CURRICULUM VITAE

Personal Information

Alessandro Piva – Research Fellow
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Scholarships and Awards

April 2023 – present
Research Fellow in Pharmacology
Laboratory of Neuropsychopharmacology, University of Verona, Verona (Italy)
- Evaluation of the effects induced by orally administered-plant extracts on cognitive functions of mice
- Ex-vivo characterization of the plant extract-induced effects on neural markers correlated to cognitive functions in different brain areas

July 2020 – March 2023
Research Fellow in Pharmacology
Laboratory of Neuropsychopharmacology, University of Verona, Verona (Italy)
- Investigation of craving effects induced by exposure to palatable food-associated cues in healthy subjects, and craving modulation by exposure to environmental enrichment as a virtual reality experience.
- Analysis of behavioural and molecular correlates of slow intravenous low-dose ketamine infusion in murine brain areas relevant to depression and addiction.

April 2019 – March 2020
Research Fellow in Pharmacology (Zardi-Gori Foundation)
Laboratory of Neuropsychopharmacology, University of Verona, Verona (Italy)
- Characterization of the behavioural phenotype of the 6-hydroxydopamine (6-OHDA) striatal lesion as an *in-vivo* model of Parkinson's Disease, to identify new therapeutic approaches against Impulse-Control Disorders.

January 2018 – March 2019
Research Fellow in Pharmacology
Laboratory of Neuropsychopharmacology, University of Verona, Verona (Italy)
- Behavioural and molecular study of the possible long-term therapeutic efficacy of high-dose intravenous ketamine bolus against contextual-induced food/nicotine memory recall and relapse to self-administration.
- Investigation of Environmental Enrichment as a modulator of contextual- and cue-induced relapse to food/drug self-administration.

Education and training

November 2014 – October 2017
Ph.D. in Neuroscience and Psychological and Psychiatric Sciences
Laboratory of Neuropsychopharmacology, University of Verona, Verona (Italy)
- Assessment of the glutamatergic neurotransmission involvement in addiction, and specifically *in-vivo* and *ex-vivo* investigation of NMDA receptors antagonists MK-801 and ketamine as pharmacological treatments to inhibit food and nicotine instrumental memories recall and reinstatement in a self-administration protocol.

September 2011 - July 2014
Master of Science (M.Sc.) in Neuroscience
Laboratory of Cellular and Molecular Neuroanatomy, University of Trieste, Trieste (Italy)
- Production of cleavable and uncleavable recombinant brain-derived neurotrophic factor (BDNF) proteic isoforms and analysis of their effects on primary hippocampal pyramidal neurons development and viability, in comparison to commercially available BDNF isoforms.

September 2006 – February 2011
Bachelor of Science (B.Sc.) in Biotechnology
Laboratory of Physiology, University of Padova, Padova (Italy)
- Investigation of glutathione reductase gene expression in the Antarctic fish *Trematomus eulepidotus* after exposure to heavy metals.

Skills

Behavioural biology
Handling and behavioural testing of laboratory murine models. Behavioural protocol: operant Self-Administration and memory tests, Drug Discrimination, Open Field Test, Novel Object Recognition Test, T-maze Test, Forced Swim Test. Significant expertise in catheter construction and jugular vein cannulation of rats. Significant expertise in specific brain tissue extraction and sampling

Molecular biology
Expertise in cloning vectors - primers design, digestions, ligations, cloning; bacterial transformation; PCR; DNA gel analysis, quantification, extraction, and purification; purification of recombinant proteins; Western Blot

Cellular biology
Extraction and primary culture of rat hippocampal/cortical neurons, cell lines culture, cell culture transfection. Microbiology: bacterial culture in solid and liquid media, isolation, and transformation. Microscopy: immunolocalization techniques; fluorescence and light microscopy

Other skills
Extensive knowledge of Microsoft Office programs, GraphPad Prism, ImageJ, E-Prime. Basic knowledge of Photoshop, CLC Main Workbench, Bioedit, Any-maze, virtual reality technology (HTC-Vive)

Languages
Italian (mother language), English (independent user)

Achievements

November 2014 – October 2017
Ph.D. Scholarship, University of Verona, Verona, Italy.

April 2019 – March 2020
1-year Fellowship in Pharmacology by Zardi-Gori Foundation, Milano, Italy.

2018
Selected speaker at Convegno Monotematico SIF, University of Insubria, Varese, Italy.

Ad-hoc reviewer for international journals, as Pharmacological Research, Molecular Neurobiology, Neuroscience, Scientific Reports.

Publications

Caffino L*, Mottarlini F*, **Piva** A*, Rizzi B, Fumagalli F, Chiamulera C (2023) Temporal dynamics of BDNF signaling recruitment in the rat prefrontal cortex and hippocampus following a single infusion of a translational dose of ketamine. Neuropharmacology. doi: 10.1016/j.neuropharm.2023.109767

Benvegnù G, **Piva** A, Cadorin C, et al. The effects of virtual reality environmental enrichments on craving to food in healthy volunteers. Psychopharmacology (2023). doi: 10.1007/s00213-023-06462-z

Pintori N, **Piva A**, Guardiani V, Marzo C M, Decimo I, Chiamulera C (2022) The interaction between Environmental Enrichment and fluoxetine in inhibiting sucrose-seeking renewal in mice depend on social living condition. Psychopharmacology. doi: 10.1007/s00213-022-06124-6

Pintori N, **Piva A**, Guardiani V, Decimo I, Chiamulera C (2022) Brief Environmental Enrichment exposure enhances contextual-induced sucrose-seeking with and without memory reactivation in rats. Behav Brain Res.416:113556. doi: 10.1016/j.bbr.2021.113556.

Piva A, Caffino L, Mottarlini F, Pintori N, Castillo Díaz F, Fumagalli F, Chiamulera C (2021) Metaplastic Effects of Ketamine and MK-801 on Glutamate Receptors Expression in Rat Medial Prefrontal Cortex and Hippocampus. Mol Neurobiol. doi: 10.1007/s12035-021-02352-7.

Chiamulera C, **Piva A**, Abraham WC (2020) Glutamate receptors and metaplasticity in addiction. Curr Opin Pharmacol. 56:39-45. doi: 10.1016/j.coph.2020.09.005.

Piva A***,** Pintori N*****, Padovani L, Chiamulera C (2020) Protocols for instrumental memory reconsolidation in rodents: a methodological review. J Neurosci Methods. doi: 10.1016/ j.jneumeth.2020.108766.

Piva A***,** Caffino L*, Padovani L, Pintori N, Mottarlini F, Sferrazza G, Paolone G, Fumagalli F[#], Chiamulera C [#] (2020) The metaplastic effects of ketamine on renewal and reconsolidation of sucrose contextual memory in rats. Behav Brain Res. 379:112347. doi: 10.1016/j.bbr.2019.112347.

Piva A*, Gerace E*, Di Chio M, Padovani L, Paolone G, Pellegrini-Giampietro D E, Chiamulera C (2019) Reconsolidation of sucrose instrumental memory in rats: the role of retrieval context. Brain Res. 1714:193-201. doi: 10.1016/j.brainres.2019.03.006.

Piva A., Padovani L., Chiamulera C. (2018) Le memorie automatiche in addiction sono manipolabili o immutabili? Neurobiologia delle dipendenze: lo stato dell'arte, Medicina delle Dipendenze (Italian)

Piva A, Gerace E, Di Chio M, Osanni L, Padovani L, Caffino L, Fumagalli F, Pellegrini-Giampietro DE, Chiamulera C. (2018) The metaplastic effects of NMDA receptors blockade on reactivation of instrumental memories in rats. Neurobiol Learn Mem. pii: S1074-7427(18)30005-4. doi: 10.1016/j.nlm.2018.01.007.

Fattore L, **Piva** A, Zanda MT, Fumagalli G, Chiamulera C. (2018) Psychedelics and reconsolidation of traumatic and appetitive maladaptive memories: focus on cannabinoids and ketamine. Psychopharmacology. 1-13. doi: 10.1007/s00213-017-4793-4.

Caffino L, **Piva** A, Mottarlini F, Di Chio M, Giannotti G, Chiamulera C, Fumagalli F. (2018) Ketamine self-administration elevates αCaMKII autophosphorylation in mood and reward-related brain regions in rats. Mol Neurobiol. doi: 10.1007/s12035-017-0772-3.

Caffino L*, **Piva** A*, Giannotti G, Di Chio M, Mottarlini F, Venniro M, Yew DT, Chiamulera C, Fumagalli F. (2017) Ketamine self-administration reduces the homeostasis of the glutamate synapse in the rat brain. Mol Neurobiol. doi: 10.1007/s12035-016-0231-6. * equally contributed.