

Personal Information

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Date of birth 26/06/1989 | Nationality Italian

Education

- October 2017 – Present **PhD Student** EQF Level: 8
University of Verona, Verona, (Italy)
Laboratory of Plant Biology and Metabolomics
Tutor: Professor Flavia Guzzo
Expected graduation date: First half of 2021
- October 2012 – September 2014 **Master of Science (M.Sc.) in Neurobiology** EQF Level: 7
University of Pavia, Pavia (Italy)
 - Final grade: 110/110 (*cum laude*)
 - Internship laboratory: Experimental Psychopharmacology, IRCCS-Mario Negri Institute for Pharmacological Research, Milan (Italy)
 - Thesis title: "Experimental evaluation of cocaine sensitization after chronic nicotine exposure in adolescent rats"
 - Thesis advisor: Dr. Luigi Cervo/Professor Daniela Curti
- October 2009 – September 2012 **Bachelor of Science (B.Sc.) in Biological Sciences** EQF Level: 6
University of Milano-Bicocca, Milan (Italy)
 - Final grade: 104/110
 - Thesis title: "Oxidative damage compromises energy metabolism in the axonal degeneration mouse model of X-adrenoleukodystrophy"
 - Thesis advisor: Professor Paolo Tortora

Research Experience

- October 2017 – Present **PhD Student**
Laboratory of Plant Biology and Metabolomics, University of Verona, Verona, Italy
Description: My research project relates to the "in vivo" characterization of potential antidepressant-like activity of fruits and vegetables and the possible use of these compounds as a co-adjuvant in mood disorders.
- June 2016 – September 2017 **Research Assistant**
Laboratory of Neuropsychopharmacology, University of Verona, Verona, Italy
Description: In this period I investigated the possible effects of ampa receptor (AMPA) in mediating ketamine addiction through glutamatergic neurotransmission and how the blockade of AMPAR could alter reinstatement in a self-administration protocol. During this time I also started the setup of *in vivo* models for assessing potential antidepressant-like activity of common fruits and vegetables.
- October 2014 – May 2016 **Research Assistant**
Laboratory of Experimental Psychopharmacology, IRCCS-Mario Negri Institute for Pharmacological Research, Milan, Italy. <http://www.marionegri.it>
Description: My research project related to the "in vivo" characterization of the central nervous system penetration and

potential abuse evaluation of some new psychoactive drugs, called "New Psychoactive Substances", to establish how they work to produce changes in brain chemistry and how these changes may reinforce drug seeking behavior.

May 2013 –
September 2014

Experimental Master Thesis

Laboratory of Experimental Psychopharmacology, IRCCS-Mario Negri Institute for Pharmacological Research, Milan, Italy. <http://www.marionegri.it/>

Description: I investigated how chronic nicotine exposure during adolescence could alter sensibility and rewarding properties of cocaine in young-adult rats testing the *gateway hypothesis* formulated by D. Kandel in 1975. Experimental approaches include kinetic analysis of each compound followed by behavioral tests on rodents.

Personal Skills

Native language(s) Italian

Other language(s)

	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken interaction	Spoken production	
English	B2	B2	B2	B2	B2
French	B1	B1	A2	A2	A2

Levels: A1/2: Basic user - B1/2: Independent user - C1/2 Proficient user
Common European Framework of Reference for Languages

Technical skills

- **Behavioral biology:** proficiency in the handling of laboratory rodents in specific pathogen free animal facility. Behavioral tests used: Operant Self-Administration, Conditioned Place Preference, Home-cage 2-bottle choice, Elevated Plus Maze, Open Field, Hot Plate, Tail Flick, Rotarod, Novel Object Recognition Test, Morris Water Maze, Forced Swimming Test and Tail Suspension Test.
- **Aseptic Surgical Techniques:** external jugular vein cannulation in rat for self-administration paradigm. Insertion of catheters for intrathecal drug delivery. Sciatic nerve constriction for studying the neuropathic pain. Stereotactic surgery for implantation of microdialysis probes and for micro injections. CSF sampling from cisterna magna.
- **Analytical techniques:** experience in modern analytical techniques (HPLC/UPLC, LC-MS, and various spectroscopic methods including fluorescence, UV-Vis, IR).
- **Human resource management:** coordination of internal staff and undergraduate students work. Problem-solving skills in analytical instruments, computer systems and behavioral tests.

Computer skills programs

- Excellent knowledge of Windows and Macintosh environments, Office and iWork packages, Photoshop and Illustrator
- Advanced knowledge of statistical packages (GraphPad® Prism8 and JMP 12 Pro®) and multivariate data analysis (SIMCA®)
- Use of dedicated software for self-administration (MED-PC IV), place preference (TSE), to analyze animals' behavior (Noldus EthoVision 13) and chromatographic/mass-spectrometric data (Masslynx 4.X/Progenesis QI 2.3)
- Good knowledge of EndNote X9 and other reference manager
- Basic knowledge of MATLAB and R

Related skills

- Organizing the monthly "**Open Neuroscience forum**" event held at University of Verona (December 2016 - July 2018) in partnership with the Neuroscience National Institute. <http://www.ist-nazionale-neuroscienze.unito.it/>

Driving License

- Italian driver license: category B vehicle

Awards and Fellowships

- October 2017-
November 2020 **Doctoral Scholarship**
Department of Biotechnology, University of Verona, Verona, Italy
- April 2018 **FENS/IBRO-PERC** travel grant award in the amount of 750€ to attend the 11th FENS Forum (Berlin, Germany, 7-11 July 2018)
- July 2019 **IBRO (International Brain Research Organization) International Travel Grant** to attend the 43rd Annual Meeting of the Japan Neuroscience Society "Theories of the brain" (Kobe JAPAN, July 29 - August 1, 2020)

Additional Information

Publications

Moro F, Giannotti G, Caffino L, **Marzo CM**, Di Clemente A, Fumagalli F, Cervo L. "Lasting reduction of nicotine seeking-behavior by chronic N-acetylcysteine during experimental cue-exposure therapy". *Addict Biol.* 2020 Jul;25(4):e12771. Epub 2019 May 27. DOI: <https://doi.org/10.1111/adb.12771>

Lucchetti J, **Marzo CM**, Passoni A, Moro F, Di Clemente A, Bagnati R, Cervo L, Gobbi M. "Brain disposition, metabolism and behavioral effects of the synthetic opioid AH-7921 in rats." *Neuropharmacology.* 2018 May 1;133:51-62. Epub 2018 Jan 31. DOI: <https://doi.org/10.1016/j.neuropharm.2018.01.023>

Moro F, Orrù A, **Marzo CM**, Di Clemente A, Cervo L. "mGluR2/3 mediates short-term control of nicotine-seeking by acute systemic N-acetylcysteine". *Addict Biol.* 2018 Jan;23(1):28-40. Epub 2016 Aug 24. DOI: <https://doi.org/10.1111/adb.12443>

Lucchetti J, **Marzo CM**, Passoni A, Di Clemente A, Moro F, Bagnati R, Gobbi M, Cervo L. "Brain disposition of cis-para-methyl-4-methylaminorex (cis-4,4'-DMAR) and its potential metabolites after acute and chronic treatment in rats: correlation with central behavioral effects". *J Pharmacol Exp Ther.* 2017 Jun;361(3):492-500. Epub 2017 Apr 12. DOI: <https://doi.org/10.1124/jpet.117.240788>

Ballerini A, Moro F, Nerini IF, **Marzo CM**, Di Clemente A, Ferrari M, D'Incalci M, Biondi A, Colombini A, Conter V, Porcu L, Cervo L, Rizzari C, Zucchetti M. "Pharmacodynamic effects in the cerebrospinal fluid of rats after intravenous administration of different asparaginase formulations". *Cancer Chemother Pharmacol.* 2017 Jun;79(6):1267-1271. Epub 2017 Apr 19. DOI: <https://doi.org/10.1007/s00280-017-3307-8>

Lucchetti J, **Marzo CM**, Di Clemente A, Cervo L, Gobbi M. "A validated, sensitive HPLC-MS/MS method for quantification of cis-para-methyl-4-methylaminorex (cis-4,4'-DMAR) in rat and human plasma: application to pharmacokinetic studies in rats". *Drug Test Anal.* 2017 Jun;9(6):870-879. Epub 2016 Sep 21. DOI: <https://doi.org/10.1002/dta.2052>

Chiamulera C, **Marzo CM**, Balfour DJ. "Metabotropic glutamate receptor 5 as a potential target for smoking cessation". *Psychopharmacology (Berl).* 2017 May;234(9-10):1357-1370. Epub 2016 Nov 16. Review. DOI: <https://doi.org/10.1007/s00213-016-4487-3>

Posters

Marzo CM, Bianconi M, Chiamulera C, Guzzo F. Evaluation of antidepressant-like activity of kiwifruit (*Actinidia deliciosa*) extract on mouse models of depression. HPLC 2019, Milan, June 16-20, 2019

Marzo CM, Bianconi M, Comisso M, Chiamulera C, Guzzo F. Evaluation of antidepressant-like activity of kiwifruit (*Actinidia deliciosa*) in mice. 48th Annual meeting of the Society for Neuroscience, San Diego, CA, November 3-7, 2018

Marzo CM, Bianconi M, Comisso M, Chiamulera C, Guzzo F. Antidepressant-like effect of kiwifruit (*Actinidia deliciosa*) extract on mouse models of depression. 11th FENS Forum of Neuroscience, Berlin, July 7-11, 2018

Passoni A, Lucchetti J, **Marzo CM**, Cervo L, Gobbi M, Bagnati R. In silico prediction of 4,4'-DMAR metabolism and in vivo confirmation in rats by high resolution mass spectrometry. MASSA 2016, Rome, September 6-8, 2016

Lucchetti J, Passoni A, **Marzo CM**, Cervo L, Bagnati R, Gobbi M. Evaluation of pharmacokinetic profile of the "new psychoactive substance" AH-7921 and analysis of its in vivo metabolism, by high resolution mass spectrometry. MASSA 2016, Rome, September 6-8, 2016

Marzo CM, Lucchetti J, Moro F, Gobbi M, Cervo L. Characterization of AH-7921, a synthetic designer opioid. 10th FENS Forum of Neuroscience, Copenhagen, July 2-6, 2016

Moro F, Giannotti G, **Marzo CM**, Caffino L, Di Clemente A, Fumagalli F, Cervo L. Effects of repeated N-acetylcysteine

on cue-induced nicotine-seeking behavior in rats. 10th FENS Forum of Neuroscience, Copenhagen, July 2-6, 2016

Marzo CM, Lucchetti J, Moro F, Di Clemente A, Gobbi M, Cervo L. Characterization of 4,4'-DMAR, a synthetic psychostimulant designer drug. IV International Conference on Novel Psychoactive Substances, Budapest, May 30-31, 2016

Lucchetti J, **Marzo CM**, Di Clemente A, Cervo L, Gobbi M. Validation of a new HPLC-MS/MS method for quantification of 4,4'-DMAR in human and rat plasma: application to pharmacokinetic studies in rat. IV International Conference on Novel Psychoactive Substances, Budapest, May 30-31, 2016

Lucchetti J, Passoni A, **Marzo CM**, Cervo L, Bagnati R, Gobbi M. Evaluation of the brain-to-plasma distribution of AH-7921 and semi-quantitative analysis of its main metabolites in rats. IV International Conference on Novel Psychoactive Substances, Budapest, May 30-31, 2016

Moro F, Giannotti G, **Marzo CM**, Di Clemente A, Fumagalli F, Cervo L. Chronic N-acetylcysteine treatment promotes extinction of conditioned cue-induced nicotine-seeking behavior in the rat. FENS-SfN Summer School 2016. Cellular mechanisms and networks in addiction. 29 May - 4 June 2016, Bertinoro, Italy.

Moro F, Giannotti G, **Marzo CM**, Di Clemente A, Fumagalli F and Cervo L. Effects of single and repeated N-acetylcysteine on cue-induced nicotine-seeking behavior in rats. 45th Annual meeting of the Society for Neuroscience, Chicago, IL, October 17-21, 2015

Cervo L, Di Clemente A, **Marzo CM**, and Moro F. Chronic n-acetylcysteine treatment promotes extinction of conditioned cue-induced nicotine-seeking behavior in the rat. 4th International Conference and Exhibition on Addiction Research & Therapy, Florida, USA, August 03-05, 2015. J Addict Res Ther doi: 10.4172/2155-6105.S1.022

Moro F, Di Clemente A, **Marzo CM**, and Cervo L. Chronic but not acute N-acetylcysteine promotes extinction of nicotine-cue conditioned responding. 9th FENS Forum of Neuroscience, Milan, July 5-9, 2014

Oral Presentation

Moro F, **Marzo CM**, Di Clemente A and Cervo L. "Acetilcisteina e nicotina: meccanismo ed efficacia di un nuovo/vecchio farmaco" XII Congresso Nazionale Società Italiana di Tabaccologia, Milan, Italy 2016

Moro F, Di Clemente A, **Marzo CM** and Cervo L. "Acute and chronic N-acetylcysteine on cue induced nicotine seeking behavior" NEURONUS 2015 IBRO & IRUN Neuroscience Forum, Krakow, Poland.

Moro F, Di Clemente A, **Marzo CM** and Cervo L. "Effects of single and repeated N-acetylcysteine on cue-induced nicotine-seeking behavior", Monothematic Congress of the Italian Society of Pharm. "Addictive disorders from neurobiology to novel therapeutic strategies", Palermo, Italy 2015.

Moro F, Di Clemente A, **Marzo CM** and Cervo L. "L'N-Acetilcisteina Previene la Ricaduta nella Ricerca di Nicotina Durante l'Astinenza: Effetti Acuti e Cronici" XVIII Congress of the Italian Society of Psychopharmacology, Turin, Italy 2014.

Moro F, Di Clemente A, **Marzo CM** and Cervo L. "Prevention of nicotine-seeking behavior by glutamatergic therapy: role of mglu2/3 receptors" Monothematic Congress of the Italian Society of Pharm. "Old & New Drugs of Abuse", Verona, Italy 2013.

Courses

- **Waters® General Liquid Chromatography (LC) eLearning track** (February 2021) with individual modules:
 - Solvent Considerations (part number 750000657)
 - Binary vs. Quaternary Gradient Systems (part number 750000658)
 - LC Contamination Issues (part number 750000659)
 - Optimizing Sample Injection (part number 750000787)
 - Optimizing UV Detection (part number 750000773)
 - Achieving the Best LC Peak Shape (part number 750000788)
 - HPLC and UPLC Best practices and troubleshooting (part number 750000988)
- **Multivariate Data Analysis, Advanced Course** (December 2020, Sartorius Stedim Data Analytics AB)
- **Introduction to Python for Data Science** (November 2020, Xstream/University of Pavia)
- **Multivariate Data Analysis, Basic Course** (October 2019, Sartorius Stedim Data Analytics AB)
- **Winter School in Microscopical Sciences** (November 2017 – November 2018, University of Verona)
- **Waters® Xevo G2-XS QTOF Operator Training** (November 2017, University of Verona)
- **Waters® Acquity I-class UPLC and Xevo G2-XS QTOF familiarization** (November 2017, University of Verona)
- **Course on Dissection of human cadavers** (November 2017, University of Verona/ICLO Teaching and Research Center)
- **MATLAB® Course** (March 2017, University of Verona)
- **C.I.R.S.A.L. Course on Animal Care** (November 2016, University of Verona)

- **Introductory Course in Animal Testing** (May 2013, IRCCS-Mario Negri Institute for Pharmacological Research)