# Anna PRIVITERA


Nationality: Italian
Phone numbers: (+39)334-2912978
Address: Via Giordano Bruno, 62, 95042, Grammichele (CT)
E-mail: annaprivitera01@gmail.com


## Education

Present **PhD in Neuroscience with Prof. Filippo Caraci (Tutor) and Prof. Giuseppe Caruso (co-tutor)**, Department of Drug and Health Sciences, University of Catania, Italy

- **PhD thesis**: *Synergistic anti-inflammatory effects of carnosine and second-generation antidepressants in experimental models of depression: modulation of microglia activity and role of TGF-β1 pathway.*

July 2021 **Qualifying examination to work as a biologist**, Animal Biology, Cytology and Histology Department "Marcello La Greca", University of Catania (Italy)

Apr. 2021 **MSc in Biological sciences - Cellular and Molecular with Prof. Maria Violetta Bruno,** University of Catania (Italy)

- **M.Sc. thesis:** *Sex-dependent changes in microglia soma in the hippocampus of mice following Staphylococcus epidermidis neonatal infection*
- Earned on April 2021 with grade of **110/110 With Honors**

Sept. 2018 **BSc in Biological sciences with Prof. Giuseppe Lazzarino**, University of Catania (Italy)

- **B.Sc. thesis*:*** *Molecular mechanism and pharmacological treatment of psoriasis*
- Earned in September 2018 with grade of **110/110**

## Professional service

**Special Issues/Research Topics**

Nov. 2022 – Present Guest Editor Assistant of the Special Issue *"The Therapeutic Potential of Naturally Occurring Compounds in Counteracting Oxidative Stress and Inflammation: From Basic Science to Therapy 2.0"* (Journal: Molecules)

March 2023 – Present Guest Editor Assistant of the Special Issue *"Special Issue in Honor of Prof. Susan Lunte's 65th Birthday: When Microfluidics Meets Pharmacology: From Cell Biology and Toxicology to Drug Discovery and Development"* (Journal: International Journal of Molecular Sciences)

## Teaching experience

Since Jan 2022 — Co-tutor of theses in the field of Pharmacology at the University of Catania: Biological Sciences (1) and Applied Pharmaceutical Sciences (1)

## Research experience

March 2020 – Aug 2020 — **Visiting Student** at Sahlgrenska Academy, University of Gothenburg, Sweden

As a recipient of two different scholarships (Erasmus+ and MIUR), I had the opportunity to spend 3 months (March 2020 – May 2020) at the Sahlgrenska Academy. Under the supervision of Prof. Carina Mallard, I performed both *in vitro* and *in vivo* experiments related to the study of the role of neonatal sepsis on neurological development. In particular, by employing immunohistochemical methods and performing stereological analysis, I was able to study neurodegeneration and neuroinflammation in the CA1 region as well as in the molecular dentate gyrus (MDG) of the hippocampus of mice infected with *Staphylococcus epidermidis*. As a part of my experimental thesis, during the next 3 months (Jun 2020 – Aug 2020), I continued to collaborate with Prof. Mallard's group via Smart Working. In particular, I analyzed the data obtained during my stay in Sweden and drafted my thesis in which Prof. Mallard acted as a co-tutor.

June 2022 — **Adjunct Researcher Affiliate** at the University of Kansas (KU), Lawrence, Kansas, USA

As a part of my PhD at the University in Catania, I spent a month at KU, Department of Pharmaceutical Chemistry, under the supervision of Prof. Susan M. Lunte and Prof. Giuseppe Caruso, where I had the opportunity to perform *in vitro* experiments employing different cell types such as macrophages (RAW 264.7) and microglia (HMC3 and BV-2 cells). Cells were stimulated with different molecules (e.g., Aβ oligomers, cortisol, LPS, lithium, spike), in absence or presence of carnosine and/or fluoxetine with the aim to measure the production of molecules related to oxidative stress through microchip electrophoresis coupled to laser-induced fluorescence.

## Honors and awards

January 2023 — The publication *"Phenolic Acids and Prevention of Cognitive Decline: Polyphenols with a Neuroprotective Role in Cognitive Disorders and Alzheimer's Disease"* has been selected as one of the Editor's Choice Articles (Journal: Nutrients)

Dec 2019 — MIUR Scholarship (6 months) (Italy)

Jun 2019 — ERASMUS+ Scholarship (6 months) (Italy)

Apr 2021 — Cum laude honors for MSc degree

## Bibliometric parameters

- Total number of publications: 10 (see below for the full list)
- *h*-index: 4 (Source Scopus)
- Total number of citations: 65 (Source Scopus)

## Published Journal Articles

1. Bonaccorso A, **Privitera A**, Grasso M, Salamone S, Carbone C, Pignatello R, Musumeci T, Caraci F and Caruso G. "The Therapeutic Potential of Novel Carnosine Formulations: Perspectives for Drug Development" (2023) *Pharmaceuticals*. doi: 10.3390/ph16060778
2. **Privitera A**, Cardaci V, Weerasekara D, Saab MW, Diolosà L, Fidilio A, Jolivet RB, Lazzarino G, Amorini AM, Camarda M, Lunte SM, Caraci F, Caruso G. "Microfluidic/HPLC combination to study carnosine protective activity on challenged human microglia: focus on oxidative stress and energy metabolism " (2023) *Front. Pharmacol.* doi: 10.3389/fphar.2023.1161794
3. Caruso G, Scalisi EM, Pecoraro R, Cardaci V, **Privitera A**, Truglio E, Capparucci F, Jarosova R, Salvaggio A, Caraci F, Brundo MV. "Effects of carnosine on the embryonic development and $TiO_2$ nanoparticles-induced oxidative stress on Zebrafish" (2023) *Front. Vet. Sci.* doi: 10.3389/fvets.2023.1148766.
4. Caruso G, **Privitera A**, Saab MW, Musso N, Maugeri S, Fidilio A, Privitera APE, Pittalà A, Jolivet RB, Lanzanò L, Lazzarino G, Caraci F, Amorini AM. "Characterization of Carnosine Effect on Human Microglial Cells under Basal Conditions" (2023) *Biomedicines* **11**:474. doi:10.3390/biomedicines11020474.
5. Fidilio A, Grasso M, Caruso G, Musso N, Begni V, **Privitera A**, Torrisi SA, Campolongo P, Schiavone S, Tascedda F, Leggio GM, Drago F, Riva MA, Caraci F. "Prenatal stress induces a depressive-like phenotype in adolescent rats: The key role of TGF-β1 pathway" (2022) *Front. Pharmacol.* **13**:1075746. doi: 10.3389/fphar.2022.1075746.
6. Aldawsari HM, Badr-Eldin SM, Assiri NY, Alhakamy NA, **Privitera A**, Caraci F, Caruso G. "Surface-tailoring of emulsomes for boosting brain delivery of vinpocetine via intranasal route: in vitro optimization and in vivo pharmacokinetic assessment" (2022) *Drug delivery* **29**:2671-2684. doi:10.1080/10717544.2022.2110996.
7. Caruso G, **Privitera A**, Antunes BM, Lazzarino G, Lunte MS, Aldini G, Caraci F. "The Therapeutic Potential of Carnosine as an Antidote against Drug-Induced Cardiotoxicity and Neurotoxicity: Focus on Nrf2 Pathway" (2022) *Molecules* **27**:4452. doi:10.3390/molecules27144452.
8. Alhakamy NA, Caruso G, **Privitera A**, Ahmed AAO, Mohamed A, Sabrin RM Ibrahim, Basma GE, Abdel-Naim AB, Caraci F. "Fluoxetine Ecofriendly Nanoemulsion Enhances Wound Healing in Diabetic Rats: In Vivo Efficacy Assessment" (2022) *Pharmaceutics* **14**:1133. doi:10.3390/pharmaceutics14061133.

9. Caruso G, Godos J, **Privitera A**, Lanza G, Castellano S, Chillemi A, Bruni O, Ferri R, Caraci F, Grosso G. “Phenolic Acids and Prevention of Cognitive Decline: Polyphenols with a Neuroprotective Role in Cognitive Disorders and Alzheimer's Disease” (2022) *Nutrients* **14**:819. doi: 10.3390/nu14040819.
10. Caruso G, Grasso M, Fidilio A, Torrisi SA, Musso N, Geraci F, Tropea MR, **Privitera A**, Tascedda F, Puzzo D, Salomone S, Drago F, Leggio GM, Caraci F. “Antioxidant Activity of Fluoxetine and Vortioxetine in a Non-Transgenic Animal Model of Alzheimer's Disease” (2021) *Front. Pharmacol.* **12**:809541. doi: 10.3389/fphar.2021.809541.

## Posters at international conferences

- Alhakamy N A, Caruso G, **Privitera A***, Ahmed A A O, …Abdel-Naim A B, Caraci F. *Fluoxetine Ecofriendly Nanoemulsion Enhances Wound Healing in Diabetic Rats: In Vivo Efficacy Assessment.* 41° Congresso Nazionale della Società Italiana di Farmacologia, Roma (Italy), Nov 16$^{th}$-19$^{th}$, 2022. (Poster) (*Presenting author)

## Experimental techniques

Use of: Microfluidic devices; Laser-induced fluorescence; Immunofluorescence; MTT assay and trypan blue exclusion test; Griess assay; Extraction of DNA, RNA. and proteins; Quantitative Real-time PCR; Laboratory equipment; Spectrophotometer; Spectrofluorometer; Optical and Fluorescence microscopes; Cryostat; Centrifuges; Propagation and treatment of cell cultures; Sectioning and storage of brain samples; Immunohistochemical stains (Iba1, GFAP, CD31, Nissl); Morphological evaluation of neonatal brain changes; Evaluation of bacterial growth; HPLC.

## Computing skills

MS Office, Windows OS, EndNote, GraphPad, Fiji.

## Languages

- **Italian**: mother tongue
- **English**: C1 certification (writing, reading, and speaking)

## Membership of professional societies

Oct 2022 – Present Società Italiana di Farmacologia (SIF)

## References


- Prof. Filippo Caraci, University of Catania - E-mail: fcaraci@unict.it
- Prof. Giuseppe Caruso, University of Catania - E-mail: giuseppe.caruso2@unict.it
- Prof. Susan M. Lunte, University of Kansas - E-mail: slunte@ku.edu
- Prof. Giuseppe Lazzarino, University of Catania - E-mail: lazzarig@unict.it
- Prof. Maria Violetta Brundo, University of Catania - E-mail: mvbrundo@unict.it