

STAIANO, Leopoldo

- Assistant Researcher “Cell Biology and Diseases Mechanisms-Kidney Organoids Laboratory” at the Telethon Institute of Genetics and Medicine-TIGEM- Pozzuoli-Naples - ITALY
- Researcher Institute for Genetic and Biomedical Research (IRGB)- National Research Council-CNR-Milan-ITALY

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Date of birth: 06/10/1984
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EDUCATION.

2012 Ph.D. in Model Systems in Biomedical and Veterinary Research, University of Naples Federico II, Naples, ITALY
2008 MSc in Molecular Biology (summa cum laude), University of Naples Federico II, Naples, ITALY
2006 BSc in Biological Sciences (summa cum laude), University of Naples Federico II, Naples, ITALY

RESEARCH and PROFESSIONAL EXPERIENCE.

2020- Researcher, Kidney pathophysiology laboratory, IRGB-CNR
2020- Assistant Researcher, Kidney Organoids Laboratory, TIGEM
2012-2020 Postdoctoral fellow, TIGEM. (A. De Matteis lab)
2011 Visiting PhD student at Institute of functional genomics (IGFL), Lyon, FRANCE
2009-2012 Ph.D. in Model Systems in Biomedical and Veterinary Research (Supervisor Pr. R. Di Lauro), University of Naples Federico II, Naples, ITALY

AWARDS and DISTINCTIONS

2020-2023 Telethon Start-up installation Grant (PI)
2018 Lowe Syndrome Trust Research Grant (Co-PI)
2011 EMBO Short Term Fellowship

MEMBERSHIPS OF SCIENTIFIC SOCIETIES

2020- Member of the European Association for the Study of Diabetes
2012- Member of the Italian society of Biochemistry and Molecular biology
2009- Member of the Italian association for Cell biology and differentiation (ABCD)
2009-2012 Member of Associazione Italiana per lo studio degli animali da laboratorio (FELASA constituent)

RESEARCH FOCUS

My work has focused on the identification of the molecular mechanisms underneath kidney proximal tubule dysfunction in Lowe Syndrome, a rare genetic disease characterized by Proximal Tubule dysfunction, with a focus on the study of membrane trafficking (mainly endocytosis and autophagy) and phosphoinositides metabolism. In the last years I contributed to the identification of a new cellular role for OCRL (in autophagosome-lysosome fusion) and I have worked on the development of microscopy-based phenotypical screening (by High Content microscopy) on kidney cells. This approach led to the identification of drugs that in Lowe cells were able to rescue disease-relevant phenotypes. Then I worked to translate the *in vitro* results using the mouse model of Lowe syndrome, that I also contributed to characterize. I also worked on additional projects regarding intracellular trafficking of autophagic proteins and on the regulation of key cellular functions, such as protein synthesis, in course of nutrient deprivation. I also worked, in collaboration with other

partners, to the identification of the role of the IL-8/CXCR1-2 axis in the onset and progression of Diabetic Kidney disease.

MAIN SCIENTIFIC CONTRIBUTIONS

GADD34 is a modulator of autophagy during starvation

Gambardella G*, **Staiano L***, Moretti MN, De Cegli R, Fagnocchi L, Di Tullio G, Polletti S, Braccia C, Armirotti A, Zippo A, Ballabio A, De Matteis MA, di Bernardo D. Science Advances 2020, in press *co-first

Hijacking intracellular membranes to feed autophagosomal growth.

Staiano L, Zappa F.

FEBS Lett. 2019 Nov;593(22):3120-3134. doi: 10.1002/1873-3468.13637. Epub 2019 Oct 21. PMID: 31603532

OCRL deficiency impairs endolysosomal function in a humanized mouse model for Lowe syndrome and Dent disease.

Festa BP, Berquez M, Gassama A, Amrein I, Ismail HM, Samardzija M, **Staiano L**, Luciani A, Grimm C, Nussbaum RL, De Matteis MA, Dorchies OM, Scapozza L, Wolfer DP, Devuyst O. Hum Mol Genet. 2019 Jun 15;28(12):1931-1946. doi: 10.1093/hmg/ddy449. PMID: 30590522

A selective ER-phagy exerts procollagen quality control via a Calnexin-FAM134B complex.

Forrester A, De Leonibus C, Grumati P, Fasana E, Piemontese M, **Staiano L**, Fregno I, Raimondi A, Marazza A, Bruno G, Iavazzo M, Intartaglia D, Seczynska M, van Anken E, Conte I, De Matteis MA, Dikic I, Molinari M, Settembre C.

EMBO J. 2019 Jan 15;38(2):e99847. doi: 10.15252/embj.201899847. Epub 2018 Dec 17. PMID: 30559329

Phosphoinositides in the kidney.

Staiano L, De Matteis MA.

J Lipid Res. 2019 Feb;60(2):287-298. doi: 10.1194/jlr.R089946. Epub 2018 Oct 12. PMID: 30314999

The 5-phosphatase OCRL in Lowe syndrome and Dent disease 2.

De Matteis MA, **Staiano L**, Emma F, Devuyst O.

Nat Rev Nephrol. 2017 Aug;13(8):455-470. doi: 10.1038/nrneph.2017.83. Epub 2017 Jul 3. PMID: 28669993

Autophagosome-lysosome fusion triggers a lysosomal response mediated by TLR9 and controlled by OCRL.

De Leo MG*, **Staiano L***, Vicinanza M, Luciani A, Carissimo A, Mutarelli M, Di Campi A, Polishchuk E, Di Tullio G, Morra V, Levtchenko E, Oltrabella F, Starborg T, Santoro M, Di Bernardo D, Devuyst O, Lowe M, Medina DL, Ballabio A, De Matteis MA&.

Nat Cell Biol. 2016 Aug;18(8):839-850. doi: 10.1038/ncb3386. Epub 2016 Jul 11. PMID: 27398910 . *co-first &co-corresponding

Mendelian disorders of PI metabolizing enzymes.

Staiano L, De Leo MG, Persico M, De Matteis MA.

Biochim Biophys Acta. 2015 Jun;1851(6):867-81. doi: 10.1016/j.bbali.2014.12.001. Epub 2014 Dec 12. PMID: 25510381

PARTICIPATION TO NATIONAL AND INTERNATIONAL MEETINGS

- September 4-7, 2010 EMBO meeting 2010, Barcelona, Spain. (poster presentation)
- June 20-22, 2010 Annual PhD students meeting ABCD, Gubbio, Italy (poster presentation)
- October 29-30, 2009 Refinement e Reduction: Model systems in Neuroscience and Biomedical Research, Naples, Italy

- September 22-23, 2011 Convegno AISAL Biomaterials in medicine and animal models Naples,, Italy
- September 4-13, 2012 FEBS Advanced Course Microspectroscopy: Visualization of Protein Dynamics in Living cells. Neimegen/Wageningen, The Netherlands.
- October 4-10, 2012 FEBS Advanced Course Lipid Signaling and cancer. Vico Equense, Italy (poster presentation)
- October 22-23, 2012 TIGEM Institutional Retreat, Sorrento, Italy (poster presentation)
- July 2, 2014 Kurma Kick-off meeting (oral presentation)
- April 4-5, 2014 Membrane trafficking and organelle biogenesis. Pesaro, Italy (oral presentation)
- October 9-12, 2014 The 39th European symposium on hormones and cell regulation: Inositol lipid signaling: from molecular mechanism to human pathologies. Mont St.Odile, France. (poster presentation)
- September 1-4, 2015 Signalling 2015: Cellular functions of Phosphoinositides and Inositol phosphates, Cambridge, UK (poster presentation)
- October 1-4, 2015 European Study Group on Lysosomal Diseases (ESGLD), Pozzuoli, Italy (oral presentation)
- May 26-28, 2016 Tigem, Tiget, DTI Tri-Retreat, Rome, Italy (oral presentation)
- June 12-17, 2016 Lysosomes & Endocytosis Gordon Research Conference, Andover (NH), USA (poster presentation)
- October 27-29, 2017 International Conference: The kidney in genetic and rare diseases, Naples, Italy (poster presentation)
- January 12, 2017 Invited speaker at the Department of Biology, Università degli Studi di Napoli Federico II. Spatio-temporal control of phosphoinositides: OCRL and the regulation of lysosomal function and autophagy, Naples, Italy
- February 15, 2017 Invited speaker at the Department of Biological Science, Università degli Studi di Napoli Federico II. Seminar on University Curriculum Counselling for Undergraduate Students. Naples, Italy
- March 4-10, 2017 Lysosomal Disease Gordon Research Conference & Seminar, Barga, Italy (oral presentation)
- October 20, 2017 Lecture at Medical School, Università degli Studi di Napoli Federico II.
- October 26-27, 2017 High Content Screening Seminar & User Group Meeting, Pozzuoli, Naples, Italy
- June 19-21, 2018 Sixth International Conference on Rare and Undiagnosed Diseases, Naples, Italy
- October 15-19, 2018 The 2018 Golgi meeting: Membrane trafficking in cell organization and homeostasis, Sorrento, Italy (poster presentation)
- October 25, 2018 Lecture at Medical School, Università degli Studi di Napoli Federico II.
- December 3-4, 2018 Lysocil international research program kick-off meeting, Lisbon, Portugal (invited speaker)
- September 9-11, 2019 Lysocil Workshop on Lysosome Biology, Lisbon, Portugal (invited speaker)
- September 19-21, 2019 ABCD congress 2019, Bologna, Italy (poster presentation)

- September 23-24, 2019 EOS2019- European Organoids Symposium, Milan, Italy
- November 21, 2019 Lecture at Medical School, Università degli Studi di Napoli Federico II