

Education

1998 M.D., “summa cum laude”, University of Cagliari, School of Medicine, Cagliari (Italy)

2005 Postgraduate Medical School in Internal Medicine, University of Cagliari

2009 PhD in Pathology and Environmental Toxicology, University of Cagliari

Academic Career

2011 to 2014: Research Assistant, fixed term, type A, Dpt of Biomedical Sciences, University of Cagliari

2014 to 2017 Research Assistant, fixed term, type B, Dpt of Biomedical Sciences, University of Cagliari

2017 to 2023: Associate Professor of Pathology, Research Assistant, Dpt of Biomedical Sciences, University of Cagliari. Head of the Unit of Oncology and Molecular Pathology

2024 to present: Full Professor of Pathology Dpt of Biomedical Sciences, University of Cagliari

Scientific Background

1995 to 1998: Student Fellow in Pathology. Participate to the research that led to identification of triiodothyronine as a potential antitumoral molecule

2001 to 2005: Postgraduate Training in Internal Medicine. Participates to several projects aimed at identifying the molecular basis of hepatocyte and cardiomyocyte hyperplasia after exposure to triiodothyronine

2006 to 2009: PhD course. During this period, I developed a system to microdissect single preneoplastic liver lesions to study the modification of transcriptomic associated with the tumor progression

2009 to 2011: Post-Doc fellowship from the Accademia Nazionale dei Lincei. Title of the study: Identification of genes differentially expressed during regression of hepatocellular carcinoma induced by T3 and thyromimetics

2011 to present: principal line of research

- Integration of genomic, transcriptomic and radiomic data to generate algorithms for disease prediction or drug discovery. Taking advantage of the characteristics of the genome of the Sardinian population, which being a genetic isolate has relatively low variability, the project, launched in 2019, aims to collect, integrate and analyze genomic, transcriptomic and radiomic data deriving from patients affected by neoplastic and autoimmune disease and healthy subjects. The results of this project will allow for more accurate and much earlier diagnoses. Furthermore, the knowledge of the effect on cellular functions of genetic variants and mutations will allow to identify new potential therapeutic targets.

- The discovery of new molecular pathways involved in liver tumor progression and the identification of new strategies to induce the differentiation of pre neoplastic and

neoplastic hepatocytes. In particular I studied the possibility to reactivate the intracellular pathways, controlled by triiodothyronine and its receptors, to induce differentiation of neoplastic hepatocytes and regression of already progressed hepatocellular carcinomas.

- The study molecular mechanisms underlying the progression of non-alcoholic fatty liver disease and the impact thyroid hormones-intracellular signaling and adaptive immunity on the NAFL-NASH transition.
- Evaluation of the HLA system in liver autoimmune diseases.

Responsibility of Projects:

- 2009 to 2011: Principal Investigator for the project "Identification of genes differentially expressed during regression of hepatocellular carcinoma induced by T3 and thyromimetics, funded by the Accademia Nazionale dei Lincei (Italy). Receiving institution: Unit of Oncology and Molecular Pathology, University of Cagliari
- 2014 to 2016: Principal Investigator for the project "The role of the pathway mediated by the thyroid hormone receptors in the process of liver carcinogenesis". Funded by the Fondazione di Sardegna, Bando Ricerca 2013
- 2018 to 2021: Responsible of research unit for the project "Possible therapeutic use of the thyroid hormone and its analogues for the treatment of the hepatocellular carcinoma". Funded by Regione Autonoma della Sardegna FSC grant
- 2019 to 2022: Responsible of the Research Unit 2 for the project "Regenerative medicine for the management of chronic liver disease", funded by the Fondazione di Sardegna, Bando Ricerca 2013.
- 2020 Participant to the project CORIMUN (Development of biomarker identifying SARS-CoV-2 positive patients with high risk for pulmonary complications).
- 2022 -2025: Scientific Coordinator for the University of Cagliari of the multicentric project HEAL ITALIA "Health Extended Alliance for Innovative Therapies, Advanced Lab-research, and Integrated Approaches of Precision Medicine", funded with 114 ML euros by the Italian Ministry of Health
- 2024 to 2029 Responsible for the project "Potential therapeutic applications of a novel class of thyromimetics in NAFLD-associated HCC", funded with 690.000 euros by Fondazione AIRC, Investigator Grant - IG 2023.

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