

LAURA SOVERCHIA

School of Pharmacy/ University of Camerino /Italy

laura.soverchia@unicam.it

RESEARCH INTEREST

The primary focus of my research has been elucidating the neurobiological mechanisms underlying the genetic vulnerability to substance abuse as well as the discovery of potential pharmacotherapeutic candidates for the treatment of addiction at a preclinical level. Over the last ten years, I have studied different substances of abuse, including alcohol and cocaine, analyzing the role of positive and negative reinforcement mechanisms. Moreover combining pharmacological manipulation such as intracranial injection of pharmacological agents with molecular biology and immunohistochemistry approaches, I have studied the link between addiction and different neurotransmitter systems including N/OFQ-NOP, NPS-NPSR and PPAR γ . My research activity has uncovered new potential drug targets for the treatments of addiction-related behaviors. This work has been carried out in collaboration with different research groups across the EU and USA and has generated a considerable amount of data. I have an interdisciplinary background in behavioral pharmacology, genetics and molecular biology.

EDUCATION

Degree in Biological Sciences	1994 Camerino, Italy UNICAM
Master in Biochemistry and Clinical Analysis	1995 - 1998 Camerino, Italy UNICAM
Post Doctoral fellow on CNS RNA-binding proteins studies	1999 -2000 San Diego, USA SCRIPPS
Post Doctoral fellow on microarray studies	2001-2002 San Diego, USA UCSD

Post Doctoral fellow on drug abuse studies

2002-2024
Camerino, Italy
UNICAM

GRANTS

USA UO1-DA045300 Kalivas (Co), Ciccocioppo (PI) (2019-2024) "Genetic basis of opioid dependence vulnerability in a rodent model"

Role of Soverchia: Co-investigator

PRIN 2017 Ciccocioppo (Co) (2019-2022) "Early life social experiences and dysregulation of the brain reward system: The role of endocannabinoid transmission."

Role of Soverchia: Co-investigator

USA RO1 AA017447 Ciccocioppo (PI) (2016-2021) "Gene-Environment Interaction: Focus on the Brain CRF System in Alcohol Preferring msP Rats"

Role of Soverchia: Co-investigator

Progetto NS-Drugs, Presidenza Del Consiglio dei Ministri, Dipartimento delle Politiche Antidroga 2014-2016. "Studio multidisciplinare degli effetti farmaco-tossicologici e fisiopatologici di nuove molecole psicoattive sintetiche (Novel Synthetic Drugs, NS-Drugs) per comprendere le possibili alterazioni psico-fisiche nei guidatori di autoveicoli".

Role of Soverchia: Principal -investigator (PI)

1R01AA017447-01² (Co-ordinatore: Roberto M) 2009

Gene-environment interaction:the brain CRF system in alcohol preferring msP rats

Role of Soverchia: Co-investigator

1-R01-DA017097 Weiss (PI), 2003- 2008, NIH/NIDA

Dysregulation of Brain Stress System and Propensity to Relapse

Role of Soverchia: Co-investigator

EU "Transfer of Knowledge Human Mobility Program"

N° FP6-509242 Acronin "INFONOMIC" (Co-ordinatore: Ciccocioppo) 2004-2006

"To spread Bioinformatic Knowledge applied to functional genomic"

Role of Soverchia: Co-investigator

1-R01-AA925-0001 Weiss (PI), Ciccocioppo (PI), 2004- 2020, NIH/NIAAA

The nociceptin ORL1 System: Treatment target for relapse

Role of Soverchia: Co-investigator

Agenzia: EU N° FP6-509242 Acronim "INFONOMIC" "Transfer of Knowledge Human Mobility Program" **2004-2007**

Ciccocioppo co-ordinator

"To spread Bioinformatic Knowledge applied to functional genomic"

Role of Soverchia: Co-investigator

Agenzia: (MIUR) Ministero dell'Istruzione, dell'Università e della Ricerca. Progetto FIRB

2003: Metodologie e tecnologie innovative per la Farmaceutica.

Coordinatore: Gloria Cristalli

Role of Soverchia: Co-investigator

Agenzia: Regione Marche: CIPE **2003**: Biotecnologie applicate alla qualità e alla sicurezza delle produzioni ittiche.

Coordinatore: Alberta Polzonetti

Role of Soverchia: Co-investigator

Progetto Carima **2003**. DNA chips per il monitoraggio dell'inquinamento nelle acque del nostro territorio.

Coordinatore: Roberto Ciccocioppo

Role of Soverchia: Co-investigator

QLRT-20001-01048 (Co-ordinator: Heilig), **2002-2005**

EU- "Quality of life and management of living resources"

Call Identifier Qol-2001-3

Identification and validation of molecular targets for pharmacological treatments of alcohol dependence.

Role of Soverchia: Co-investigator

1-R21-AA12880-01 Geary (PI), **2001-2003**, NIH/NIAAA

Control of alcohol intake by brain-gut peptides.

The major goal of this study is to evaluate how ethanol intake can be modulated by peptides involved

Role of Soverchia: Co-investigator

5 year PUBLICATIONS

Long-access heroin self-administration induces region specific reduction of grey matter volume and microglia reactivity in the rat.

Cannella N, Tambalo S, Lunerti V, Scuppa G, de Vivo L, Abdulmalek S, Kinen A, Mackle J, Kuhn B, Solberg Woods LC, Chung D, Kalivas P, **Soverchia L**, Ubaldi M, Hardiman G, Bifone A, Ciccocioppo R. *Brain Behav Immun*. **2024** Mar 5;S0889-1591(24)00283-6. doi: 10.1016/j.bbi.2024.03.003. Online ahead of print. PMID: 38452987

Early social isolation differentially affects the glucocorticoid receptor system and alcohol-seeking behavior in male and female Marchigian Sardinian alcohol-preferring rats.

Benvenuti F, De Carlo S, Rullo L, Caffino L, Losapio LM, Morosini C, Ubaldi M, Soverchia L, Cannella N, Domi E, Candeletti S, Mottarlini F, Fattore L, Romualdi P, Fumagalli F, Trezza V, Roberto M, Ciccocioppo R. *Neurobiol Stress*. **2023** Dec 7;28:100598. doi: 10.1016/2023.100598. PMID: 38115888

Administration of Linoleoylethanolamide Reduced Weight Gain, Dyslipidemia, and Inflammation Associated with High-Fat-Diet-Induced Obesity.

Tovar R, de Ceglia M, Ubaldi M, Rodríguez-Pozo M, Soverchia L, Cifani C, Rojo G, Gavito A, Hernandez-Folgado L, Jagerovic N, Ciccocioppo R, Baixeras E, Rodríguez de Fonseca F, Decara J. *Nutrients*. **2023** Oct 20;15(20):4448. doi: 10.3390/nu15204448. PMID: 37892524

Cebranopadol, a novel long-acting opioid agonist with low abuse liability, to treat opioid use disorder: Preclinical evidence of efficacy.

Lunerti V, Shen Q, Li H, Benvenuti F, Soverchia L, Narendran R, Weiss F, Cannella N, Ciccocioppo R. *bioRxiv*. **2023** Jul 25:2023.07.21.550008. doi: 10.1101/2023.07.21.550008. PMID: 37546836

Psilocybin prevents reinstatement of alcohol seeking by disrupting the reconsolidation of alcohol-related memories.

Benvenuti F, Colombo D, Soverchia L, Cannella N, Domi E, Ciccocioppo R. *Psychopharmacology (Berl)*. **2023** Jul;240(7):1521-1530. doi: 10.1007/s00213-023-06384-w. Epub 2023 Jun 2. PMID: 37266686

A Role for Neuropeptide S in Alcohol and Cocaine Seeking.

Cannella N, Borruto AM, Petrella M, Micioni Di Bonaventura MV, Soverchia L, Cifani C, De Carlo S, Domi E, Ubaldi M. *Pharmaceuticals (Basel)*. **2022** Jun 27;15(7):800. doi: 10.3390/ph15070800. PMID: 35890099

The multitarget FAAH inhibitor/D3 partial agonist ARN15381 decreases nicotine self-administration in male rats.

Lunerti V, Li H, Benvenuti F, Shen Q, Domi A, Soverchia L, Concetta Di Martino RM, Bottegoni G, Haass-Koffler CL, Cannella N. *Eur J Pharmacol*. **2022** Aug 5;928:175088. doi: 10.1016/j.ejphar.2022.175088. Epub 2022 Jun 8. PMID: 35690082

Role of Nociceptin/Orphanin FQ-NOP Receptor System in the Regulation of Stress-Related Disorders.

Ubaldi M, Cannella N, Borruto AM, Petrella M, Micioni Di Bonaventura MV, Soverchia L, Stopponi S, Weiss F, Cifani C, Ciccocioppo R. *Int J Mol Sci*. **2021** Nov 30;22(23):12956. doi: 10.3390/ijms222312956. PMID: 34884757

Palmitoleylethanolamide Is an Efficient Anti-Obesity Endogenous Compound: Comparison with Oleylethanolamide in Diet-Induced Obesity.

Tovar R, Gavito AL, Vargas A, **Soverchia L**, Hernandez-Folgado L, Jagerovic N, Baixeras E, Ciccocioppo R, Rodríguez de Fonseca F, Decara J. *Nutrients*. **2021** Jul 28;13(8):2589. doi: 10.3390/nu13082589. PMID: 34444748

Effect of Glucocorticoid Receptor Antagonism on Alcohol Self-Administration in Genetically-Selected Marchigian Sardinian Alcohol-Preferring and Non-Preferring Wistar Rats.

Benvenuti F, Cannella N, Stopponi S, **Soverchia L**, Ubaldi M, Lunerti V, Vozella V, Cruz B, Roberto M, Ciccocioppo R. *Int J Mol Sci*. **2021** Apr 17;22(8):4184. doi: 10.3390/ijms22084184. PMID: 33920737

Pharmacological and Behavioral Effects of the Synthetic Cannabinoid AKB48 in Rats.

Bilel S, Tirri M, Arfè R, Stopponi S, **Soverchia L**, Ciccocioppo R, Frisoni P, Strano-Rossi S, Miliano C, De-Giorgio F, Serpelloni G, Fantinati A, De Luca MA, Neri M, Marti M. *Front Neurosci*. **2019** Oct 30;13:1163. doi: 10.3389/fnins.2019.01163. eCollection 2019. PMID: 31736697

Biomarkers mapping of neuropathic pain in a nerve chronic constriction injury mice model.

Vincenzetti S, Pucciarelli S, Huang Y, Ricciutelli M, Lambertucci C, Volpini R, Scuppa G, **Soverchia L**, Ubaldi M, Polzonetti V. *Biochimie*. **2019** Mar;158:172-179. doi: 10.1016/j.biochi.2019.01.005. Epub 2019 Jan 11. PMID: 30639439

BOOK CHAPTERS

Anna Maria Borruto, Ana Domi, **Laura Soverchia**, Esi Domi, Hongwu Li, and Nazzareno Cannella
Preclinical Models of Relapse to Psychostimulants Induced by Environmental Stimuli (**2022**)
Methods for Preclinical Research in Addiction, Neuromethods 174, Humana Press.

Massimo Ubaldi, Wolfgang Sommer, **Laura Soverchia**, Anbarasu Lourdusamy, Barbara Ruggeri, Roberto Ciccocioppo and Gary Hardiman. (**2009**) Microarray in neuroscience. In: *Microarray Innovations: Technology and Experimentation in Drug Discovery and Biomedical Research*. CRC Press/Taylor and Francis. Hardiman Eds.

Anbarasu Lourdusamy, Massimo Ubaldi, **Laura Soverchia**, Gary Hardiman, Roberto Ciccocioppo (**2009**) Introduction to large-scale gene expression data analysis. *Microarray in neuroscience*. In: *Microarray Innovations: Technology and Experimentation in Drug Discovery and Biomedical Research*. CRC Press/Taylor and Francis. Hardiman Eds.

L. Soverchia, G. Mosconi, F. Palermo, B. Ruggeri, M. Ubaldi, M.F. Franzoni, A.M. Polzonetti-Magni. (**2007**) Molecular strategies and xenoestrogen dependent effects on fish and amphibian reproductive

cascade. In: Evolutionary molecular strategies and plasticity. Research Signpost Press. Canonaco and Facciolo, Eds.

Barbara Ruggeri, **Laura Soverchia**, Massimo Ubaldi, Roberto Ciccocioppo, and Gary Hardiman (2006) Amplification Strategies and DNA Biochips In: Biochips as Pathways to Drug Discovery. CRC Press. Carmen and Hardiman, Eds. 253-260.