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## EDUCATION

April 2012 - August 2017: **PhD – Thesis Title: Role of the *PLAGL1* gene in hepatocellular carcinoma.** Faculty of Exact, Physics and Natural Sciences - National University of Córdoba, Córdoba - Argentina.

April 2006 - April 2011: **Degree in Biological Sciences** – Thesis Title: Evaluation of a panel of *Trypanosoma cruzi* recombinant antigens in sera from dogs infected with different lineages and in patients with Leishmaniasis Tegumentaria Americana (LTA). Faculty of Natural Sciences. National University of Salta, Salta - Argentina.

## WORK EXPERIENCE

October 2024 – present. **Researcher position (RTT).** Department of Biomedical Sciences, **University of Cagliari**, Cagliari – Italy;

August 2024 – September 2024. **Work contract** focused on the project “*Hybrid Hub (H2UB): Modelli cellulari e computazionali, micro e nanotecnologie per la personalizzazione di terapie innovative - T4-AN-10 (COMETA)*”, PI: Prof. Patrizia Zavattari. Department of Biomedical Sciences, **University of Cagliari**, Cagliari – Italy;

August 2022 – July 2024: **Researcher position (Rtda).** Contract granted by the Italian Ministry of University in the context of *Programma Operativo Nazionale Ricerca e Innovazione 2014-2020* (PON R&I 2014-2020). Laboratory of Molecular Biology, Genomics, Epigenomics and Cellular Models (MoBGEC, Head of lab: Prof. Patrizia Zavattari), Unit of Biology and Genetics, Department of Biomedical Sciences, **University of Cagliari**, Cagliari – Italy;

September 2022 - August 2023: **Visiting researcher at Innovacell GmbH (Innsbruck, Austria)** focused on: iPSC maintenance, propagation, cryopreservation, pluripotency evaluation and potential differentiation in different cell types; standardization of iPSC to cardiomyocyte differentiation and maturation protocols;

August 2019 - July 2021: **Researcher position (Rtda).** Contract granted by the Italian Ministry of University in the context of *PON Ricerca e Innovazione 2014 - 2020 (PON R&I 2014-2020) Azione 1.2.- Mobilità dei ricercatori*. Laboratory of Molecular Biology, Genomics, Epigenomics and Cellular Models (MoBGEC, Head of lab: Prof. Patrizia Zavattari), Unit of Biology and Genetics, Department of Biomedical Sciences, **University of Cagliari**, Cagliari – Italy;

July 2020 – December 2020: **Visiting researcher at the Institute of Biochemistry, Friedrich-Alexander Universität in Erlangen - Nürnberg (Germany)** in the context of a research project entitled: Microtubules dynamics and their impact on the Opitz BBB/G phenotype. Research activities focused on disease-modelling including iPSC generation, iPSC-differentiation into neural progenitor cells (NPCs) and organoid generation;

October 2018 - June 2019: **Internship**. Fellowship granted by the Italian Government to Argentinian citizens - Ministry of Foreign Affairs. Research focused on the methylome alteration as a possible tumoral marker of colorectal cancer. Laboratory of Molecular Biology, Genomics, Epigenomics and Cellular Models (MoBGEC, Head of lab: Prof. Patrizia Zavattari), Unit of Biology and Genetics, Department of Biomedical Sciences, **University of Cagliari**, Cagliari – Italy;

September 2018: **Work contract** focused on a research project entitled: Methylome alteration as a possible tumoral marker of colorectal cancer, granted by *Regione Autonoma della Sardegna*, PI: Prof.ssa Patrizia Zavattari. Laboratory of Molecular Biology, Genomics, Epigenomics and Cellular Models (MoBGEC, Head of lab: Prof. Patrizia Zavattari), Unit of Biology and Genetics, Department of Biomedical Sciences, **University of Cagliari**, Cagliari – Italy;

November 2017 - July 2018: **Internship**. Fellowship granted by the Italian Government to Argentinian citizens - Ministry of Foreign Affairs. Research focused on the protein expression of epigenetic biomarkers in colorectal cancer. Laboratory of Molecular Biology, Genomics, Epigenomics and Cellular Models (MoBGEC, Head of lab: Prof. Patrizia Zavattari), Unit of Biology and Genetics, Department of Biomedical Sciences, **University of Cagliari**, Cagliari – Italy;

April 2012 - April 2017. **PhD Fellowship**. Fellowship granted by **CONICET** (National Scientific and Technical Research Council, Argentina, *Resolución D N° 3666/2011*). Research work developed at the Institute of Experimental Pathology - CONICET, Salta, Argentina. Research project, granted by AGENCIA - *Proyectos de Investigación Científica y Tecnológica*: PICT 2011-1897, and entitled: Role of the *PLAGL1* gene in hepatocellular carcinoma development. PhD tutor: Dr. Luis Antonio Parada;

September 2015: **Internship**. Project focused on: Study of the methylation status of *PLAGL1* gene in hepatic tumor cell lines. Institute of Medicine and Experimental Biology of Cuyo (IMBECU) - **CONICET**, Mendoza – Argentina;

September 2014 - November 2014: **Internship**. Fellowship granted by the Argentinian Government, Ministry of Education, Culture, Science and Technology - Program BEC.AR. Research focused on the transcriptional level of *p53* and *PPAR $\gamma$*  in hepatic tumor cell lines. Department of Biomedical Science, Laboratory of Pathogenomics of Solid Tumors. **University of Cagliari**, Cagliari – Italy;

April 2013 - September 2013: **Internship**. Fellowship granted by the Italian Government to Argentinian citizens - Ministry of Foreign Affairs. Research focused on the transcriptional level of *PLAGL1* in hepatic tumor cell lines. Department of Biomedical Science, Laboratory of Pathogenomics of Solid Tumors. **University of Cagliari**, Cagliari – Italy;

November 2009 - November 2010: **Internship**. Fellowship granted by CIUNSA - BIEA, National University of Salta (Argentina) to advanced students. Research focused on the serological response produced by different lineages of *Trypanosoma cruzi* through ELISA technique using recombinant antigens. Department of Natural Sciences, Laboratory of Biological Chemistry. **National University of Salta**, Salta - Argentina.

## MANAGEMENT AND COLLABORATION IN RESEARCH PROJECTS

- Management of an international research project funded by the European Society of Clinical Microbiology and Infectious Diseases (ESCMID) research grant 2021. Project title: DNA methylation alterations in host macrophages caused by different *Leishmania* species

infection leading to potential gene dysregulation. Project period: September 2021 – September 2022. PI: Dr. Ana Florencia Vega Benedetti (University of Cagliari). Collaborators: Prof. Patrizia Zavattari, Dr. Eleonora Loi (University of Cagliari), Dr. Paola Barroso (CONICET, Argentina);

- Collaboration with a national research project: *Identificazione di firme molecolari basate sull'analisi della metilazione del DNA come biomarcatori predittivi della risposta alle terapie CAR-T per i pazienti con patologie oncoematologi* funded by Gilead Sciences S.r.l. (Fellowship program 2023). PI: Dr. Eleonora Loi (University of Cagliari), Collaborators: Prof. Patrizia Zavattari (University of Cagliari), Dr. Marianna Greco (Ospedale Oncologico Businco di Cagliari), Dr. Giuseppe Principe (University of Pisa);

- Collaboration with international research groups for the study of epigenetic alterations in colorectal, biliary tumors and glioma. PI: Prof. Patrizia Zavattari (University of Cagliari). Collaborators: Dr. Sandra Orrù (Ospedale Oncologico Businco di Cagliari), Prof. Mario Scartozzi (Azienda Ospedaliera Universitaria di Cagliari), Prof. Matías Avila, (Universidad de Navarra, Pamplona, Spagna), Dr. Sergio Alonso (Germans Trias i Pujol Research Institute, Badalona, Spagna), Collaborator: Prof. Felice Giangaspero (University la Sapienza di Roma);

- Collaboration with a national research group for the study of autism. PI: Prof. Patrizia Zavattari (University of Cagliari), in collaboration with the Centro Disturbi Pervasivi e dello Sviluppo dell'A.O. Brotzu (Cagliari);

- Collaboration with an international research group for the study of Opitz/BBB-G Syndrome. Research program PON Ricerca e Innovazione 2014-2020, Azione I.2. “Mobilità dei ricercatori”. PI: Prof. Marisa Karow (Friedrich-Alexander Universität Erlangen-Nürnberg);

- Collaboration with an international research group for the differentiation of iPSC. Research program PON Ricerca e Innovazione 2014-2020, Azione IV.4 contratti di ricerca su tematiche dell'innovazione. PI: Prof. Patrizia Zavattari (University of Cagliari), in collaboration with Dr. Anita Erharter (Innovacell GmbH, Austria);

- Collaboration with the national research group PNRR National Center for Gene Therapy and Drugs based on RNA Technology. Research project: Study of circulating microRNAs as therapeutic targets for the liposomal delivery of ASO and siRNA for the control of iron accumulation in subjects with transfusion-dependent beta thalassemia. Project period: 2022-2025. PI: Prof. Patrizia Zavattari (University of Cagliari);

- Collaboration with the national research group Piano Operativo Salute (POS) - FSC 2014-2020, Ministry of Health Trajectory 4: Biotechnology, Bioinformatics and Pharmaceutical Development Hybrid Hub (H2UB): Cellular and computational models, micro and nanotechnologies for the personalization of innovative therapies. Project period: 2022-2027. PI: Prof. Patrizia Zavattari (University of Cagliari);

- Collaboration with the national research group PRIN Bando 2022 PNRR Prot. P20228T3EE: Autism spectrum disorders on in Vitro, in vivo and artificial Intelligence models (The FAVORITE project). PI: Prof. Patrizia Zavattari (University of Cagliari). Project period: 2023-2025;

- Collaboration with a national research group for the study of Parkinson disease. PI: Prof. Anna Carta (University of Cagliari). Collaborators: Prof. Alfonso De Simone (University of Naples) and Prof. Giovanni Defazio (University of Cagliari);

- Collaboration with an international research group focused on a project entitled: *Estudio de PLAGL1 en carcinomas tiroideos: foco en las poblaciones inmunes del microambiente tumoral* (PICT-2020-SERIEA-02113) funded by *Fondo para la Investigación Científica y Tecnológica (FONCyT)*, Argentina. PI: Dr. Marta Alicia Toscano (CONICET, Argentina);

- Collaboration with an international research group focused on a project entitled: *Genómica celular y molecular de los tumores de hígado: Papel de las alteraciones estructurales de los genes PLAGL1 y cMET en el desarrollo del carcinoma hepatocelular* (PICT 2011/1897) funded by *Fondo para la Investigación Científica y Tecnológica (FONCyT)*, Argentina. PI: Dr. Luis Antonio Parada (CONICET, Argentina). Collaborators: Dr. José Zuraga (University of the Basque Country), Prof. Patrizia Zavattari (University of Cagliari);

- Collaboration with a national research group for the study focused on Chagas disease diagnosis upon *Trypanosoma cruzi* infection. PI: Prof. Julio Nasser (National University of Salta, Argentina).

#### GUEST EDITOR

Special Issue "DNA Methylation in Human Diseases" in open access journal *Biomolecules* (IF 6.064, <https://www.mdpi.com/journal/biomolecules>).

#### PEER REVIEWS

**Biosensors and Bioelectronics** - ISSN: 0956-5663, **Stem Cells International** - ISSN: 1687-9678, **Bioscience reports** - ISSN:1573-4935, **Cancers** - ISSN: 2072-6694, **Cells** - ISSN: 2073-4409, **Children** - ISSN: 2227-9067, **Biochimie** – ISSN: 1638-6183, **Biomolecules** – ISSN 2218-273X, **Epigenomes** – ISSN 2075-4655, **Genes** – ISSN 2073-4425, **International Journal of Molecular Sciences** – ISSN 1422-0067, **Journal of Personalized Medicine** – ISSN 2075-4426.

#### TEACHING EXPERIENCE

From Academic year 2024/2025. **Professor of the co-teaching course of Biology and Genetics**, BIOS-10/A (4 CFU), in **Medicine and Surgery**, University of Cagliari, Cagliari - Italy.

From Academic year 2020/2021. **Professor of the Course *Biologia e Genetica***, BIO/13 (2 CFU) for the 3-year **Degree in *Infermieristica***. Faculty of Medicine and Surgery, University of Cagliari, Cagliari - Italy.

Academic year 2019/2020. **Professor of the co-teaching of *Biologia Animale***, BIOS-10/A (1 CFU), in the Degree in Scienze Tossicologiche e Controllo della Qualità. University of Cagliari, Cagliari - Italy.

From Academic year 2024/2025. **Member of the exam validation committee** of Medicine and Surgery.

From Academic year 2017/2018. **Member of exam committee** in the following courses: *Biologia Animale* - BIO/13 for the 3-year Degree in *Tossicologia*, 3-year Degree in *Scienze Tossicologiche e Controllo di Qualità*, Magister Degree in *Chimica e Tecnologie*

*Farmaceutiche* and Magister Degree in *Farmacia*. Faculty of Biology and Pharmacy, University of Cagliari, Cagliari - Italy.

From Academic year 2017/2018. **supervisor of thesis students, interns and PhD students**. Laboratory of Molecular Biology, Genomics, Epigenomics and Cellular Models (MoBGEC, Head of lab: Prof. Patrizia Zavattari), Unit of Biology and Genetics, Department of Biomedical Sciences, University of Cagliari, Cagliari - Italy.

16-18 January 2024. **Speaker in the Seminar “Indagini genomiche, trascrittomiche ed epigenomiche di patologie complesse e uso di modelli cellulari”** (Main professor of the seminar: Prof. Patrizia Zavattari) for the students of *Farmacia, Chimica e Tecnologia Farmaceutiche, Scienze Tossicologiche e Controllo di Qualità*, PhD and specialization students of the University of Cagliari.

26, 27 and 30 July 2021. **Speaker in the Seminar “Applicazioni di biologia molecolare e cellulare in ambito biomedico”** (Main professor of the seminar: Prof. Patrizia Zavattari) for the students of *Farmacia, Chimica e Tecnologia Farmaceutiche, Scienze Tossicologiche e Controllo di Qualità, Tecniche di Neurofisiopatologia* of the University of Cagliari.

24 March 2021. **Speaker of the Seminar: “Disease modeling using Induced Pluripotent Stem Cells (iPSC)-derived brain organoids”** in the context of the project granted by PON AIM 2014-2020 - *Attrazione e Mobilità Internazionale dei Ricercatori*. Department of Biomedical Sciences, University of Cagliari, Cagliari - Italy.

October 2008 - November 2010. **Assistant student position at the Biological Chemistry laboratory**, Department of Natural Sciences, National University of Salta, Salta - Argentina.

## LANGUAGES

**Spanish:** mother tongue

**English:** Toefl (Test of English as a foreign language), score: 91/120, December 2016; Toefl (Test of English as a foreign language), score: 573/677, December 2005.

**Italian:** Course of Italian language and culture at the University for Foreigners of Siena, Italy. Level B2. Score: 30/30 L. July 2009; PLIDA. Certificate in Italian. Level B1. November 2005.

**German:** Intensive course A1, 2. Institute: German institute. Europe Kulturzentrum. Salta, Argentina, year 2016; Course A1 – 30 hours. Course A2, 30 hours. Deutsch-Italienische Kulturgesellschaft. Cagliari, Italy. Year 2020.

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