ROMEO **RICCI**

CONTACT

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France

RESEARCH PROFILE

Internationally recognized scientist in metabolism and inflammation, full professor at the University of Strasbourg and principal investigator at IGBMC, leading research on lipid biology, inflammasomes, and metabolic regulation, with extensive grant funding, high-impact publications, and leadership in major scientific networks.

EDUCATION

- MD DEGREE
  1991 - 1997
  University of Berne, Switzerland
- DOCTORAL THESIS
  1998 - 2001
  University of Zurich, Switzerland

COMPETENCES

- Expertise in metabolism, lipid biology, and inflammation research
- Leadership of multidisciplinary research teams and international collaborations
- Securing and managing large-scale competitive research funding
- University-level teaching in cell biology and lipid metabolism
- Extensive peer-review experience for high-impact journals and funding agencies

LANGUAGES

- German: native
- English: fluent (written and spoken)
- French: fluent (written and spoken)
- Italian: proficient

PROFESSIONAL EXPERIENCE

- **FULL PROFESSOR, UNIVERSITY OF STRASBOURG**
  2010 - Today
  - Principal Investigator at IGBMC, leading research on lipid biology, inflammasomes, and metabolic regulation
  - Academic appointment in clinical biochemistry at Nouvel Hôpital Civil, Strasbourg
  - Supervision of graduate students and postdocs
  - Teaching undergraduate courses in medicine
- **ASSISTANT PROFESSOR AND SENIOR RESEARCH ASSOCIATE, ETH ZURICH**
  2004 - 2010
  - Established and led research in metabolism and inflammation
  - Supervised postdocs and graduate students
  - Taught master's level courses in biology
  - Coordinated national and international collaborations
- **POSTDOCTORAL AND CLINICAL TRAINING**
  1998 - 2004
  - Postdoctoral research in molecular pathology, vascular biology, and inflammation at the University of Zurich and the Research Institute of Molecular Pathology, Vienna
  - Clinical training in surgical pathology and cardiology

GRANTS AND FELLOWSHIPS – TOTAL FUNDING SECURED: €10.5 M

Awarded three major competitive research grants — Chaire d'excellence en Biologie/Santé (France, €2 M, national), ERC Starting Grant (€1.5 M, international), and SNF Assistant Professorship (Switzerland, €1.5 M, national) — totalling €5 M in large-scale project funding.

HONOURS AND AWARDS

- 2024 – Chaire d'excellence en Biologie/Santé (France 2030)
- 2012 – ERC Starting Grant (Consolidator Stage)
- 2009 – "Gutenberg" Chair, Alsace, France
- 2009 – EMBO Young Investigator Award
- 2009 – Swiss Society for Endocrinology and Diabetology – Young Investigator Award
- 2008 – Georg-Friedrich Goetz Research Award
- 2001–2003 – Marie Curie Individual Postdoctoral Fellowship

GRANTS AND FELLOWSHIPS

- **2024 – Chaire d'excellence en Biologie/Santé (France 2030) – Coordinator – €2 M**
- 2023 – INCa Project Grant – Coordinator
- 2023 – ANR Project Grant – Coordinator
- 2022 – ANR Project Grant – Collaborator
- 2022 – Société Francophone du Diabète (SFD)
- 2021 – ANR Project Grant – Coordinator
- 2019 – Fondation pour la Recherche Médicale (FRM) – Équipe grant
- 2018 – ANR Project Grant – Collaborator
- 2018 – Marie Curie Individual Postdoctoral Fellowship (Mentor)
- 2018 – European Association for the Study of Diabetes (EASD)
- 2017 – ANR Project Grant – Coordinator
- 2017 – Société Francophone du Diabète (SFD)
- 2017 – Ligue contre le cancer
- 2017 – Fondation ARC pour la recherche sur le cancer
- 2017 – Ingestem National Network
- 2017 – FHU Arrimage Regional Network (Alsace)
- 2016 – USIAS Strasbourg
- 2015 – Fondation pour la Recherche Médicale (FRM)
- 2015 – SATT Conectus – Drug development project
- 2014 – European Association for the Study of Diabetes (EASD)
- 2013 – Fondation pour la Recherche Médicale (FRM)
- **2012 – ERC Starting Grant (Consolidator Stage) – Coordinator – €1.5 M**
- 2009 – ETH Grant (ETHIIRA)
- 2008 – Boehringer Ingelheim Industrial Contract
- 2008 – European Association for the Study of Diabetes (EASD)
- **2007 – SNF Assistant Professorship – Coordinator – €1.5 M**
- 2007 – Roche Research Foundation
- 2006 – Roche Research Foundation
- 2006 – Swiss National Foundation (SNF) – Individual Project Funding
- 2006 – Bonizzi-Theler Stiftung
- 2005 – Boehringer Ingelheim Industrial Contract
- 2004 – Swiss Heart Foundation
- 2004 – Novartis Foundation for Medical and Biological Sciences
- 2004 – Roche Research Foundation
- 2003 – Research Credit, University of Zurich
- 2001–2003 – Marie Curie Individual Postdoctoral Fellowship

SCIENTIFIC VISIBILITY

SELECTED INVITED TALKS

- 2024 – The Inflammasomes EMBO Workshop, Munich, Germany
- 2023 – 5th Neurons in Action Conference, Warsaw, Poland
- 2022 – Keynote Lecture, Club Exo-Endo Meeting, Münster, France
- 2022 – Diet, Nutrition and Cancer Cell Metabolism, CNIO, Madrid, Spain
- 2022 – 7th EMBO Autophagy Conference, Eger, Hungary
- 2022 – Diet, Nutrition and Cancer Cell Metabolism, Madrid, Spain
- 2019 – Symposium on ER Proteostasis, Oslo, Norway
- 2019 – ASCB/EMBO Meeting, Washington DC, USA
- 2018 – Servier-IGIS Symposium "Update on Islet Hormone Production – Tribute to Donald Steiner", Saint-Jean-Cap-Ferrat, France
- 2018 – 54th EASD Annual Meeting, Berlin, Germany
- 2017 – European Human Genetics Conference, Copenhagen, Denmark
- 2016 – American Diabetes Association, New Orleans, USA
- 2016 – 14th International Symposium on MPS and Related Diseases, Bonn, Germany
- 2016 – CRI-PARIS Montmartre Symposium "Endocytic Pathways, Autophagy and Inflammatory Diseases", Paris, France
- 2015 – Program Frontiers in Obesity Research by ERC's, Santiago de Compostela, Spain
- 2015 – EMBO Sectorial Obesity Meeting, Lisbon, Portugal

ORGANISATION OF SCIENTIFIC MEETINGS

- 2019 – Mini-symposium at the ASCB-EMBO Meeting, Washington DC, USA – International meeting
- 2018 – Main Organizer, EMBO Workshop "Lysosomes and Metabolism", Naples, Italy – International meeting, focus on lysosomes, metabolism, and lipid biology
- 2016 – Co-organizer, 11th GERLI Lipidomics Meeting "Lipids in Agronomy, Health and Disease", Bischoffsheim, France – International meeting, 120 participants
- 2015 – Main Organizer, 2nd TriRhena Metabolism Club Meeting, IGBMC, Illkirch-Graffenstaden, France – International meeting, 80 participants

INSTITUTIONAL RESPONSIBILITIES

- Since 2010 – Academic appointment in clinical biochemistry, Nouvel Hôpital Civil, Strasbourg
- 2018–2019 – Member, Scientific Council, IGBMC
- 2017–2020 – Co-director, INGESTEM at IGBMC
- 2011–2012 – Member, LabEx Committee, IGBMC
- 2011–2014 – Consultant for Clinical Research, Pôle de Biologie, University Hospital Strasbourg
- 2010–2012 – Member, Codirecting Committee, IGBMC
- 2010–2012 – Deputy Director, Department of Translational Medicine and Neuroscience, IGBMC

MEMBERSHIP OF SCIENTIFIC SOCIETIES

- Since 2023 - American Association For Cancer Research (AACR)
- Since 2020 – Société Francophone du Diabète (SFD)
- Since 2009 – European Foundation for the Study of Diabetes (EFSD)
- Since 2009 – Swiss Society for Endocrinology and Diabetology (SSED)
- 2005–2010 – Competence Center of Systems Physiology and Metabolic Diseases (CC-SPMD)
- 2004–2009 – Cardiovascular Biology Working Group, Swiss Society of Cardiology
- 2004–2005 – American Heart Association – Early Career Member

REVIEWING ACTIVITIES

JOURNALS

Nature, Nature Immunology, Advanced Science, Cell Metabolism, Science, Science Immunology, Molecular Metabolism, EMBO Journal, PNAS, Journal of Cell Biology, Developmental Biology, PLoS One, Journal of Cellular Biochemistry, Circulation, Circulation Research, Cardiovascular Research, Atherosclerosis, Cell Death and Differentiation

GRANTING INSTITUTIONS

Agence Nationale de la Recherche (ANR, CE13 panel member), Swiss National Science Foundation, Austrian Academy of Science, Fondation ARC, German-Israeli Foundation for Scientific Research and Development, ERC, EMBO Fellowships, AXA Research Fund, National Research Foundation Singapore

SUPERVISION OF GRADUATE STUDENTS AND POSTDOCTORAL FELLOWS

SINCE 2010 – UNIVERSITY OF STRASBOURG / IGBMC

- 8 postdoctoral fellows
- 14 PhD students
- 14 Master's students
- 1 visiting scientist
- 1 Junior Group Leader
- 2 Technicians

2004–2010 – ETH ZURICH

- 1 postdoctoral fellow
- 6 PhD students
- 2 Master's students

PUBLICATION SUMMARY

- 46 peer-reviewed publications in leading international journals.
- Published in Science (2), Cell, Science Immunology, Nature Immunology, Nature Metabolism, Nature Medicine, Nature Genetics, Nature Structural & Molecular Biology, Genes & Development, Journal of Experimental Medicine, Nature Communications, EMBO Reports.
- Research focus: molecular mechanisms of inflammation (notably NLRP3 inflammasome regulation), lipid biology, autophagy, nutrient sensing, and their links to metabolic and cardiovascular diseases.
- Strong record of collaborations with international leaders in immunology, metabolism, and cell biology.
- Contributions have advanced understanding from beta-cell biology in diabetes to mechanotransduction and membrane trafficking in immune responses.

SELECTED PUBLICATIONS

- Ran L, Ye T, Erbs E, Sumara I, Zhang Z, Ricci R. KCNN4 links PIEZO-dependent mechanotransduction to NLRP3 inflammasome activation. Science Immunology. 2023.

- Goginashvili A, Zhang Z, Erbs E, Spiegelhalter C, Kessler P, Mihlan M, Pasquier A, Krupina K, Schieber NL, Cinque L, Morvan J, Sumara I, Schwab Y, Settembre C, Ricci R. Insulin secretory granules control autophagy in pancreatic β cells. Science. 2015.

- Ricci R*, Sumara G, Sumara I, Rozenberg I, Kurrer M, Akhmedov A, Hersberger M, Eriksson U, Eberli FR, Becher B, et al. Requirement of JNK2 for scavenger receptor A-mediated foam cell formation in atherogenesis. Science. 2004. *corresponding author

- Sumara G, Formentini I, Collins S, Sumara I, Windak R, Bodenmiller B, Ramracheya R, Caille D, Jiang H, Platt KA, Meda P, Aebersold R, Rorsman P, Ricci R. Regulation of PKD by the MAPK p38delta in insulin secretion and glucose homeostasis. Cell. 2009.

- Vivot K, Meszaros G, Pangou E, Zhang Z, … Ricci R#. CaMK1D signaling in AgRP neurons promotes ghrelin-mediated food intake. Nature Metabolism. 2023.

- Zhang Z, Vendiitti R, Ran L, Liu Z, … Ricci R. Distinct changes in endosomal composition promote NLRP3 inflammasome activation. Nature Immunology. 2023.

- Pangou E, Bielska O, Guerber L, … Ricci R*, Sumara I*. A PKD-MFF signaling axis couples mitochondrial fission to mitotic progression. Cell Reports. 2021. * co-corresponding authors

- Pasquier A, Vivot K, Erbs E, … Ricci R. Lysosomal degradation of newly formed insulin granules contributes to β cell failure in diabetes. Nature Communications. 2019.

Full publication list available upon request.

IMPACT STATEMENT

Over the past two decades, my research has consistently advanced understanding of how stress signaling, metabolism, and inflammation intersect to drive major human diseases, including atherosclerosis, type 2 diabetes, and chronic inflammatory disorders. My work has defined new molecular pathways, challenged prevailing paradigms, and opened translational opportunities.

1. LANDMARK DISCOVERY IN CARDIOVASCULAR DISEASE

As a postdoctoral fellow, I demonstrated that stress kinase JNK2 directly promotes macrophage foam cell formation by phosphorylating Scavenger Receptor A, providing the first molecular explanation for how stress signaling drives atherosclerosis. This Science paper is recognized as a landmark in linking stress pathways to metabolic and vascular disease, catalyzing my transition to independence and establishing my international profile.

2. DEFINING NOVEL ROLES FOR SAPK4 AND PKD IN BETA-CELL BIOLOGY

As SNF Assistant Professor at ETH Zurich, I discovered the first non-redundant in vivo function of the "non-canonical" p38δ kinase, showing its role in β-cell dysfunction and type 2 diabetes. This led to the identification of PKD as a key Golgi kinase regulating insulin granule biogenesis, now a central concept in β-cell biology (Cell, Dev Cell). These studies consolidated my reputation in stress signaling and metabolism, earning me the EMBO Young Investigator Award and an ERC grant.

3. UNCOVERING A PARADIGM-SHIFTING BETA-CELL RESPONSE TO FASTING

As Full Professor at Strasbourg and IGBMC group leader, my team resolved a fundamental puzzle: why β cells do not engage classical macro-autophagy during fasting. We discovered a selective lysosomal degradation of insulin granules that suppresses macro-autophagy while preventing inappropriate insulin secretion in nutrient scarcity (Science). This mechanism is dysregulated in diabetes (Nat Commun).

4. MECHANISTIC INSIGHTS INTO NLRP3 INFLAMMASOME ACTIVATION

My laboratory has elucidated how membrane trafficking, lipid composition, and mechanosensitive ion channels regulate NLRP3 inflammasome assembly. We identified PIEZO–KCNN4 signaling as a link between mechanical stress and NLRP3 activation (Science Immunology) and revealed distinct endosomal remodeling events that prime inflammasome assembly (Nature Immunology).

5. DISCOVERY OF A HYPOTHALAMIC CAMK1D PATHWAY CONTROLLING FEEDING BEHAVIOR

We uncovered a novel neuronal circuit in AgRP neurons where CaMK1D signaling mediates ghrelin-induced food intake (Nature Metabolism). This work identifies a previously unknown kinase-dependent mechanism linking metabolic cues to hypothalamic appetite regulation.

IMPACT AT A GLANCE

- 46 peer-reviewed publications, including Science (2), Cell, Science Immunology, Nature Immunology, Nature Metabolism, Nature Medicine, Nature Genetics
- Over €10 M in competitive research funding, including ERC, Chaire d'excellence, and SNF Assistant Professorship
- Leadership in national and international collaborations, supervision of over 35 trainees, and organization of high-profile scientific meetings
- Research bridging mechanistic discovery with translational potential in metabolic disease and inflammation