Tommaso Seri - *CURRICULUM VITAE*

EDUCATION AND RESEARCH

- *Nov. 2018 - present* PhD Programme in Behavioral Neuroscience, Sapienza University of Rome

  Curriculum: Psychobiology and Psychopharmacology

  Thesis title: Communication breakdown: investigation of brain networks alterations across time in a mouse model of traumatic stress

  Supervisor: Prof. Arianna Rinaldi, Sapienza University of Rome – Department of Biology and Biotechnology "C. Darwin"

  Using the immediate early gene Fos as a marker of neural activity, I investigated brain networks alterations over time in mice exposed to a rat. Taking advantage of chemogenetic techniques, I inhibited key projections between structures of the circuit to evaluate their role in pathological reaction to traumatic stress.

- *26/10/2018* Master's degree in Neurobiology, Sapienza University of Rome

  Mark: 110/100 *cum laudae*

  Thesis title: Interactive effects of environmental enrichment and histone acetylation on motor learning and recognition memory

  Supervisor: Prof. Arianna Rinaldi, Sapienza University of Rome – Department of Biology and Biotechnology "C. Darwin"

  I investigated the interaction of environmental enrichment and histone acetylation by intra-peritoneal injection of sodium butyrate and I evaluated their effects on motor coordination and recognition memory by performing behavioral tasks.

- *17/11/2016* Bachelor's degree in Biological Science, at University of Camerino

  Mark: 108/110

  Thesis title: Immunohistochemical techniques for the diagnosis of melanoma

  Supervisors: Prof. Daniele Tomassoni, School of Biosciences and Veterinary Medicine, University of Camerino – Dr. Irene Broglia, Ospedale Civile di Macerata, Italy – Unità Operativa di Anatomia Patologica

  I performed immunohistochemistry and immunofluorescence techniques with Ventana Platform (Benchmark XT and Benchmark Ultra) and learned how to use them for the diagnosis of melanoma.

LABORATORY EXPERIENCE

Nov. 2018 – present

PhD student, Department of Biology and Biotechnology "Charles Darwin"; Supervisor: Prof. Arianna Rinaldi

Research interests:

- Assessment of the early and long-lasting anxiogenic effect of predator exposure and evaluation of neural activity alterations both at early and late time points.
- Investigation of the role of basolateral amygdala-medial prefrontal cortex projections in pathological reaction to traumatic stress.
- Evaluation of fluoxetine treatment in rescue behavioral deficit in Neuroligin3 R451C KI mouse model of autism spectrum disorder (ASD).
- Assessment of behavioral effects of chronic probiotic administration in Neuroligin3 R451C KI murine model of ASD.
- Behavioral evaluation of dexamethasone treatment in R451C Neuroligin3 KI mice as a model of ASD.

Sept. 2017 – Oct. 2018

Master's Internship, Sapienza University of Rome – Department of Biology and Biotechnology "Charles Darwin"; Supervisor: Prof. Arianna Rinaldi.

Research interests:

- Behavioural evaluation of the effects of interaction between environmental enrichment and histone acetylation on motor learning and recognition memory
- Assessment of long-term stress response in a predator-exposure murine model of Post-Traumatic Stress Disorder; behavioral and molecular comparison of the susceptible and resilient subject
- Learning management rules regarding the well-being of murine colonies

Jun. 2016 – Aug. 2016

Bachelor's Internship, Ospedale Civile di Macerata – Unità Operativa di Anatomia Patologica e Citodiagnostica; Supervisor: Dr. Irene Broglia

Research interests:

- study of pathogenesis, risk factors, course of melanoma
- investigation and application of immunohistochemical techniques commonly used in melanoma diagnosis
- organizational method that allows managing the laboratory activity

MEETINGS & CONFERENCES

T. Diamanti, F. Serafini, C. Perfetto, S. Di Angelantonio, C. Lauro, L. Mautone, A. Setini, L. Trobiani, D. Comoletti, T. Seri, A. Rinaldi, E. Cacci, A. De Jaco (2022). Dexamethasone improves cell surface trafficking of R451C Neuroligin3, linked to autism. 13th FENS Forum.

R. Gioia, T. Seri, T. Diamanti, S. Fimmanò, S. Biagioni, A. Rinaldi, G. Lupo, A. De Jaco, E. Cacci (2022). The serotonin reuptake inhibitor fluoxetine rescues hippocampal neurogenesis and ameliorates social interaction deficits in the R451C Neuroligin3 mouse, a monogenic model of autism spectrum disorders. EMBO Workshop.

T. Seri, G. De Cicco, A. Mele, A. Rinaldi (2021). Neural network alterations across time in a mouse model of traumatic stress. 49th EBBS Meeting.

T.Seri, G. De Cicco, A. Mele, A. Rinaldi (2020). Time-dependent alterations in the medial prefrontal cortex after exposure to a traumatic stress in mice. 12th FENS Forum.

MANUSCRIPTS IN PREPARATION

S.Rajendran, R.R. Daswani, M. Pino, G. Del Vecchio, T. Seri, L. Fralleoni, E. Perlas, C. Presutti, C. Mannironi, A. Rinaldi. Inhibition of miR-144/451a cluster in the prelimbic cortex reduces traumatic stress-induced anxiety behavior. In preparation.

Gioia R, Seri T, Fimmanò S, Diamanti T, Marina Vitale, Ahlenius H, Kokaia Z, Tirone F, Micheli L, Biagioni S, Lupo G, Rinaldi A, De Jaco A, Cacci E. The antidepressant Fluoxetine rescues adult hippocampal neurogenesis and social interaction deficits in the R451C Neuroligin3 mouse model of autism. In preparation.

Seri T., De Cicco G., Fralleoni L., Mele A., Rinaldi A. Communication breakdown: investigation of brain networks alterations across time in a mouse model of traumatic stress. In preparation.

EXPERTISE AND TECHNICAL SKILLS

Behavioral test: Object recognition, Open Field, Rotarod, Reverse Grid Test, Hanging Wire Test, Environmental Enrichment, Acoustic Startle Response, Elevated Plus Maze, Predator Exposure, Three Chambers Sociability Test, male-female social interaction, marble burying.
Procedures: stereotaxic surgery for viral vector infusion and cannulas implantation, transcardial perfusion, intraperitoneal and brain focal injection.
Histology: brain dissection, use of microtome, evaluation of cannula and injection placement, immunohistochemistry and immunofluorescence, light and fluorescence microscopy.
Computer: ANYmaze (behavioral assessment), Fiji (cells quantification); Microsoft package; Statistica TIBCO (statistic analysis); basic knowledge of Adobe Illustrator.
Language: FIRST certificate in English – Council of Europe Level B2 – conferred by Cambridge English Language Assessment (2015)
Colony management: breeding, weaning of pups, attended a course on animal well being;
Transferable skills: committed to neuroscience research, with a good knowledge of behavioral assessment; great communication skills; capable to work in a team.

ATTENDANCE OF COURSES ON ANIMAL EXPERIMENTATION

"Seminari sul benessere animale" organized by Centro di Ricerca e Servizi Sperimentazione Preclinica e Benessere animale, Sapienza University of Rome

"Metodi di Neuroscienze Comportamentali", Neurobiology Master degree course, Sapienza University of Rome

RESEARCH INTERESTS

I am very interested in investigating the neurobiological basis of behavior in both normal and pathological brain.
In my laboratory experiences, I have acquired several useful skills to dissect brain circuits involved in specific behavioral output, as well as cognitive functions such as memory. Moreover, my expertise with chemogenetic techniques would be a precious tool to investigate the role of specific brain structures and projections, extending our knowledge of both healthy and pathological brain and opening new possibilities for developing novel treatment and therapeutic strategies for several psychiatric disorders, such as PTSD, ASD, and Alzheimer's disease.

Autorizzo la pubblicazione del mio curriculum vitae e il trattamento dei dati personali in esso contenuti in base all'art. 13 del D. Lgs. 196/2003 e all'art. 13 GDPR 679/16