JF, Leggio GM. Gut microbiota alterations promote traumatic stress susceptibility associated with p-cresol-induced dopaminergic dysfunctions. BBI (2022); doi.org/10.1016/j.bbi.2022.11.004.
8. **Rivi V**, Benatti C, Actis P, Tascetta F, Blom JMC. Behavioral and Transcriptional Effects of Short or Prolonged Fasting on the Memory Performances of *Lymnaea stagnalis*. NeuroEndo (2022); doi.org/10.1159/000527489
9. **Rivi V**, Batabyal A, Benatti C, Blom JM, Tascetta F, Lukowiak K. Aspirin reverts lipopolysaccharide-induced learning and memory impairment: first evidence from an invertebrate model system. Naunyn-Schmiedeb. Arch. Pharmacol (2022); doi.org/10.1007/s00210-022-02286-4
10. Benatti C, **Rivi V**, Alboni S, Grilli A, Castellano S, Pani L, Brunello N, Blom JMC, Tascetta F. Identification and characterization of the kynurenine pathway in the pond snail *Lymnaea stagnalis*. Scient Rep (2022); doi.org/10.1038/s41598-022-19652-0
11. **Rivi V**, Batabyal A, Wiley B, Benatti C, Tascetta F, Blom JMC, Lukowiak K. Fluoride affects memory by altering the transcriptional activity in the central nervous system of *Lymnaea stagnalis*. NeuroTox (2022); doi.org/10.1016/j.neuro.2022.07.007
12. **Rivi V**, Batabyal A, Benatti C, Tascetta F, Blom JMC, Lukowiak K. Too hot to eat: Wild and lab-bred *L. stagnalis* differ in feeding response following 2 repeated heat exposure. Biol Bull (2022); doi.org/10.1086/720948
13. Batabyal A, Chau D, **Rivi V**, Lukowiak K. Risk in one is not risk in all: Snails show differential decision making under high and low risk environments. Animal Beh (2022); doi.org/10.1016/j.anbehav.2022.05.013
14. Kagan D, Batabyal A, **Rivi V**, Lukowiak K. A change in taste: the role of microRNAs in altering hedonic value. J Exp Biol (2022); doi: 10.1242/jeb.243840
15. **Rivi V**, Batabyal A, Benatti C, Blom JMC, Lukowiak K. Nature *versus* nurture in heat stress induced learning between inbred and outbred populations of *Lymnaea stagnalis*. J Therm Biol (2022); doi:10.1016/j.jtherbio.2021.103170
16. **Rivi V**, Batabyal A, Benatti C, Blom JM, Tascetta F, Lukowiak K. A flavonoid, quercetin, is capable of enhancing long-term memory formation if encountered at different times in the learning, memory formation, and memory recall *continuum*. J Comp Physiol A (2021). doi:10.1007/s00359-021-01522-1
17. Batabyal A, **Rivi V**, Benatti C, Blom JMC, Lukowiak K. Long-term memory of configural learning is enhanced via CREB upregulation by the flavonoid quercetin in *Lymnaea stagnalis*. J Exp Biol (2021); doi:10.1242/jeb.242761
18. **Rivi V**, Batabyal A, Juego K, Kakadiy M, Benatti C, Blom JMC, Lukowiak K. To eat or not to eat: a Garcia effect in pond snails (*Lymnaea stagnalis*). J Comp Physiol A (2021); doi:10.1007/s00359-021-01491-5
19. Fernell M, **Rivi V**, Batabyal A, Lukowiak K. The temperature sensitivity of memory formation and persistence is altered by cold acclimation in a pond snail. J Exp Biol (2021); doi:10.1242/jeb.242513
20. **Rivi V**, Benatti C, Lukowiak K, Colliva C, Alboni S, Tascetta F, Blom JMC. What can we teach *Lymnaea* and what can *Lymnaea* teach us? Biol Rev Camb Philos Soc. (2021); doi:10.1111/brv.12716

21. Melegari G, **Rivi V**, Zelent G, Nasillo V, De Santis E, Melegari A, Bevilacqua C, Zoli M, Meletti S, Barbieri A. Mild to severe neurological manifestations of COVID-19: cases reports. *Int J Environ Res Public Health*. (2021); doi:10.3390/ijerph18073673
22. **Rivi V**, Melegari G, Blom JMC. How to humanize the COVID-19 intensive care units. *BMJ EBM* (2021); doi:10.1136/bmjebm-2020-111513
23. **Rivi V**, Benatti C, Colliva C, Radighieri G, Brunello N, Tascedda F, Blom JMC. *Lymnaea stagnalis* as model for translational neuroscience research: From pond to bench. *Neurosc & Biob Rev* (2020); doi:10.1016/j.neubiorev.2019.11.020
24. **Rivi V**, Petrilli G, Blom JMC. Mind the mother when considering breastfeeding. *Front Glob Women's Health*. (2020); doi:10.3389/fgwh.2020.00003
25. Benatti C, **Rivi V**, Colliva C, Radighieri G, Tascedda F, Blom JMC. Redefining operant conditioning of escape behaviour in *Lymnaea stagnalis*. *Inv Surv J* (2020); doi:10.25431/1824-307X/isj.v0i0.129-137
26. Mandrioli M, **Rivi V**, Nardelli A, Manicardi GC. Genomic and cytogenetic localization of the carotenoid genes in the aphid genome. *Cytogenet Genome Res*. (2016); doi:10.1159/000448669

MANUSCRIPTS UNDER REVISION

1. **Rivi V**, Batabyal A, Benatti C, Blom JMC, Tascedda F, Lukowiak K. Behavioral and transcriptional effects induced by exposure to the predator scent in inbred and wild pond snails. *Neurobiol Learn and Mem* – **pending minor revisions**
2. **Rivi V**, Batabyal A, Benatti C, Blom JMC, Tascedda F, Lukowiak K. Investigating the interactions between multiple memory stores in the pond snail *Lymnaea stagnalis*. *J Comp Phys A* – **pending minor revisions**
3. **Rivi V**, Batabyal A, Benatti C, Blom JMC, Tascedda F, Lukowiak K. Change is evident when you are wild: contrasting behavioral and transcriptional responses in freshly collected and inbred laboratory-reared snails in response to heat stress. *Can J Zool* – **under revision**
4. **Rivi V**, Rigillo G, Toscano Y, Benatti C, Blom JMC. *A multidisciplinary approach to study the complex interaction between pain and trauma in children*. *Children* – **under revision**
5. Scarponi D, Sarti P, **Rivi V**, Colliva C, Marconi E, Blom JMC. Emotional, behavioral, and physical health consequences in caregivers of children with cancer: a network analysis differentiation in mothers and fathers' reactivity. *Cancers* – **under revision**
6. Rivi V, Batabyal A, Lukowiak K. The multifaceted effects of bioactive compounds on neuroplasticity. *Brain Plasticity* – **under revision**

CONFERENCE ABSTRACT AND POSTER PRESENTATIONS

- **Rivi V. et al., (2023)**. Adolescents and Precision Neuropsychopharmacology translated in a 10-step process. - Poster at IUPHAR 2023 For World Smart Medication Day 2023
- **Rivi V. et al., (2023)**. Dysbindin, D3 dopamine receptors, and their genetic interaction differently regulate the mRNA levels of neuroplasticity-related genes in the mouse brain. - Poster presentation at ECNP Workshop for Early Career Scientists in Europe 2023. Nice (France)
- **Rivi V. et al., (2022)**. Role of dopamine D3 receptors, dysbindin, and their functional interaction on the expression of key genes for neuroplasticity in the mouse brain - Poster presentation at the 41st National meeting of the Italian Pharmacology Society. Rome (Italy)
- **Rivi V. et al., (2019)**. Transcriptional effect of food deprivation in the ganglia of *Lymnaea stagnalis* - Poster presentation at the II National meeting of Ph.D. students in Neuroscience. Naples (Italy)
- **Rivi V. et al., (2019)**. New frontiers in Translational Medicine: *Lymnaea stagnalis* as a model for neurological diseases - Poster presentation at the XX National Conference of Italian society of neuropsychopharmacology. Milan (Italy)

ONGOING COLLABORATIONS

- Prof. Ken Lukowiak – Hotchkiss Brain Institute (Calgary)
- Prof. Gian Marco Leggio – University of Catania (Italy)
- Dr. Anuradha Batabyal – FLAME University (India)
- Dr. Marco Biagi – University of Siena (Italy)
- Prof. Luca Pani – University of Miami – FL (USA)
- Dr. Istvan Fodor – Balaton Limnological Research Institute (Hungary)
- Dr. Giuseppe Caruso – University of Catania (Italy)

ONGOING PROJECTS

Nov 2018 – ongoing

Participation as an investigator in the following Research Projects of Significant National Interest (PRIN):

- FACILITATE – FrAmework for Clnical trlal participants' daTA reutilization for a fully Transparent and Ethical ecosystem on the project (R)HORIZONH2020PANI FACILITATE - FrAmework for Clnical trlal participants' daTA reutilization for a fully Transparent and Ethical ecosystem.
- Dopamine-dysbindin genetic interaction: a multidisciplinary approach to characterize cognitive phenotypes of schizophrenia and develop personalized treatment. Supported by PRIN-MIUR Prot.2017K2NEF4
- Unveiling the role of gender on depressive behavior induced by an early neuroinflammatory hit and on the antidepressant response via multitasking approach from mice to patients. Supported by PRIN-MIUR Prot.201779W93T-PR
- Participation as an investigator in the Research Project on alternative methods to the use of animals supported by Regione Emilia-Romagna. L.R. N. 20/2002: "The invertebrate *Lymanea stagnalis* as a model for Translational Medicine

AWARDS AND GRANTS

- Co-relator of a master thesis awarded by the region Emilia-Romagna with the 'Dissertation awards and contributions to research grants aimed at promoting alternative methods to the use of animals'. (Sept 2022)
- Scholarship for the most deserving graduate student (Oct 2021). Manni Foundation, Maranello (Modena). Italy
- Young Researcher Mobility Grant (Jun 2021). UNIMORE (Italy)
- Entrepreneurial Thinking Award (Apr 2021). UofC (Canada)
- Young Researcher Mobility Grant (Oct 2020). UNIMORE (Italy)
- Ph.D. Research Grant (Oct 2018-2021). UNIMORE (Italy)
- Graduation award (2016/2017). UNIMORE (Italy)
- Study award (2015/2016). UNIMORE (Italy)

PROFESSIONAL CERTIFICATES

- National Board Certification Biology (2022), UNISANNIO, Italy
- Standard Italian teaching certification for biology, chemistry, geology, and math (2018). UNIMORE, Italy

PROFESSIONAL DEVELOPMENT COURSES

- Research and biobanking. Region Emilia-Romagna (Italy) (Dec 2022)
- Training credits to work with animals for scientific and educational purposes (2022). Online course provided by the Experimental zooprofilactic Institute of Lombardy and Emilia Romagna (IZSLERBU). Approved by the Italian Ministry of Health (Art. 1, p. 1, a-d of M.D. 5 August 5, 2021).
- Science communication (2021). Natural Sciences and Engineering Research Council of Canada
- Statistical design of experiments and statistical aspects of animal experimentation (2021). UNIMORE, Italy
- New psychoactive substances: from basic research to clinical issues (2020) Italian Society of Neuroscience, Italy
- Research and Innovation Policies. Designing research and publishing to valorize research (2019). UNIMORE, Italy
- Covid-19 emergency: prevention and use of personal exploitation of research (2019)
- Emergency management and first aid protective equipment (2019). UNIMORE, Italy
- Genome editing technologies in action (2018). UNIMORE, Italy

TEACHING EXPERIENCES

April 2023 – ongoing

Teacher - Course: Stress and Health: psychological biological and behavioral factors.

Bachelor's degree in Psychological Sciences (**STPSI_35**).

UNIMORE (Italy)

Jun 2019 – ongoing

Pre-admission to medical school teacher

UNIMORE (Italy)

Dec 2018 – ongoing

Undergraduate students mentor

UNIMORE (Italy) and UofC (Canada)

Students mentored: Conte C, Francia M, Filippini A, Ferretti E, Ferrari M, Reggi L, Zumbo D, Sasso G, Schiatti E, Actis P, Wiley B, Kagan D, Shonak A, Chau D, Zanetti V, Zampini F, Vitelli M, Vivi C, De Benedictis P, Berretta F, Ruffini J, La Palma F, Sarti PF, Ballestrazzi G, Raimondi F.

Jan– May 2018

Lab Tutor

Dept. of Life Sciences.

UNIMORE (Italy)

Sept 2017 – Jun 2018

Chemistry teaching assistant

UNIMORE (Italy)

THESIS CO-ADVISOR

Jun 2019 – ongoing

Bachelor's thesis

1. LPS-induced Garcia effect in *Lymnaea stagnalis*: transcriptional mechanisms and pharmacological regulation. Graduate student: Francia M. Advisor: Benatti C, Co-advisors: **Rivi V.** UNIMORE, Italy. Apr 2023
2. Effects of food deprivation on memory and learning ability of the pond snail *Lymnaea stagnalis*. Graduate student: Filippini A. Advisor: Benatti C, Co-advisors: **Rivi V.** UNIMORE, Italy. Apr 2023
3. *Lymnaea stagnalis* as a model for neurodegenerative diseases. Graduate student: Raimondi F. Advisor: Prof. Tascetta F, Co-advisors: Benatti C and **Rivi V.** UNIMORE, Italy. Dec 2019
4. New frontiers of translational medicine: identification and characterization of novel transcripts in the nervous system of *Lymnaea stagnalis*. Graduate student: Ballestrazzi G. Advisor: Prof. Tascetta F, Co-advisors: Benatti C and **Rivi V.** UNIMORE, Italy. Dec 2018

Master's thesis

5. Transcriptional and behavioral effects induced by different stress conditions in specimens of *Lymnaea stagnalis* subjected to various regimes of food restriction Graduate student: Francesca Zampini. Advisor: Prof. Brunello N, Co-advisors: Benatti C and **Rivi V.** UNIMORE, Italy. Oct 2020
6. Identification of transcripts coding for kynurenine pathway components in the nerve ganglion of the invertebrate *Lymnaea stagnalis*. Graduate student: Chiara Vivi. Advisor: Prof. Brunello N, Co-advisors: Benatti C and **Rivi V.** UNIMORE, Italy. Apr 2019

PEER REVIEWER FOR SCIENTIFIC INTERNATIONAL JOURNALS

- euro eISSN: 2373-2822
- Nutritional Neuroscience ISSN 1028-415
- Frontiers Pharmacology ISSN 1663-9812
- Biology ISSN ISSN 2079-7737
- International Journal of Environmental Research and Public Health ISSN 1660-4601
- Children ISSN 2227-9067
- Archives of Women's Mental Health ISSN: 1434-1816

SCIENTIFIC VOLUNTEER ACTIVITIES

2015 – ongoing - Management Team Member of Inco.Scienza, a cultural association that organizes events and activities aimed at the dissemination of the latest scientific advances to adults and students of all ages.

Conference Lectures

- 2021 **Rivi V.** and Emanuele G. In vino veritas: principles of winemaking and discussion on how alcohol impacts the brain Divulcation conference. Modena, Italy. Organized by Inco.Scienza
- 2020 **Rivi V.** The imitation game: machine learning and artificial intelligence. Divulcation conference. Modena, Italy. Organized by Modena Smart Life
- 2020 **Rivi V.**, Music and the brain. Online Divulcation conference. Organized by Inco.Scienza
- 2019 **Rivi V.**, Life and discoveries of Rita Levi Montalcini. Divulcation conference, Modena, Italy.
- 2018 **Rivi V.** and Rivi A., Music and Neuroscience. Modena, Italy. Organized by Inco.Scienza
- 2017 **Rivi V.** and Pavesi S., Pain therapy: from bench to bedside. Modena, Italy. Organized by Inco.Scienza

I declare that the facts given above are genuine to the best of my knowledge and belief.

Modena, May, 2023

