

Paolo Silacci, Ph.D

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Education :

- Radioprotection expert, IRA University of Lausanne 1998
- PhD Natural sciences, Biology mention, University of Geneva. 1990-1994
Department of Microbiology, CMU. Thesis director Prof Bernard Mach.
Study of the mechanism of MHC class II gene extinction during the differentiation of B-lymphocytes to plasmocytes.

Professional experience:

- **Expert for Innosuisse – Swiss Innovation Agency** 2018 - today
- **Animal Biology group leader** 2006 - today
Agroscope, Institute for Livestock Sciences, Posieux.
- **Senior Scientist** 2002 - 2006
EPFL, Laboratory of Hemodynamics and Cardiovascular Technology
(Prof. Stergiopoulos).
- **Senior Scientist** 1997 - 2002
CHUV, Division of Hypertension (Prof. Daniel Hayoz).
- **First assistant** 1994 - 1997
HCUGE, Division of Rheumatology (Dr. Pierre-André Guerne).

Institutional responsibilities:

- Chief-expert for qualification exams for apprentices, **Etat de Fribourg** since 2019
- Radioprotection expert, **Agroscope** since 2014
- Expert for qualification exams for apprentices, **Etat de Fribourg** since 2010
- Responsible for training apprentices, **Etat de Fribourg** since 2010
- Internal auditor ISO9001/ 17025, **Agroscope** 2007 - 2009

Research activities :

At CHUV and EPFL (1997 to 2006) I had the biological leadership of research group working on a unique in vitro culture system able to reproduce complex hemodynamic environments on endothelial cells. This system was further adapted to ex-vivo pig carotid culture under my supervision. During this period, I managed interdisciplinary personal (medical doctors, engineers, technical collaborators, students).

Since 2006, I have the leadership of a research group at Agroscope, which participates to a large panel of different research studies aimed to optimize animal production. The panel of analysis realized by my group includes physical-chemical measurement on meat, biochemical analysis of

meat maturation process, histology on muscle sections, veterinary chemical chemistry. Since 6 years, we also implemented several in vitro cell culture models to study nutrient absorption in the small intestine of the animals and Ussing chamber experiments to assess nutrient absorption in ex-vivo intestinal tissue.

Supervision of junior researchers:

1994-1997	Thesis supervisor Mr Alain Desgeorges, Division of Rheumatology, HCUGE, Geneva.
1997 – 2001	Thesis Director Miss Kitty Formentin Division of Hypertension and Vascular Medicine CHUV, Lausanne
2002 – 2006	Thesis supervisor Miss Veronica Gambillara and Mr Tyler Thacher, EPFL, Lausanne.
2018 – 2020	Postdoctoral supervisor Dr. Marco Tretola.

Teaching activities:

EPFL, Lausanne :

2001 and 2003	4 hours lecture in the context of the postgrade cycle "Biomedical Engineering. Title : " Vascular prostheses"
2002 and 2003	2 hours lecture to the Material Section students. Title : "Vascular prostheses".
2005	14 hours "Vascular Biology" course, Doctoral School Integrative Bioscience Institute, Life Science

Scientific awards and grants :

-	Arthur K Doolittle's Award for outstanding paper presented at Chicago ACS Meeting	2007
-	Pfizer's award for cardiovascular research	2004
-	Leenaard's Foundation award	2000
-	Co-investigator SNRF 32-54612.98 (PI Prof D. Hayoz)	1998 - 2001
-	Co-investigator SNRF 3200-065129.01 (PI Prof D. Hayoz)	2001 - 2003
-	Co-investigator SNRF 3200-061524.00/1 (PI Dr T. Pedrazzini)	2000 - 2003
-	Co-investigator SNRF 33100A0-100423/1 (PI Prof N. Stergiopoulos)	2003 - 2006
-	Principal investigator SNRF 3100A0-103823/1	2004 - 2007

Major scientific achievements :

From 1997 to 2006, I had to lead an interdisciplinary group, first attached to CHUV (Division of Hypertension) and further to EPFL (Life Science Faculty). The major topic of research was the effect of hemodynamic forces on vascular wall cells metabolism in the context of atherosclerosis plaque development. In 1997, when I began at CHUV, a first prototype of the cell culture system to expose endothelial cells to different hemodynamic forces already existed, but was optimized to achieve reproducible and physiologically relevant results. At the EPFL, this system was further developed to adapt to ex-vivo organ (pig carotid) culture. A strong interdisciplinary team including engineers, MD and biologists has achieved, under my supervision, all these technical challenges. This period was characterized by the publication of 17 scientific articles in peer-reviewed journals and by the receipt of the Pfizer Prize for cardiovascular research in 2004.

Since 2006, I moved to Agroscope in a whole new environment. Initially, the research group activities were limited to technical evaluation of meat quality and to veterinary clinical chemistry analysis. 3 years after my arrival, in response to structural changes at Agroscope, I started to implement cell culture techniques in order to adapt to new requirements of the Institution, which wanted to have a more basic research orientation. Starting from nothing (cell culture was not implemented at all at this time at Agroscope), we implemented cell-line based models of intestinal absorption (Caco-2 and IPEC-J2) and several primary cell culture models (from skeletal muscle to intestinal epithelium). More recently, we have started electrophysiologically studies using an Ussing chamber, allowing the study of the activity of electrogenic channels in both cultured cells and intestinal tissue. This techniques now provides essential data to better understand animal response to different nutritional strategies. These achievements were obtained with a little team (3 technicians and one butcher) and were done in parallel with the maintenance and development of new techniques for meat quality and clinical chemistry analysis.