

# EUROPEAN PLACENTA GROUP CONFERENCE

**Hradec Králové, Czech Republic**  
**7 - 8 November 2024**



Co-funded by  
the European Union

# WELCOME MESSAGE

Dear Participants,

On behalf of the organizing committee, we warmly welcome you to the European Placenta Group (EPG) Conference 2024, hosted by the Faculty of Pharmacy in Hradec Králové, Charles University. This conference is organized in collaboration with the EPG, which promotes high-quality research in placental physiology, pathology, therapeutics, and biotechnology in humans and animals in Europe.

The conference brings together placenta researchers from across Europe to present their latest scientific work and exchange insights on diverse topics, ranging from environmental and pharmacological impacts on placental development to metabolic, immunological, and pathophysiological aspects of placental function.

A key feature of this conference is its strong emphasis on PhD students and early career researchers. We are proud to provide these young scientists with a platform to share their research. Their contributions are featured throughout the program, fostering meaningful engagement with experts.

In addition to the rich scientific content, the EPG Conference provides an excellent opportunity for networking. We encourage all participants to engage in discussions, form new collaborations, and strengthen professional relationships.

We look forward to a productive conference and engaging discussions.

Sincerely,

EPG Conference 2024 Organizing Team

# IMPORTANT ADDRESSES

## Conference venue

Hotel Nové Adalbertinum

<https://noveadalbertinum.cz/en>

Velké nám. 32, 500 03 Hradec Králové

<https://maps.app.goo.gl/jetSq92DEHzrF2sMA>

## Informal dinner (6<sup>th</sup> of November) – at your own expense

Pivovarské domy (Pivnice)

<https://www.pivovarskedomy.cz/pivnice/>

Velké nám. 26, 500 03 Hradec Králové 3

<https://maps.app.goo.gl/46Ejx33qu5v1ZP417>

## Networking dinner (7<sup>th</sup> of November) – provided

Hotel Nové Adalbertinum

<https://noveadalbertinum.cz/en>

Velké nám. 32, 500 03 Hradec Králové

<https://maps.app.goo.gl/jetSq92DEHzrF2sMA>

# SCIENTIFIC PROGRAM

## DAY 1 – 07.11.2024

- 8:30 – 9:00 Registration
- 9:00 – 9:10 **Jaroslav Roh, Dean of the Faculty of Pharmacy in Hradec Kralove:** Opening Remarks
- 9:10 – 9:20 **Frantisek Štaud:** Introduction to the NETPHARM project

### Environmental Impacts on placental development (NETPHARM)

**Chairs: Christiane Albrecht, Anne Couturier-Tarrade**

- 9:20 – 09:30 **Manon Murdeu:** “Human-based placenta-embryo chip for developmental toxicity assessment of nanoparticles and drugs”
- 9:30 – 09:40 **Subhradip Karmakar:** “Impact of air pollutant sulfur dioxide exposure on syncytialization and invasion processes in trophoblast cells: role in ER stress”
- 9:40 – 09:50 **Jeanne Bozec:** “Effects of maternal exposure to a mixture of food chemical compounds on fetoplacental development”
- 9:50 – 10:00 **Thomas Contini:** “Decript – deciphering the human prenatal chemical exposome using high-resolution mass spectrometry”

**10:00 – 10:30 Coffee Break**

### Pharmacological impacts on placental function (NETPHARM)

**Chairs: Frantisek Štaud, Mark Dilworth**

- 10:30 – 10:40 **Odysseas Chaliotis:** “Microphysiological models of the human placenta to study Brucella infections and antibiotic treatment during pregnancy”
- 10:40 – 10:50 **Nadja Koechli:** “Development of a fluidic in vitro model to investigate maternal-fetal drug transfer”
- 10:50 – 11:00 **Madhavi Harhangi:** “Vasoactivity of cannabis components in human placental arteries”
- 11:00 – 11:10 **Doaa Babaeer:** “Investigating the effects of beta blockers on fetal vasculature”
- 11:10 – 11:20 **Theresa Tropea:** “Nebivolol induced relaxation of human chorionic plate arteries is dependent on the NOS/NO/SGC pathway”
- 11:20 – 11:30 **Eleasha Calloway:** “Metformin treatment during pregnancy does not negatively impact placental mitochondrial function”
- 11:30 – 11:40 **Doha Boukaoui:** “Development of methotrexate nanoparticles for the treatment of gestational trophoblastic neoplasia”
- 11:40 – 11:50 **Hong Jiang:** “Gene regulation and intercellular communication at single cell level in placentas from women with polycystic ovary syndrome treated with metformin during pregnancy”

**11:50 – 13:00 Lunch break (provided)**

## Extracellular vesicles in placental function and disease (NETPHARM)

**Chairs: Udo Markert, Jose Martin Murrieta Coxca**

- 13:00 – 13:10 **Alin Mishel Hernandez Bustos:** “The release of membrane-bound mitochondrial DNA by aging-associated trophoblasts”
- 13:10 – 13:20 **Marei Sammar:** “A novel microarray analyser for prediction of preeclampsia using multi surface biomarkers on placental extracellular vesicle from maternal plasma”
- 13:20 – 13:30 **Michaela Stoiber:** “Impact of feto-placental small extracellular vesicles on preeclampsia and fetal immunity”
- 13:30 – 13:40 **Faheem Seedat:** “Placental small extracellular vesicles from both normal pregnancy and gestational diabetes enhance insulin gene transcription and increase insulin content in b cells”
- 13:40 – 13:50 **Molly Rutt:** “Endometrial gland-derived extracellular vesicles and their miRNA content”

**13:50 – 14:00 Short break**

## Maternal obesity, gestational diabetes, and placental dysfunction (4EU+)

**Chairs: Gernot Desoye, Cilia Abad**

- 14:00 – 14:10 **Jasminka Štefulj:** “Expression of serotonin-regulating genes in term placental of overweight / obese women with or without gestational diabetes mellitus”
- 14:10 – 14:20 **Maja Perić:** “Activity of monoamine oxidase in human placentas exposed to maternal overweight/obesity and gestational diabetes mellitus”
- 14:20 – 14:30 **Cindy Xin Wen Zhang:** “Effect of maternal inflammation during obese pregnancy on placental nutrient transport and fetal growth”
- 14:30 – 14:40 **Silke Große:** “Trophoblastic epithelial-mesenchymal transition with consecutive fibrosis: a cause of reduced placental function in hyperglycaemic pregnancies?”

**14:40 – 15:20 Coffee break**

## Pathophysiological insights into preeclampsia (4EU+)

**Chairs: Christian Wadsack, Paul Brownbill**

- 15:20 – 15:30 **Vicente Pérez-García:** “GPI signal lost”: implications for preeclampsia”
- 15:30 – 15:40 **Nilüfer Kamali Simsek:** “Dual effects of arachidonic acid and Piezo 1 on feto-placental endothelial barrier function”
- 15:40 – 15:50 **Marta Cherubini:** “A vascularized 3D placenta-on-a-chip to study barrier dysfunction in pre-eclampsia”
- 15:50 – 16:00 **Kaja Ujčič:** “Modulation of thrombopoiesis by placenta-derived factors: insights from MEG-01 cells”

**16:00 – 16:15 Short break**

**16:15 – 17:30 EPG Meeting (all participants)**

**19:00 Networking dinner (provided)**

## DAY 2 – 08.11.2024

9:00 – 9:10 **Rona Karahoda:** Introduction to the 4EU+ project

### 4EU+ session

**Chair: Rona Karahoda**

9:10 – 9:20 **Marie Cohen:** “Models for studying human trophoblast fusion”

9:20 – 9:30 **Lukas Červený:** “Dynamic regulation of nucleoside and nucleotide metabolism in human placenta: implications for trophoblast function and drug-induced toxicity”

9:30 – 9:40 **Line Mathiesen:** “Placental transfer of chemicals: ex vivo placental perfusion model”

### Immune cells in pregnancy – regulation of placental development and function (4EU+)

**Chairs: Sandra Haider, Courtney Hanna**

09:40 – 9:50 **Anna-Lena Höbner:** “Maternal-fetal interface favors a specific neutrophil type characterized by a long-lived, immunosuppressive phenotype, able to enhance EVT motility”

10:00 – 10:10 **Jantine Van Voorden:** “The proinflammatory cytokines INF- $\alpha$  and TNF- $\alpha$  inhibit extravillous trophoblast invasion”

10:10 – 10:20 **Freya Lyssy:** “Platelet-derived factors modulate gene expression profile of human trophoblast”

10:20 – 10:30 **Kylie Belchamber:** “Decidual macrophage efferocytosis of trophoblasts in full term human placenta”

**10:30 – 11:00 Coffee Break**

### Trophoblast differentiation and function (4EU+)

**Chairs: Rohan Lewis, Gudrun Meinhardt**

11:00 – 11:10 **Ana Ferrero-Micó:** “Hapln3 is involved in trophoblast differentiation and invasion”

11:10 – 11:20 **Fangxu Lin:** “The combined levels of CREBBP and EP300 affect EVT differentiation”

11:20 – 11:30 **Jasmin Wächter:** “Neuregulin plays a multifaceted role in the extravillous trophoblast lineage of the human placenta”

11:30 – 11:40 **Pilar Van Mechelen:** “The role of calcium signals in trophoblast fusion”

11:40 – 11:50 **Kateřina Trejbalová:** “Challenging the syncytin-1 receptor dualism: implications for cell fusion in the human placenta”

11:50 – 12:00 **Ella Proudley:** “3D quantification analysis of the microvillous membrane of the human placental syncytiotrophoblast”

**12:00 – 13:00 Lunch break (provided)**



## Models in placental development and function (NETPHARM)

**Chairs: Gijs Afink, Katrien De Clercq**

- 13:00 – 13:10 **Georgia Lea:** “Determinants of DNA methylation patterning in human placental development and trophoblast stem cell models”
- 13:10 – 13:20 **Jantine Van Voorden:** “Optimizing the generation of human induced trophoblast stem cells from term umbilical cord”
- 13:20 – 13:30 **Theresa Maxian:** “Characterization and in vitro modelling of trophoblast and villous core networks of human first trimester placental cells”
- 13:30 – 13:40 **Karolina Radziun:** “Human differentiated and undifferentiated trophoblast organoids as a novel model for human cytomegalovirus congenital infection”
- 13:40 – 13:50 **Anna-Maria Prandstetter:** “Crosstalk between extravillous trophoblasts and decidual glands in early human pregnancy”
- 13:50 – 14:00 **Mohammad Rida Ghaddar:** “Characterization of ex vivo and in vitro models to study the crosstalk between the endocannabinoid and immune systems in the placenta”
- 14:00 – 14:10 **Sergio Navarro-Serna:** “Exploring organoid oviductal gland secretions for optimizing in vitro culture media: insights from a bovine model”

**14:30 – 15:10 Coffee break**

## Metabolic implications in placental function and fetal growth (NETPHARM)

**Chairs: Isabella Ellinger, Hanna Allerkamp**

- 15:10 – 15:20 **Anandita Umapathy:** “Placental insufficiency and fetal heart development: insights into the structural and functional consequences of fetal growth restriction”
- 15:20 – 15:30 **Jessica Dalton-O'Reilly:** “Antenatal melatonin supplementation increases fetal weight and reduces placental oxidative damage in a mouse model of advanced maternal age”
- 15:30 – 15:40 **Tetiana Synova:** “Metabolomic and transcriptomic profiling of the placental endocannabinoid system: a comparative study between term and preterm births”
- 15:40 – 15:50 **Fiona Kumnova:** “Characterization of placental NLRP3 inflammasome across pregnancy stages and its modulation by hyperglycemia, metformin, and LPS”
- 15:50 – 16:00 **Lorenzo Annesi:** “The role of xanthine oxidase in pregnancy's outcomes”

**16:00 – 16:30 Coffee Break (Award committee discussions)**

**16:30 – 17:30 Closing & Awards**

# SCIENTIFIC COMMITTEE

We would like to thank the following members of the scientific committee for their contribution in reviewing the abstracts:

- Anne Couturier-Tarrade, PhD
- Christian Wadsack, PhD
- Christiane Pfarrer, PhD
- Cilia Abad, PhD
- Hanna Allerkamp, PhD
- Lukas Červený, PhD
- Mark Dilworth, PhD
- Michelle Broeckhuizen, PhD
- Rohan Lewis, PhD
- Sandra Haider, PhD
- Tina Bürki, PhD



# SPONSORS

## NETPHARM

NETPHARM is a pioneering project that connects leading research institutions and multidisciplinary teams in pharmaceutical sciences. Focused on advancing therapeutics, (nano)formulations, and drug delivery systems, NETPHARM employs innovative technologies and translational drug development models. The project fosters close international collaborations and participation in prominent European research initiatives such as Horizon Europe.

*The 19th European Placenta Group Conference is supported by the project New Technologies for Translational Research in Pharmaceutical Sciences /NETPHARM, project ID CZ.02.01.01/00/22\_008/0004607, co-funded by the European Union.*

## 4EU+ European University Alliance

The 4EU+ European University Alliance brings together Charles University, Heidelberg University, Paris-Panthéon-Assas University, Sorbonne University in Paris, the University of Copenhagen, the University of Geneva, the University of Milan, and the University of Warsaw. 4EU+ aims to establish a comprehensive, research-intensive European University through enhanced cooperation in teaching, education, research, and administration.

*The conference is supported by the Charles University 4EU+ mini-grant FROM FETAL TO LIFELONG HEALTH: DYNAMIC MATERNAL ENVIRONMENTS AND IMPACT OF THE PLACENTA, project code MA/4EU+/2024/F1/06.*

# CONTACT INFORMATION

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- Frantisek Štaud, Ph.D.
- Lukas Červený, Ph.D.

## Support:

- Cilia Abad, Ph.D.
- Veronika Váchalová
- Tetiana Synova
- Fiona Kumnova
- Mohammad Rida Ghaddar
- Maria Shostopal

## External Partners:

- Marie Cohen, Ph.D. (University of Geneva)
- Karin Sørig Hougaard, Ph.D. (University of Copenhagen)

# THANK YOU FOR ATTENDING THE EUROPEAN PLACENTA GROUP CONFERENCE 2024.

We look forward to your continued engagement  
and collaboration.

Stay connected with us on social media! Use the  
hashtag **#EPG2024**.

X: **@EPG\_Placenta**

[www.europeanplacenta.com](http://www.europeanplacenta.com)