

Curriculum vitae - Luca Munaron

Nationality: Italian

Date of birth: 13 July 1966

Department of Animal & Human Biology. Via Accademia Albertina 13, 10125, Torino, ITALY

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2018-present	Full Professor of Physiology (University of Torino).
2004-2018	Associate Professor of Physiology (University of Torino).
1996-2004	Assistant Professor of Physiology (University of Torino).
1994-1995	Fellowship for the Italian Association for Cancer Research (AIRC).
1994	Ph.D. in Physiological Sciences (University of Milano).
1990	Degree in Biological Sciences (University of Torino).

Teaching

Courses:

Cellular Physiology and Biophysics for the master degree course of Cellular and Molecular Biology (CMB, Univ of Torino)

Evolutionary Physiology for the master degree course of Evolution of Animal and Human Behavior (ECAU, Univ of Torino)

Physiology for Sport Science (SUISM, Univ of Torino)

History of evolutionary theory (Astronave Terra) for Scuola di Studi Superiori Ferdinando Rossi (SSST, Univ of Torino)

Evolution for Scuola di Studi Superiori Ferdinando Rossi (SSST, Univ of Torino)

Cellular and Molecular Biophysics for the master degree course of Industrial Biotechnology (Univ of Torino)

History and Philosophy of Life Sciences for the master of Didactics for Secondary School (SSIS, Univ of Torino)

General Physiology for the undergraduate courses in Biological Sciences and Natural Sciences (Univ of Torino)

Didactics on Natural sciences (1998-2007; Faculty of Educational Sciences, Univ of Valle d'Aosta, IT)

Supervisor of several master students from different backgrounds (Cell Biology, Biotechnology, Physics).

Supervisor of 8 PhD students (PhD Complex Systems for Life Science, University of Torino).

Institutional Positions

2021-present. President of the Joint Teaching Committee for the School of Sciences (Univ of Torino).

2019-2021. Member of the Joint Teaching Committee for the School of Sciences (Univ of Torino).

2020-present. Member of the Committee for Sport Activities of University of Torino.

2018-21. President of the Committee for Public Engagement at the Department of Life Sciences and Systems Biology (Univ of Torino).

2019-21. Co-founder of The Public Engagement Lab (Univ of Torino).

2020-22. Member and sub-coordinator of GEV panel for Life Sciences (ANVUR; VQR 2015-19).

Research Activity

- *Bibliometry*

Author of more than 100 full papers on indexed international journals (Last name/corresponding author of >40 papers).

Total citations:

>3000 Scopus

>3000 Web of Science

>4400 Google Scholar

h index:

35 Scopus

35 Web of Science

40 Google Scholar: included in Top Italian Scientists list for Biomedical Sciences (VIA Academy).

- *Main Scientific Contributions*

He started working on the role and properties of mitogenic calcium signals in fibroblasts. Identification and characterization of the role of store-independent calcium entry in the control of cell proliferation.

He was the first to identify the critical role of arachidonic acid as a key regulator of mitogenic-related calcium signals, providing a detailed biophysical description of the channels involved.

In the 1997 he founded the Laboratory of Cellular and Molecular Angiogenesis (LACM) at the Department of Life Sciences & Systems Biology.

In 2013 he founded LACM service for industry.

Since 2019, LACM is a part of The International Associated Laboratory "CaPANCIInv" (with Lille and Munster Universities).

He provided substantial evidence about the function of voltage-independent calcium signals in the control of endothelial cell proliferation, migration and angiogenesis. In particular, by the use of high-resolution confocal microscopy calcium measurements in living cells, he revealed the existence of proangiogenic calcium microdomains in endothelial cells. He provided a detailed description of the complex intracellular signaling responsible for calcium channel regulation, including arachidonic acid, nitric oxide and the novel gasotransmitter hydrogen sulfide (H₂S). He was one of the first to suggest a role for TRP channels in endothelial cell proliferation. More recently, he focused part of his research on proangiogenic calcium signals in tumor-derived endothelial cells, providing substantial evidence on the differences between endothelial cells from normal tissues and the tumoral endothelium. The experimental data have been successfully employed to provide mathematical models for the quantitative description and prediction of some key features of neovascularization.

A number of collaborations are ongoing with several industries to integrate basic research with more applied topics, including the role of vascularization in hair growth, bone remodeling and repair and the vascular effects of nutraceuticals in diabetes and metabolic syndrome. Another recent interest is focused on the interaction between biological tissues and nanoparticles.

Current research interests

Ion channels, calcium signaling and angiogenesis. Intracellular signaling in tumor-derived endothelial cells, with particular interest for the role of calcium channels.

Mathematical Modeling. Biomathematical models for vascularization and angiogenesis

Nanobiotech. Use of functionalized nanotubes for drug delivering against tumor vascularization.

Skin vascularization and nutraceuticals. *In vitro* approaches for testing natural products of dermatological and nutraceutical interest.

Bone vascularization and biomaterials. *In vitro* evaluation of biocompatibility of biomaterials for bone and dental implants.

Transportome bioinformatics.

- *Memberships*

Academy of Science of Torino.

Italian Society for Cardiovascular Research (SIRC) (Scientific Board of -2020-2022).

Italian Physiological Society (SIF).

Nanostructured Interfaces and Surfaces (NIS) Inter-departmental Centre (Scientific Board, Univ of Torino).

Doctoral School in Complex Systems for Quantitative Biomedicine (Scientific Board, Univ of Torino).

Interdepartmental Centre of Systems Biology (Univ of Torino).

Interuniversity Research Centre on Epistemology and History of Life Sciences- Res Viva (Univ of Rome).

The third way of Evolution Group (<https://www.thethirdwayofevolution.com/>)

- *Editorial and Reviewer activity*

Editorial Board of international journals

Cancers, Frontiers in Physiology, Oncology Research, Recent Patents on Anticancer Drug Discovery, Frontiers in Cellular Neuroscience, World Journal of Biological Chemistry, International Journal of Biostatistics & Computational Biology, Current Medicinal Chemistry (Guest).

Reviewer for high impact international journals.

Reviewer for international agencies (UK, Switzerland, China, United Arab Emirates, Japan).

Invited speaker and chairman in national and international meetings, workshops, and seminars.

- *Projects*

2023. Proof of concept project: Da antipertensivi ad antivirali: riposizionamento della funzione dei bloccanti dei canali del calcio – DOUBLE (Participant).

2022. Local Unit Coordinator of the PRIN Project: Multi-Scale Protocols Generation for Intelligent Biofabrication (SAISEI).

2019. Local Unit Coordinator of the project: Studio sugli effetti biologici di dosi sub-tossiche di glifosate a livello del sistema cardiovascolare e nervoso. Banca Intesa.

2017. Local Unit Coordinator of the PRIN Project: Leveraging basic knowledge of ion channel networks in cancer for innovative therapeutic strategies (LIONESS).

2014. Research project of Ateneo- Compagnia di San Paolo: 'TRP channels functionalized nanoparticles to target prostate cancer vascularization' (Participant).

2011. Research project of the University-Compagnia di San Paolo: 'Nanostructured materials and interfaces for frontier technologies' (Participant).

2007. Principal Investigator for the Alfieri Project (CRT Foundation): 'Role of intracellular calcium in tumour angiogenesis'.

2003, 2006, 2007, 2008, 2009. Principal Investigator for the Finalized Health Research Projects of the Piedmont Region.

2004. Co-Presenter of the CIPE Project: 'Biocompatible nanostructured materials for biomedical applications'.

- **Technological Transfer**

Head of LACM Service Centre. Scientific supervisor for University-Industry agreements with Rottapharm-Madaus, Monza, ITA, Meda Pharma, Monza, ITA, Twocare, Torino, ITA, Eltek, Alessandria, ITA, Tiss'you, San Marino, Biomec, Lecco, ITA, Abel Nutraceuticals, ITA.

- **Publications**

See attached appendix