

**EUROPEAN
CURRICULUM VITAE
ELEONORA ROSINA**



PERSONAL INFORMATION

First Name and Surname **Eleonora Rosina**
e-mail eleonora.rosina@unicamillus.org

Nationality Italian

Date and place of birth 29/09/1987, Rome (Italy)

ORCID ID 0000-0002-9055-348X

Current work position Researcher (*RTDa, art. 24 c.3-a L. 240/10*), SSD BIOS-10/A (BIO/13), Unicamillus - Saint Camillus International University of Health and Medical Sciences, Rome, Italy.

EDUCATION

Date **November 2020**
Title of qualification awarded Professional qualification biologist (State examination)
Name and type of organisation University of Rome "Tor Vergata".

Date **April 2020**
Title of qualification awarded PhD "European Label" in Neuroscience
Name and type of organisation Department of Biomedicine and Prevention. Faculty of Medicine and Surgery, University of Rome "Tor Vergata".
Mentor: Professor Claudia Bagni
Thesis title: "*Molecular basis of Autism Spectrum Disorder*"
PhD cum laude

Date **March 2016**
Title of qualification awarded Master degree in Medical Biotechnologies
Name and type of organisation Department of Biomedicine and Prevention. Faculty of Medicine and Surgery, University of Rome "Tor Vergata".
Internal Supervisor: Prof. Emiliano Giardina. External Supervisor and mentor: Prof. Claudia Bagni
Thesis title: "*Marcatori molecolari nei Disturbi dello Spettro Autistico: le vie di trasduzione del segnale che regolano la sintesi proteica*"
Final mark: 110/110 *cum laude*

Date **February 2013**
Title of qualification awarded Bachelor Degree in Human Biology
Name and type of organisation Department of Biology. Faculty of Mathematical, Physical and Natural Sciences, University of Rome "Tor Vergata".
Internal Supervisor: Prof. Patrizia Malaspina. External Supervisor and mentor: Prof. Jacqueline London

Thesis title: “*Il modello murino tgphAPP della trisomia 21 umana: effetti della sovraespressione del gene APP sul proteasoma 20s*”

Final mark: 95/110

WORK EXPERIENCE

- October 2024 – present** Researcher (*RTDa, art. 24 c.3-a L. 240/10*), SSD BIOS-10/A (BIO/13), Unicamillus - Saint Camillus International University of Health and Medical Sciences, Rome, Italy.
- August 2024 – October 2024** Recipient of a coordinated and continuous collaboration contract (Co.Co.Co.), Telethon Foundation. Laboratory of Molecular Neurobiology led by Professor Claudia Bagni, Department of Biomedicine and Prevention. Faculty of Medicine and Surgery, University of Rome “Tor Vergata”, Rome (Italy).
- June 2023 – May 2024** Post-doctoral research contract (*Assegnista di ricerca II Fascia, codice F2-2022-0047, SSD BIOS-10/A (BIO/13)*). Laboratory of Molecular Neurobiology led by Professor Claudia Bagni, Department of Biomedicine and Prevention. Faculty of Medicine and Surgery, University of Rome “Tor Vergata”, Rome (Italy).
- January 2020 – June 2023** Post-doctoral research contract (*Assegnista di ricerca I Fascia, codice F1-2019-0052, SSD BIOS-10/A (BIO/13)*). Laboratory of Molecular Neurobiology led by Professor Claudia Bagni, Department of Biomedicine and Prevention. Faculty of Medicine and Surgery, University of Rome “Tor Vergata”, Rome (Italy).
- November 2016 – December 2019** PhD student in Neuroscience. Laboratory of Molecular Neurobiology led by Professor Claudia Bagni, Department of Biomedicine and Prevention. Faculty of Medicine and Surgery, University of Rome “Tor Vergata”, Rome (Italy).
- February 2017 – October 2019** Visiting PhD student. Laboratory of Molecular Neurobiology led by Professor Claudia Bagni, Department of Fundamental Neurosciences. Faculty of Biology and Medicine, University of Lausanne (Lausanne, Switzerland).
- March 2016 – September 2016** Post-graduate internship. Laboratory of Molecular Neurobiology led by Professor Claudia Bagni, Department of Biomedicine and Prevention. Faculty of Medicine and Surgery, University of Rome “Tor Vergata”, Rome (Italy).
- November 2015 – December 2015** Visiting Scholar. Laboratory of Molecular Neurobiology led by Professor Claudia Bagni. VIB, Catholic University of Leuven (Leuven, Belgium).
- October 2014 – March 2016** Master thesis training in Medical Biotechnologies. Laboratory of Molecular Neurobiology led by Professor Claudia Bagni, Department of Biomedicine and Prevention. Faculty of Medicine and Surgery, University of Rome “Tor Vergata”, Rome (Italy)

TRAINING COURSES

- November 2022** Online training course “*Legislazione nazionale ed etica livello 1, moduli 1 e 2, DM 5 agosto 2021 – Single Edition*”, Experimental Zooprophyllactic Institute of Lombardy and Emilia-Romagna (Italy).
- November 2022** Online training course “*Biologia e gestione degli animali da laboratorio, moduli 3.1, 4, 5, 6.1, 7. DM 5 agosto 2021 roditori e lagomorfi - 1^a Edition*”, Experimental Zooprophyllactic Institute of Lombardy and Emilia-Romagna (Italy).
- November 2022** Online training course “*Etica e concezione dei progetti, moduli 9, 10, 11, DM 5 agosto 2021 - Single Edition*”, Experimental Zooprophyllactic Institute of Lombardy and Emilia-Romagna (Italy).
- June 2018** Summer school "Microbiota and The Brain" Neuroscience School of Advanced Studies - San Servolo Island, Venice (Italy).
- January 2018 – February 2018** Training course “Introduction to fluorescence imaging for the analysis of living cells” Lemanic Neuroscience Doctoral School (LNDS), Department of Fundamental Neurosciences. Faculty of Biology and Medicine, University of Lausanne, Lausanne (Switzerland).
- June 2017** Training course “RESAL Module 1: Introductory Course in Laboratory Animal Science Accredited as FELASA Category B Course 038/12 by T&T FELASA board Swiss Federation of Cantonal Veterinary Surgeons (ASCV)”, University of Lausanne, Lausanne (Switzerland).
- May 2016** Training course “*Accesso all'utilizzo delle strutture di servizio alla sperimentazione animale*” Interdepartmental Service Center, Station for Animal Technology (STA). Faculty of Medicine and Surgery, University of Rome “Tor Vergata”, Rome (Italy).

PARTICIPATION IN NATIONAL AND INTERNATIONAL RESEARCH PROJECTS (2016 -PRESENT)

CARIPLO Foundation

“*Shaping and reshaping the synapses: from physiology to Intellectual Disability syndromes*”.

Role in the project: Scholarship awarded

Principal Investigator (PI): Prof. Claudia Bagni

01/03/2014 - 28/02/2016

Angelini Pharma S.p.A.

“*Modulating GSK3 β activity to ameliorate Fragile X Syndrome*”.

Role in the project: personnel involved in the project

Principal Investigator (PI): Prof. Claudia Bagni

05/05/2019 - 30/04/2022

PRIN 2017 (201789LFKB)

Ministry of the University and Research

“*The APP-mitochondria axis in iPSCs derived-neurons from Fragile X related-disorders*”.

Role in the project: personnel involved in the project

Principal Investigator (PI): Prof. Claudia Bagni

29/08/2019 - 29/08/2022

Telethon Foundation (GGP20137)

“A new RNA-based therapy for the Fragile X Syndrome”.

Role in the project: Recipient of a coordinated and continuous collaboration contract (Co.Co.Co.)

Principal Investigator (PI): Prof. Claudia Bagni

01/08/2021 - 31/01/2025

Foundation Lejeune

“Shaping microglia function upon immune stimulation in a genetic model for Autism Spectrum Disorders”.

Role in the project: personnel involved in the project

Principal Investigator (PI): Dr. Antonietta Gentile

02/10/2023 - 01/10/2025

FELLOWSHIPS AND AWARDS

- October 2024 – present** Researcher (*RTDa, art. 24 c.3-a L. 240/10*), SSD BIOS-10/A (BIO/13), Unicamillus - Saint Camillus International University of Health and Medical Sciences, Rome, (Italy).
- August 2024 – October 2024** Recipient of a coordinated and continuous collaboration contract (Co.Co.Co.), Telethon Foundation. Laboratory of Molecular Neurobiology led by Professor Claudia Bagni, Department of Biomedicine and Prevention. Faculty of Medicine and Surgery, University of Rome “Tor Vergata”, Rome (Italy).
- September 2023** Travel grant (“Borsa congressuale”) for the XXI National Congress A.I.B.G. (Associazione Italiana di Biologia e Genetica Generale e Molecolare) meeting attendance.
- June 2023 – May 2024** Post-doctoral research contract (*Assegno di ricerca II Fascia, F2-2022-0047*, Telethon Foundation, GGP20137), SSD BIOS-10/A (BIO/13). Professor Claudia Bagni’s laboratory of Molecular Neurobiology, Department of Biomedicine and Prevention, Faculty of Medicine and Surgery, University of Rome “Tor Vergata”, Rome (Italy).
- January 2022 – May 2023** Post-doctoral research contract (*Assegno di ricerca I Fascia, F1-2019-0052*, Telethon Foundation, GGP20137), SSD BIOS-10/A (BIO/13). Professor Claudia Bagni’s laboratory of Molecular Neurobiology, Department of Biomedicine and Prevention, Faculty of Medicine and Surgery, University of Rome “Tor Vergata”, Rome (Italy).
- January 2020 – January 2022** Post-doctoral research contract (*Assegno di ricerca I Fascia, F1-2019-0052*, MUR - Prin 2017, 201789LFKB), SSD BIOS-10/A (BIO/13). Professor Claudia Bagni’s laboratory of Molecular Neurobiology, Department of Biomedicine and Prevention, Faculty of Medicine and Surgery, University of Rome “Tor Vergata”, Rome (Italy).
- March 2017 – March 2018** Fellowship (Telethon Foundation, GGP15257). Professor Claudia Bagni’s laboratory of Molecular Neurobiology, Department of

Biomedicine and Prevention, Faculty of Medicine and Surgery, University of Rome "Tor Vergata", Rome (Italy).

September 2016 – March 2017 Fellowship (CARIPLO Foundation). Professor Claudia Bagni's laboratory of Molecular Neurobiology, Department of Biomedicine and Prevention, Faculty of Medicine and Surgery, University of Rome "Tor Vergata", Rome (Italy).

April 2016 Awarded by "Associazione Italiana Ricerca in Neurologia Infantile" for the master thesis project, entitled "*Marcatori molecolari nei Disturbi dello Spettro Autistico: le vie di trasduzione del segnale che regolano la sintesi proteica*".

September 2009 – July 2010 Fellowship award for the Erasmus European Program by the University of Rome "Tor Vergata", for a 10-month period to study abroad, at the University Paris 7 "Denis Diderot" Faculty of Sciences, Paris (France).

TEACHING

A.Y. 2024/2025 "Docente" (5 CFU) of Applied Biology (SSD BIOS-10/A (BIO/13), Biology and Genetics course, coordinator Prof. Cinzia Ciccacci, MSc Dentistry and Dental Prosthetics. Saint Camillus International University of Health and Medical Sciences (UniCamillus) - Rome (Italy).

2020 - present "Docente a contratto" (2 CFU) of Applied Biology (SSD BIOS-10/A (BIO/13), Environmental chemistry and microbiology course, coordinator: Professor Fulvio Erba, Preventive Health Sciences Degree. Faculty of Medicine and Surgery. University of Rome "Tor Vergata", Rome (Italy).

2021 - present "Docente a contratto" (1 CFU) of Applied Biology (SSD BIOS-10/A (BIO/13), Biology and Genetics course, coordinator: Professor Claudia Bagni. MD program of Medicine and Surgery. Faculty of Medicine and Surgery. University of Rome "Tor Vergata", Rome (Italy).

2019 - 2021 Lecturer ("*cultore della materia*") of Applied Biology (SSD BIOS-10/A (BIO/13), Biology and Genetics course, coordinator: Professor Claudia Bagni. MD program of Medicine and Surgery. Faculty of Medicine and Surgery. University of Rome "Tor Vergata", Rome (Italy).

A.Y. 2019/2020 "Docente a contratto" (3 CFU) of Applied Biology (SSD BIOS-10/A (BIO/13), Biology and Genetics course, coordinator: Professor Laura Pacini. MSc Medicine and Surgery. Faculty of Medicine and Surgery. Saint Camillus International University of Health and Medical Sciences (UniCamillus), Rome (Italy).

2019 - Present Lecture of Applied Biology (SSD BIOS-10/A (BIO/13) entitled "Fragile X-associated Disorders" for students specializing in Gynaecology and obstetrics. University Hospital of Tor Vergata, Rome (Italy).

OTHER TEACHING ACTIVITIES

2019 - Present Daily supervision of rotation and master students (Chiara Palombo, Carlotta Ricci). Professor Claudia Bagni's laboratory of Molecular Neurobiology, Department of Biomedicine and Prevention, Faculty of Medicine and Surgery, University of Rome "Tor Vergata", Rome (Italy).

MOTHER TONGUE Italian

OTHER LANGUAGES English C1
French C1
Spanish A2

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

REVIEWER, JOURNALS *Ad hoc* Reviewer for: Neuron, Neuropsychopharmacology, Cell Reports Medicine, Science Advances, Nature Communications, Translational Psychiatry.

**ABSTRACTS AND MEETINGS
ATTENDED**

1. XXI National Congress A.I.B.G. (Associazione Italiana di Biologia e Genetica Generale e Molecolare): 21 – 23 September 2023. Bari, Italy. "Dysregulation of the mTOR-FMRP pathway and plasticity in an environmental model of ASD" Hilal L. M., **Rosina E.**, Restivo L. and Bagni C. **Oral presentation.**

2. 5th DNF Symposium "Diversity in the brain: From genes to functions": October 8th, 2021. Department of Fundamental Neurosciences, University of Lausanne, Lausanne, Switzerland.

3. FENS 2020 Virtual Forum: 11 – 15 July 2020.

4. The EBRI 2019 Rita Levi-Montalcini Lecture & 2nd Joint Symposium "EBRI - Hebrew University of Jerusalem - McGill University Emerging concepts on synaptic dynamics and their dysfunction in neurological disorders": 28 - 29 October 2019. Accademia Nazionale dei Lincei, Rome, Italy.

5. SINS2019 – 18th National Congress of the Italian Society for Neuroscience: 26 – 29 September 2019. Perugia, Italy. "Protein homeostasis in Autism Spectrum Disorders" **Rosina E.**, Battan B., Siracusano M., Di Criscio L., Hollis F., Pacini L., Curatolo P. and Bagni C. **Oral presentation.**

6. 1st Stem Cells and Brain Organoids training course and symposium: 4 April 2019, CHUV, Lausanne, Switzerland.

7. NCCR Synapse Annual Meeting: 21 – 22 March 2019. Villars, Switzerland. "Protein homeostasis in Autism Spectrum Disorders" **Rosina E.**, Battan B., Siracusano M., Di Criscio L., Hollis F., Pacini L., Curatolo P. and Bagni C. **Oral presentation.**

8. NCCR-Synapse Site Visit: September 26th, 2018. Geneva, Switzerland. "Disruption of mTOR and MAPK pathways correlates with severity in idiopathic autism" **Rosina E.**, Battan B., Siracusano M., Di

Criscio L., Hollis F., Pacini L., Curatolo P. and Bagni C. **Poster presentation.**

9. 4th DNF Symposium "Building brain": June 22nd, 2018. Department of Fundamental Neurosciences, University of Lausanne, Lausanne, Switzerland. "*Disruption of mTOR and MAPK pathways correlates with severity in idiopathic autism*" **Rosina E.**, Battan B., Siracusano M., Di Criscio L., Hollis F., Pacini L., Curatolo P. and Bagni C. **Poster presentation.**

10. Neuroscience School of Advanced Studies "Microbiota and The Brain": 2 – 9 June 2018. San Servolo Island, Venice, Italy. "*Gut-brain axis communication in Intellectual Disabilities*" **Rosina E.** and Bagni C. **Oral presentation.**

11. NCCR Synapsy Annual Meeting: 22 – 23 March 2018. Villars, Switzerland.

12. 20th Annual Meeting of the Swiss Society for Neuroscience (SSN): February 9th, 2018. Zurich, Switzerland.

13. Targeting Microbiota World Congress 2017: Towards Clinical Revolution: 26 – 27 October 2017. Berlin, Germany.

14. *Giornata Giovani Ricercatori*: April 4th, 2017. Department of Biomedicine and Prevention, University of Rome "Tor Vergata", Rome, Italy. "*Disruption of mTOR and ERK1-2 pathways and severity in idiopathic autism*" **Rosina E.**, Battan B., Pacini L., Farace M.G., Curatolo P. and Bagni C. **Poster presentation.**

15. AIRA 2nd Congress: 5 – 6 December 2016. LUISS Guido Carli University, Rome, Italy.

16. 3rd DNF Symposium "Evolution of the brain": May 13th, 2016. Department of Fundamental Neurosciences, University of Lausanne, Lausanne, Switzerland. "*Dysregulation of protein synthesis: a molecular link between FXS and non-syndromic ASD*" **Rosina E.**, Cencelli G., Nobile V., Pacini L., Jacquemont S., Gomez-Mancilla B., Battan B., Curatolo P., Bagni C. **Poster presentation.**

17. Satellite Symposium "Is autism a treatable disorder?": April 29th, 2016. Rome, Italy. "*A molecular signature that modulates protein synthesis in non-syndromic ASD*" **Rosina E.**, Battan B., Pacini L., D'Andrea L., Curatolo P., Bagni C. **Oral presentation.**

RESEARCH INTERESTS

During my academic career, I have been involved in different projects that have further galvanized my interest in neurobiology and psychiatric disorders. During my PhD, I have focused my attention on a study investigating the molecular signature underlying idiopathic Autism Spectrum Disorders (ASD). The aetiology of ASD is not well understood, and it is likely due by a combination of genetic, epigenetic and

environmental factors, thus classifying ASD into syndromic and idiopathic (non-syndromic) ASD.

In addition, I developed a core interest in the understanding of the intricate symbiotic relationship between the microbiota and the host, with a specific focus on the molecular mechanisms orchestrating gut-brain axis communication in ASD. I have collaborated on a study aiming at exploring the impact of faecal microbiota transplant (FMT) from autistic children to wild-type mice. This research highlights the potential pivotal role of gut microbiota in ASD.

Besides my ASD-focused research interests, my research activity aims at understanding the molecular mechanisms underlying the Fragile X Syndrome (FXS), the most common form of inherited intellectual disability and syndromic autism, caused by the absence of the Fragile X Messenger Ribonucleoprotein 1 (FMRP). Some clinical studies have shown a reduced risk of cancer in individuals with FXS. My research activity has contributed to explore the role of FMRP in colon cancer progression.

Finally, I am currently involved in a project investigating the interaction between the *FMR1* mutation and the activation of the maternal immune system. The experimental models of my research activities include ASD/FXS animal models and human cell lines derived from individuals with FXS and/or ASD. These multifaceted research activities mirror my commitment to advancing our understanding of neurobiological mechanisms and contributing to novel therapeutic strategies for neurodevelopmental disorders.

PUBLICATIONS

1. Avolio E., Olivito I., **Rosina E.**, Romano L., Angelone T., De Bartolo A., Scimeca M., Bellizzi D., D'Aquila P., Passarino G., Alò R., Facciolo R.M., Bagni C., De Lorenzo A., Canonaco M. "Modifications of Behavior and Inflammation in Mice Following Transplant with Fecal Microbiota from Children with Autism". **Neuroscience**. **2022 Aug 21;498:174-189**. Epub 2022 Jul 2. PMID: 35792193; DOI: 10.1016/j.neuroscience.2022.06.038. I.F. = 3.708
2. Di Grazia A., Marafini I., Pedini G., Di Fusco D., Laudisi F., Dinallo V., **Rosina E.**, Stolfi C., Franzè E., Sileri P., Sica G., Monteleone G., Bagni C.* and Monteleone I.* "The Fragile X Mental Retardation Protein regulates RIP1K and colorectal cancer resistance to necroptosis". **Cell Mol Gastroenterol Hepatol**. **2021;11(2):639-658** PMID: 33091622; DOI: 10.1016/j.jcmgh.2020.10.009. I.F. = 9.225
3. **Rosina E.***, Battan B.*, Siracusano M., Di Criscio L., Hollis F., Pacini L., Curatolo P. and Bagni C. "Disruption of mTOR and MAPK pathways correlates with severity in idiopathic autism" *equal contribution. **Transl. Psychiatry**. **2019 Jan 31; 9(1):50**. PMID: 30705255; DOI: 10.1038/s41398-018-0335-z. I.F. = 5.280

PREPRINTS

1. D'Addario S.L., **Rosina E.**, Massaro Cenere M., Bagni C., Mercuri N.B., Ledonne A. "ErbB inhibition rescues nigral dopamine neuron hyperactivity and repetitive behaviors in a mouse model of fragile X syndrome". **BioRxiv**, **2024.02.23.581801**. <http://doi.org/10.1101/2024.02.23.581801>

**MANUSCRIPT(S) UNDER
REVISION**

1. Hilal L. M.*, **Rosina E.***, Restivo L. and Bagni C. "Dysregulation of the mTOR-FMRP pathway in an environmental model of ASD" *equal contribution. Under revision in Molecular Psychiatry. I.F. = 11.1
2. Cencelli G., Pedini G., Ricci C., **Rosina E.**, Cecchetti G., Pacini L., Garrone B., Ombrato R., Coletta I., Prati F., Milanese C. and Bagni C. "Dysregulation of GSK3 β Activity during Development Impairs mitochondrial activity in FXS". Under revision in Neurobiology of Disease. I.F. = 5.1
3. D'Addario S.L., **Rosina E.**, Massaro Cenere M., Bagni C., Mercuri N.B., Ledonne A. "ErbB inhibition rescues nigral dopamine neuron hyperactivity and repetitive behaviors in a mouse model of fragile X syndrome" Under revision in Molecular Psychiatry. I.F. = 11.1

**MANUSCRIPT(S) IN
PREPARATION**

1. Pedini G.*, Pastor T.*, **Rosina E.**, Cencelli G., Pacini L., Farace M.G., Simpson T.I., Curatolo P., Achsel T. and Bagni C. "Dysregulation of miRNA-29a in Fragile X Syndrome reveals disease convergence with Autism" * equal contribution, Frontiers in Molecular Neuroscience invited research article, in preparation. I.F. = 5.639

I authorize the use of my data according to the legislative decree 196/2003.

Everything declared in the present curriculum vitae is true, in accordance with the Articles 46 and 47 of D.P.R. 445/2000.

Rome, August 26th 2024