General information

Name:	Dr. biol. Lucia Natarelli
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Phone:	+49 89 4400 52530
Email:	lucia.natarelli@med.uni-muenchen.de
CurrentPosition:	Research group leader

Postgraduate professional careers

09.2020 – 02.2021 **Scientific Consultant** (freelancer)
SanaExpert GmbH, München

- Freelance Scientific Consultant, Occasional performance for scientific information regarding metabolism and bioavailability of natural food-derived molecules and their benefits.

01.08.2018 – present **Senior Researcher**
Institute for Cardiovascular Prevention (IPEK), Klinimum der Universität München (KUM), Ludwig-Maximillians-University (LMU), Munich

- Epigenetic and genetic DNA modifications involved in atherosclerosis disease (group leader). Whole genome and RNA sequencing (WGS, RNA-seq), 3D chromosomal and epigenetic histone modifications assays
- Long non-coding RNAs and micro RNAs role in DNA damage, metabolic syndromes and atherosclerosis
- Orphan GPCRs in inflammation and mitochondria metabolism during atherosclerosis and diabetes

03.06.2013 – 31.12.2013 **post-doctoral research fellow**
Institute for Cardiovascular Prevention (IPEK), Munich

- Role of lncRNAs and miRNAs interaction in inflammation and DNA damage during atherosclerosis.

25.01.2012 – 31.03.2012 **Term-contract**, **PhD fellow** founded by **Horphag Research** (Geneva)
CREA-Nut, previous National Institute for Food and Nutrition (INRAN), Rome, Italy

- Clinical and pre-clinical drug research. Antioxidant capacity of Quercus Robur supplementation on plasma isolated from patients or healthy donors (*in vivo*), and on different cell lines (breast cancer, fibroblasts, inflammatory cells, *in vitro*)

24.11.2010 – 31.12.2012 **Project Staff Collaboration** funded by **Bayer AG** (Leverkusen, DE),
CREA-Nut, previous National Institute for Food and Nutrition (INRAN), Rome, Italy

- Redoxon® supplementation to patients, plasma mononuclear cells collection and analysis of anti- inflammatory capacity, molecular mechanisms and gene expression

Epigenetic research on transcriptome and DNA methylation of CpG islands of main inflammatory genes and genes involved in gestational diabetes

University training and degree

09.2008 – 01.10.2010 **M.Sc., Cellular and Molecular Biology.** Vote: summa *cum laude*
University of Rome "Tor Vergata". Rome, Italy

Research topic: biochemistry drug discovery for pharmaceutical translational field. Study of the molecular mechanisms involved in Kaempferol (KF) response in HeLa cells: evidence of a dual role of p53 as inducer of the autophagic and apoptotic responses.

20.09.2004 - 24.10.2008 **B.Sc., Human Biology**
University of Rome "Tor Vergata". Rome, Italy

Research topic: Cystic fibrosis. Study of the correlation between intracellular thiolic status and CFTR expression/localization in human bronchial epithelial cells

11/2010 – 04/2014 **Ph.D., Socio-environmental toxicology**
Department of Pharmacy Science and Healthy Products, University of Messina Polo Anunziata, Messina, Italy; National Institute for Food and Nutrition (INRAN) Rome, Italy. Vote: Summa *cum laude*

Research topic: Effect of caffeic acid on endothelial cell dysfunction caused by hyperglycemia

12.2012 **Habilitation "Profession of Biologist"**
Italian State with the University of Rome "Tor Vergata". Rome, Italy

Postgraduate professional training

21-23.04.2021 **Nature Masterclass in Scientific Writing and Publishing**
E-learning awarded by SFB1123, certified

21-23.09.2021 **Basic scientific image processing and analysis, BioVoxxel workshop, E-learning**

- Editing, processing and analysis of scientific images, certified

15-17.11.2021 **Advanced scientific image processing and analysis, BioVoxxel workshop, E-learning**
Macro Scripting and Advanced Image Analysis, certified

15.11.2010 – 04.04.2014 **European Atherosclerosis Society (EAS) Certificate of Excellence in Clinical Lipidology (10 ECMEC) (awarded)** E-learning program
Continuing Medical Education credits (CME) and European Accreditation Council for Continuing Medical Education (EACCME), EAS, and ESC

- Fundamental and state-of-the-art developments in clinical lipidology, with focus on its role in cardiovascular disease.
- Epidemiology, metabolism, arterial wall in atherosclerosis, risk factors and risk prediction
- ESC/EAS guidelines, genetic CVD, familial dyslipidemias, pharmacological treatment of hypercholesterolemia and other dyslipidemias, life style and nutrition in CVD and prevention
- Mendelian randomization studies.

29-31.12.2012 **2-DIGE technology training and workshop**
Italian National Agency for New Technologies, Energy and Sustainable Economic Development (ENEA) – Casaccia Research Centre - Santa Maria di Galeria (RM)

- Basis of Proteomic 2-D DIGE, protein sample labelling, 2-D electrophoresis, image acquisition and gel piking.
- Analysis of gel and results using the DeCyder 2-D software

Achievements and Awards

- **EAS Certificate of Excellence in Clinical Lipidology**, EAS award first price for Project Excellence 2019-2020
- **Young Fellows of EAS Program**, EAS Vienna Congress 2020,
- **1st prize winner British Atherosclerosis Society**, Annual Meeting 2018. Queen´s College, Cambridge
- **Young Investigator Awards 1st running-up prize winner**, FCVB Congress 2016, Florence
- **1st prize winner at IPEK Day of Science** 2013, Ludwig-Maximillian Universität (LMU), Munich

Projects Awarded

06.2016 - 10.2020 **Antragsteller of DFG KA 4209/21-1 AOBJ: 628713.** Awarded
Institute for Cardiovascular Prevention (IPEK), Munich

Topic: Role of microRNAs on HIF-1alpha-mediated regulation of energy metabolism in macrophages during atherosclerosis
Funding: 450.350 Euro

27.07.2023 - present **SFB 1123/3 – 2023. Projektnummer: 238187445. Principal Investigator.**
Institute for Cardiovascular Prevention (IPEK), Munich

Topic: The role of DNA in endothelial micronuclei and of the cyto solic DNA sensor cGAS in atherosclerosis.
Project leader: Dr. Lucia Natarelli
- **Funding**: 201.276 Euro

Memberships and Editorial board

2019 - present European Atherosclerosis Society (EAS) Membership

2020 - 2022 Deutsches Zentrum für Herz-Kreislauf-Forschung (DHZK) Young Memberhip

2020 - present Deutsches Zentrum für Herz-Kreislauf-Forschung (DHZK) Scientist

2019 - present British Atherosclerosis Society (BAS) Membership

2021 – present Guest Associate Editor *Frontiers in Inflammation*

2021 – present Review Editor Frontiers in *Cardiovascular Endocrinology*

2021 – present Guest Editor *Biomedicines*

Main scientific publications

All scientific publications are updated at the certified ORCID iD: 0000-0002-9725-6576
Publon Researcher ID for main Editorial and Peer Review Journals Board: AAY-6449-2020

Tahamtan A, Samadizadeh S, Salimi V, **Natarelli L** and Nakstad B (2023) Editorial: miRNAs and inflammation: from biogenesis to therapeutic option. Front. Immunol. 14:1296589. doi: 10.3389/fimmu.2023.1296589

Cimen I*, **Natarelli L***, Abedi Kichi Z, Henderson JM, Farina FM, Briem E, Aslani M, Megens RTA, Jansen Y, Mann-Fallenbuchel E, Gencer S, Duchêne J, Nazari-Jahantigh M, van der Vorst, EPC Enard W, Döring Y, Schober A, Santovito D, Christian Weber C. ***equal contribution**

Kichi ZA, **Natarelli L**, Sadeghian S, Boroumand MA, Behmanesh M, Weber C. Orphan GPR26 Counteracts Early Phases of Hyperglycemia-Mediated Monocyte Activation and Is Suppressed in Diabetic Patients.

Biomedicines. 2022 Jul 19;10(7):1736. doi: 10.3390/biomedicines10071736.

Natarelli L*, Parca L, Mazza T, Christian Weber C, Virgili F, and Fratantonio D. MicroRNAs and long non-coding RNAs as potential candidates to target specific motifs of SARS-CoV-2. Non-coding RNA 16 February 2021.
***corresponding author**.

Santovito D*, Egea V*, Bidzhekov K*, **Natarelli L***, Mourão A, Wichapong K, Blanchet X, Aslani M, Horckmans M, Hristov M, Lutgens E, Daemen MJAP, Hackeng T, Ries C, von Hundelshausen P, Steffens S, Duchene J, Megens RTA, Sattler M, Weber C. Non-canonical inhibition of caspase-3 by a nuclear microRNA confers endothelial protection by autophagy in atherosclerosis. Sci Transl Med, 2020. 12:eaaz2994. PMID: 32493793.
***equal contribution**

Santovito D, Marcantonio P, Mastroiacovo D, **Natarelli L**, Mandolini C, De Nardis V, Paganelli C, De Cesare D, Affaitati G, Giamberardino MA, Stellin L, Pinelli M, Weber C, De Blasis G, Occhiuzzi U, Bucci M, Desideri G, Cipollone F. High dose rosuvastatin increases ABCA1 transporter in human atherosclerotic plaques in a cholesterol-independent fashion. Int J Cardiol. (2020) Jan 15.

Natarelli L, Geißler C, Csaba G, Wei Y, Zhu M, di Francesco A, Hartmann P, Zimmer R, Schober A. miR-103 promotes endothelial maladaptation by targeting lncWDR59. Nat Commun. (2018), 628-629:1317-1327

Wei Y, Corbalán-Campos J*, Gurung R*, **Natarelli L**, Zhu M, Exner N, Erhard F, Greulich F, Geißler C, Uhlenhaut NH, Zimmer R, Schober A. Dicer in Macrophages Prevents Atherosclerosis by Promoting Mitochondrial Oxidative Metabolism. Circulation. (2018), 138(18):2007-2020.

Di Francesco A, Fedrigo M, Santovito D, **Natarelli L**, Castellani C, De Pascale F, Toscano G, Fraiese A, Feltrin G, Benazzi E, Nocco A, Thiene G, Valente M, Valle G, Schober A, Gerosa G, Angelini A. MicroRNA signatures in cardiac biopsies and detection of allograft rejection. J Heart Lung Transplant. (2018), 37(11):1329-1340.

Hartmann P, Zhou Z, **Natarelli L**, Wei Y, Nazari-Jahantigh M, Zhu M, Grommes J, Steffens S, Weber C, Schober A. Endothelial Dicer promotes atherosclerosis and vascular inflammation by miRNA-103-mediated suppression of KLF4. Nat Commun. (2016), 7:10521.

Natarelli L, Ranaldi G, Leoni G, Roselli M, Guantario B, Comitato R, Ambra R, Cimino F, Speciale A, Virgili F and Canali R. Nanomolar caffeic acid decreases glucose uptake and the effects of high glucose in endothelial cells. PLoS One. (2015) 10(11):e0142421.

Ambra R, Manca S, Palumbo MC, Leoni G, **Natarelli L**, De Marco A, Consoli A, Pandolfi A, Virgili F. Transcriptome analysis of human primary endothelial cells (HUVEC) from umbilical cords of Gestational Diabetic mothers reveals candidate sites for an epigenetic modulation of specific gene expression. Genetics (2014), 103(5-6):337-48.