



Lucia Balazova

Date of birth: 4 Aug 1987 | **Nationality:** Slovak | **Phone number:**

(+421) 232295242 (Work) | **Email address:** lucia.balazova@savba.sk |

Address: Dubravská cesta 9, Biomedical Research Center, 84505, Bratislava, Slovakia (Work)

● EDUCATION AND TRAINING

AUG 2011 – AUG 2015 Bratislava, Slovakia

PHD. Institute of Experimental Endocrinology SAS/Comenius University, Faculty of Natural Sciences

Address Bratislava, Slovakia |

Thesis Metabolic parameters of adipose tissue in early and late obesity and metabolic syndrome - oxytocin effects

AUG 2009 – MAY 2011 Bratislava, Slovakia

MSC. Comenius University in Bratislava, Faculty of Natural Sciences

Address Bratislava, Slovakia | **Final grade** Cum laude |

Thesis Stimulation of adipogenesis by oxytocin in vivo in rat adipose tissue

AUG 2006 – JUN 2009 Slovakia

BC. Comenius University in Bratislava, Faculty of Natural Sciences

Address Slovakia | **Thesis** Role of local adipose tissue renin-angiotensin system in pathogenesis of obesity

● WORK EXPERIENCE

1 OCT 2021 – CURRENT Bratislava, Slovakia

JUNIOR PRINCIPAL INVESTIGATOR BIOMEDICAL RESEARCH CENTER OF THE SLOVAK ACADEMY OF SCIENCES (BMC SAS)

30 SEP 2015 – 29 SEP 2021 Zurich, Slovakia

POSTDOCTORAL RESEARCHER SWISS FEDERAL INSTITUTE OF TECHNOLOGY (ETH ZURICH), INSTITUTE OF FOOD, NUTRITION AND HEALTH

● ADDITIONAL INFORMATION

HONOURS AND AWARDS

14 OCT 2022

Finalist of the ESET science award 2022 in the category Outstanding Scientist in Slovakia under the age of 35 – ESET foundation

14 JUN 2022

Scientist of the Year 2021 in the category Young investigator – CVTI, SAV and ZSVTS

26 AUG 2014

Young Investigator Award – Federation of European Physiological Societies (FEPS) European Young Physiologist Symposium, Joint Meeting of the Federation of European Physiological Societies and the Hungarian Physiological Society, Budapest, Hungary

5 OCT 2012

Best poster presentation – Slovak Endocrinological Society XXXV. Endocrinology Congress in Bratislava, Slovakia

1 JUN 2011

Comenius University Rector's Award for outstanding academic results – Comenius University in Bratislava

RESEARCH INTERESTS

Energy Metabolism and Metabolic Diseases

Adipose tissue physiology, Liver physiology and heterogeneity, Pancreas biology

PROFESSIONAL SKILLS

Molecular biology techniques

qPCR, western blot, immunohistochemistry, immunofluorescence, ELISA, cloning (targeting plasmid, lentivirus, AAV generation), RNA sequencing, chromatin immunoprecipitation and pull-down assays, subcellular fractionation

Cell culture work

culture of mammalian cells (cell lines and primary cells), gain- and loss-of-function studies (siRNA, shRNA, lentivirus), different functional assays (mitochondrial respiration, lipolysis, glucose and fatty acid uptake and oxidation, lipid accumulation), generation of stable cell lines

Mouse work

general mouse work (injections, blood sampling, oral gavage), metabolic phenotyping (Echo-MRI and CT scanner, energy expenditure measurement by TSE Phenomaster and Sable Systems, insulin and glucose tolerance test), AAV administration

PROJECTS

31 AUG 2022 – 29 AUG 2025

Investigating the role of GPR180/CTHRC1 axis in regulation of pancreatic B cell function and pathogenesis of diabetes SASPRO2 grant (Horizon 2020 Marie Skłodowska-Curie COFUND Action Program)

31 DEC 2015 – 30 DEC 2018

Analyzing the transcriptional control of adipose tissue browning ETH Zurich postdoctoral fellowship (Marie Curie Actions for the People COFUND Program)

MAY 2012 – JUN 2012

Analysis of plasma and adipose tissue aminopeptidase activities in different models of obesity Travel grant (Slovak Academic Information Agency)

Short-term research stay at University of Jaen, Spain

PUBLICATIONS

25 publications, > 500 citations, Hirsch index 11

TOP 5 publications

1. **Balazova L**, Balaz M, Horvath C, Horvath A, Moser C, Kovanicova Z, Ghosh A, Ghoshdastider U, Efthymiou V, Kiehlmann E, Sun W, Dong H, Ding L, Amri EZ, Nuutila P, Virtanen KA, Niemi T, Ukropcova B, Ukropec J, Pelczar P, Lamla T, Hamilton B, Neubauer H, Wolfrum C. GPR180 is a component of TGF beta signalling that promotes thermogenic adipocyte function and mediates the metabolic effects of the adipocyte-secreted factor CTHRC1. *Nature Communications*, 2021; 12(1):7144.

2. Dong H, Sun W, Shen Y, Balaz M, **Balazova L**, Ding L, Löffler M, Hamilton B, Klötting N, Blüher M, Neubauer H, Klein H, Wolfrum C. Identification of a regulatory pathway inhibiting adipogenesis via RSPO2. *Nature Metabolism*, 2022; 4(1):90-105.

3. Sun W, Dong H, Balaz M, Slyper M, Drokhlyansky E, Colleluori G, Giordano A, Kovanicova Z, Stefanicka P, **Balazova L**, Ding L, Husted AS, Rudofsky G, Ukropec J, Cinti S, Schwartz TW, Regev A, Wolfrum C. snRNA-seq reveals a subpopulation of adipocytes that regulates thermogenesis. *Nature*, 2020; 587: 98-102.

4. Balaz M, Becker AS, **Balazova L**, Straub L, Müller J, Gashi G, Maushart CI, Sun W, Dong H, Moser C, Horvath C, Efthymiou V, Rachamin Y, Modica S, Zellweger C, Bacanovic S, Stefanicka P, Varga L, Ukropcova B, Profant M, Opitz L, Amri EZ, Akula MK, Bergo M, Ukropec J, Falk C, Zamboni N, Betz MJ, Burger IA, Wolfrum C. Inhibition of Mevalonate Pathway Prevents Adipocyte Browning in Mice and Men by Affecting Protein Prenylation. *Cell Metabolism*, 2019; 29(4): 901-916.e8.

5. Sun W, Dong H, Becker AS, Dapito DH, Modica S, Grandl G, Opitz L, Efthymiou V, Straub LG, Sarker G, Balaz M, **Balazova L**, Perdikari A, Kiehlmann E, Bacanovic S, Zellweger C, Peleg-Raibstein D, Pelczar P, Reik W, Burger IA, von Meyenn F, Wolfrum C. Cold-induced epigenetic programming of the sperm enhances brown adipose tissue activity in the offspring. *Nature Medicine*, 2018; 24(9): 1372-1383.

Y-6371-2019 (Researcher ID, Web of Science)

Full list of publications available at <https://www.webofscience.com/wos/author/record/1853316>

PRESENTATIONS AT INTERNATIONALLY ESTABLISHED CONFERENCES

58th International Conference for Lipid Research (ICBL), 10-14 September 2017, Zurich, Switzerland

Joint Meeting of the Federation of European Physiological Societies (FEPS) and the Hungarian Physiological Society, 27-30 August 2014, Budapest, Hungary

21th European Congress on Obesity (ECO2014), 28-31 May, 2014, Sofia, Bulgaria

NETWORKS AND MEMBERSHIPS

2022 – CURRENT Bratislava
Slovak Hepatology Society

2011 – 2015
Slovak Physiology Society

REVIEWING ACTIVITIES

2021
The Scientific Grant Agency of the Ministry of Education, Science, Research and Sport of the Slovak Republic and of the Slovak Academy of Sciences

Reviewer in scientific journals

Molecular Metabolism, Adipocyte, Journal of Endocrinology

TEACHING ACTIVITIES

2022
Advances in Molecular Physiology, Department of Animal Physiology, Faculty of Natural Sciences, Comenius University

Lecturer

2016 – 2021
Molecular Biology course, ETH Zürich, Switzerland

Instructor and examiner

2016 – 2017
Rat Anatomy course, ETH Zürich, Switzerland

Instructor

SUPERVISION OF STUDENTS

Bachelor students

Viktoria Lory, Department of Animal Physiology and Ethology, Faculty of Natural Sciences, Comenius University in Bratislava, Slovakia (september 2012 - may 2013)

Dominika Pavlovicova, Department of Animal Physiology and Ethology, Faculty of Natural Sciences, Comenius University in Bratislava, Slovakia (september 2014 - may 2015)

Master students

Svenja Keller, Department of Health Sciences and Technology, ETH Zürich, Switzerland (January 2020 – September 2020)

Laura Veselska, Department of Animal Physiology and Ethology, Faculty of Natural Sciences, Comenius University in Bratislava, Slovakia (2022 -)

Internship students

Azmi Rahman Sultan Sikander (Imperial College London, United Kingdom) Amgen Scholar Programme at ETH Zürich, Switzerland (July – September 2017)

Svenja Ruth, Department of Health Sciences and Technology, ETH Zürich, Switzerland (September – December 2018)

Pratheba Kandasamey, Department of Health Sciences and Technology, ETH Zürich, Switzerland (October 2019 – August 2020)