

CURRICULUM OF SCIENTIFIC AND EDUCATIONAL ACTIVITY

PROFESSIONAL POSITION

- 2006-2021: permanent full-time researcher at Mediterranean Foundation "G.B. Morgagni - per lo sviluppo delle tecnologie in Medicina e Chirurgia", Catania, which has signed agreement with the University of Catania since 2015, for educational and scientific collaborations.
 - Coordinator of research activity in the field of cellular morphology, macro-anatomy, molecular and cellular biology.
- Since 2022 Researcher of Human Anatomy (BIO/16) at the Department of Medical, Surgical Sciences and Advanced Technologies "G.F. Ingrassia".

EDUCATION AND TRAINING

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| July 1993 | <u>Scientific high school diploma</u>
(final grade: 60/60) |
| December 1998 – March 2000 | <u>Laboratory of Molecular Biology, Department of Physiological Sciences,</u>
<u>Faculty of Pharmacy, University of Catania</u> |
| April 2000 | <u>Degree in Pharmaceutical Chemistry and Technology</u>
(final grade: 110/110 cum laude and proposal for the Pharmacists Association award)
Faculty of Pharmacy, University of Catania
<i>Title of the experimental thesis:</i>
<i>"Production of mCx36 homologous recombinant ES cells".</i> |
| December 2000 | <u>Qualification to practice the profession</u>
(final grade: 377/400)
Faculty of Pharmacy, University of Catania |
| January 11 th & 18 th 2002 | <u>"Laboratory Animal Handling Course"</u>
Institutional Animal Care and Use Committee (I.A.C.U.C.)
Scientific Institute S. Raffaele, Milan |
| June 13 th 2002 | <u>"Training and information course aimed at radiation protection"</u>
S. Raffaele del Monte Tabor Foundation, Milan |
| November 13 th -15 th 2002 | <u>Course of "Optical Microscopy and Digital Photography"</u>
National Cancer Institute, Milan |
| March 2003 – October 2005 | <u>PhD in "Preclinical and Clinical Pharmacology"</u>
Department of Experimental and Clinical Pharmacology |

School of Medicine, University of Catania
Title of the PhD experimental thesis:
“Cannabinoids: possible pharmacological approaches in Kaposi’s sarcoma”

- June 18th-25th 2005 Course “Molecular Medicine, Medical Genomics, BioInformatics”
International School of Advanced BioMedicine and BioInformatics, Pantelleria (TP)
- October 20th -21st 2006 Course “Targeted Therapies in Ematology and Oncology”
Mediterranean Institute of Oncology, Viagrande (CT)
- June 11th-18th -25th 2010 Training course "Hygiene and safety in the workplace: biological risk - physical risk - chemical risk"
Mediterranean Foundation “G.B. Morgagni”, Catania
- December 9th -10th 2010 “Practical course in genomics: from diagnosis to individualized therapy”
School for the Management of Hospital and Health Services
Vittorio Emanuele Hospital, Catania
- March 15th 2011- April 19th 2011 Training course "Informatics in healthcare environment"
Mediterranean Foundation “G.B. Morgagni”, Catania
- October 3rd 2013 Advances in Genome Science “Using New Technologies to Study the Genetics and Diseases”
Catania
- November 3rd-4th 2015 Advances in Genome Science “Illumina User Group Meeting”
Catania
- March 4th -5th 2016 2nd Gastroesophageal Oncology Forum
Vittorio Emanuele Hospital, Catania
- January 26th 2017 Smart Science 2017 “The Innovation of Biotechnology in Scientific Research”
Biological Tower, University of Catania

SCHOLARSHIPS

- December 2000 - October 2001 Training and Orientation Project at the Molecular Biology laboratory, department R&D
S.I.F.I. S.p.A., Lavinaio - Aci S. Antonio (CT)
- November 2001 – March 2003 Scholarship in the field of Gene Therapy of Neurodegenerative disorders
Telethon Institute for Gene Therapy (TIGET) - Scientific Institute San Raffaele, Milan

ONGOING SCIENTIFIC COLLABORATIONS

- Obesity Research and Service Center - Polytechnic University of Marche
- Department of Pharmaceutical and Health Sciences - University of Catania
- Institute of Biomolecular Chemistry - CNR Catania

The scientific activity includes research in the field of clinical and surgical anatomy, microscopic anatomy and molecular anatomy applied to oncology and endocrine disorders.

COMPETITIVE RESEARCH PROJECTS

Scientific participation in PON 01078 (2012-2015) - Project title: "Identification of Biomarkers and development of Diagnostic and Therapeutic Methods in the field of Oncology and Vascular Biology".

Scientific participation in the FIR 2014 - Funded research project. Project code: 4E8207. Project title: "Post-bariatric endocrine anatomy of the gastric fundus of obese subjects with type 2 diabetes".

Participation in the Special Supplementary Fund for Research (FISR), entitled "Identification of products of the endocrine secretion of the stomach of the obese patients and their role in the onset of type 2 diabetes".

Participation in the intra-departmental project (PIACERI) 2020, entitled "Morphological and functional modifications of the liver, pancreas and visceral adipose tissue and clinical therapeutic implications in the obese patient".

MAIN RESEARCH TOPICS

- **Study of the distribution of lysosomal enzymes in different areas of the hippocampus by axonal transport after gene therapy.** Using viral vectors containing genes of interest (gene therapy), the involvement of neuronal transport for the distribution of lysosomal enzymes in the hippocampus of mice affected by metachromatic leukodystrophy has been demonstrated.
- **Clinical anatomy of heart and coronary arteries.** Using Multilayer Computed Tomography (MSCT-64) in support of traditional angiographic techniques, the presence of anomalies and congenital malformations was investigated. The same technique, in another case, allowed to identify, early and in a non-invasive way, the presence of a heart mass and the establishment of a collateral circulation.
- **Molecular anatomy applied to oncology.** Studies on colorectal cancer have been conducted using molecular-genetic analyses. The expression of circulating microRNAs was evaluated, and the signal transduction pathways analyzed.
- **Morphology of the neoplastic cell.** Through microscopic analysis and some specific immunohistochemical stains, colorectal carcinoma tumor cells were studied, highlighting their peculiar morphological characteristics.
- **Evaluation of the antiproliferative and/or cytotoxic activity of new molecules.** After the cytological and immunohistochemical study of the tumor cell, in vitro studies are performed to evaluate the antiproliferative and/or cytotoxic effect of some synthetic and natural molecules on various tumor cell lines.

- **Metabolic anatomy in bariatric surgery.** We evaluated the activity of endocrine cells of the mucosa of the gastric fundus in obese patients undergoing bariatric surgery.

TEACHING ACTIVITY

- Professor of Human Anatomy for various Degree Courses at the University of Catania (since 2013)
- Collaboration and support to the teaching activity in the field of Human Anatomy of the Degree Course in Medicine and Surgery and to the organization of seminars.
- Teacher in Training Course for School Teachers on behalf of the *Accademia Nazionale dei Lincei* (2014)
- Supervisor and co-supervisor of degree theses for degree courses of the Department of Pharmaceutical and Health Sciences.

Catania, 20 Gennaio 2023

Il dichiarante

Ennio Rucca
