



INTERNATIONAL RESEARCH TRAINING GROUP 1874/2
Diabetic Microvascular Complications



AUTUMN
SCHOOL
2017

DFG Deutsche
Forschungsgemeinschaft



university of
 groningen



umcg



Chairmen

Prof. Dr. H.-P. Hammes

V. Med. Clinic, UMM

Prof. Dr. J. Kroll

Vascular Biology & Tumor Angiogenesis, UMM

Prof. Dr. H. Moshage

Graduate School GUIDE, Dept. of Gastroenterology and Hepatology, UMCG

Speakers

Prof. Dr. M. Harmsen

Dept. of Pathology & Laboratory Medicine, UMCG

Dr. H. Hillebrand

Graduate Academy Heidelberg

PD Dr. A. Kannt

Sanofi, Frankfurt

Prof. Dr. P. Oates

Oates Biomedical Consulting, Old Lyme

Prof. Dr. K. Preissner

Institute for Biochemistry, Justus-Liebig-University Gießen

Dr. D. Schumacher

Institute of Pharmacology, Heidelberg University

PD Dr. A. Wagner

Institute of Physiology and Pathophysiology, Heidelberg University

Venue

Universitätsmedizin Mannheim

Patientenhaus (HS 43), Raum Weitblick

Theodor-Kutzer-Ufer 1-3

68167 Mannheim

17:00

COFFEE & WELCOME

WP 1: General Mechanisms

Chairs: Angelica Rodriguez & Marcus Dannehl

17:30 - 17:45

SP1 Detoxifying enzymes in diabetic target tissues – mitochondrial dependent and independent effects of methylglyoxal, **Beatrix Fuchs**

17:45 - 18:00

SP2 Targeting Angiopoietin-2 in diabetic complications, **Anupriya Chatterjee**

18:00 - 18:30

General elections for the Federal Government: First Projection

18:30 - 19:30

DINNER / Patientenhaus

Chair: Katharina Kohl

19:30 - 20:30

Candlelight lecture: The Polyol Pathway in the Pathogenesis of Diabetic Complications: History, Lessons Learned and a New Paradigm, **Peter Oates**

20:30 - 22:00

GET-TOGETHER

Chairs: Beatrix Fuchs & Marloes Sol

- 08:30- 08:45 **SP3** Hyperglycemia-induced monocyte-macrophage differentiation, **Marije Mossel**
- 08:45 - 09:00 **SP4** Kv channels in myogenic and perivascular fat-dependent autoregulation and small artery diabetic dysfunction, **Sarah Albrecht**
- 09:00 - 09:15 **AP** Role of TRPC channels in the development of diabetic retinopathy and reactive metabolites accumulation, **Robin Sachdeva**

WP 2: Diabetic Retinopathy

Chairs: Mira Klix & Ali Haider Utsho

- 09:15 - 09:30 **AP** ASC-derived pericytes in Diabetic Retinopathy, **Naomi Weertman**
- 09:30 - 09:45 **SP5** Hyperglycemic memory – mechanisms relevant to the diabetic retina, **Katharina Kohl**
- 09:45 - 10:00 **SP6** Impact of adipose-derived stem cells (ADSC) on diabetic and proliferative retinopathy, **Agnese Fiori**
- 10:00 - 10:30 **COFFEE**
- 10:30 - 10:45 **SP7** MicroRNA-induced microangiopathy in diabetes, **Marcus Dannehl**
- 10:45 - 11:00 **AP** Functional and histological characterization of PDX1 zebrafish mutants, **Lucas Wiggenhauser**
- 11:00 - 12:00 **NETWORKING DDG, PI-MEETING**
- 12:00 - 13:00 **LUNCH**

WP 3: Diabetic Nephropathy

Chairs: Sarah Albrecht & Magdalena Nguyen

- 13:00- 13:15 **SP9** The function of the Rac1 regulator ELMO1 in the vasculature and in renal development under high glucose in zebrafish and in human diabetic nephropathy, **Ali Haider Utsho**
- 13:15 - 13:30 **SP10** Role of iron-dependent oxidative carbonylation in the course of diabetic nephropathy, **Christoph Hangel**

- 13:30 - 13:45 **SP11** Sequestering of reactive carbonyl species (RCS) by carnosine ameliorates vascular damage in vitro, **Angelica Rodriguez**
- 13:45 - 14:00 **SP12** Diabetic nephropathy in the BTBR Ob/Ob mouse as a pre-clinical model for therapeutic interventions, **Jiedong Qiu**
- 14:00 - 14:15 **AP** Extracellular matrix and pericytes, **Julian Gebauer**
- 14:15 - 14:30 **AP** Glomerular Enhancer of Zeste Homolog-2 (EZH2) histone methyltransferase reduces glomerular endothelial glycocalyx during diabetic nephropathy by regulating hyaluronan synthesis, **Marloes Sol**
- 14:30 - 14:45 **SP17** The contribution of glomerular endothelial cells to hyperglycemia-induced glomerular basement membrane thickening, and its effect on modified hyaluronan metabolism, inflammation and fibrosis during the development of diabetic nephropathy, **Jonathan Sleeman**
- 14:45 - 15:30 **COFFEE**

WP 4: Diabetic Neuropathy

Chairs: Agnese Fiori & Jiedong Qiu

- 15:30 - 15:45 **SP13** Loss of POMC-mediated antinociception contributes to painful diabetic neuropathy, **Divija Deshpande**
- 15:45 - 16:00 **SP14** Diabetic thin fiber neuropathy - objective assessment and mechanism, **Magdalena Nguyen**
- 16:00 - 16:15 **SP15** Neurovascular assessment of cornea, retina and facial skin in diabetes type 1 patients, **Mira Klix**
- 16:15 - 17:30 **Collaborative Projects**

Chair: Lucas Wiggerhauser

- 17:30 - 18:30 **Candlelight lecture:** New Mechanisms of Collateral Vessel Formation, **Klaus Preissner**
- 18:30 - 19:00 Walk to the TV Tower
- 19:00 **DINNER / TV Tower**

News and Views

Chair: Jens Kroll

- 08:30- 09:00 Graduate Academy of Heidelberg University,
Helke Hillebrand
- 09:00 - 09:30 Pyruvate kinase M2 activation to improve mitochondrial function
and treat diabetic kidney disease, **Aimo Kannt**
- 09:30 - 10:00 Scare away dermal scars with fat: implications for diabetic wound
healing and other complications, **Marco Harmsen**
- 10:00 - 10:30 **COFFEE**
- 10:30 - 10:45 **CRC 1118** Metabolic shift from glycolysis towards lipid oxidation in
Schwann cells in response to hyperglycaemia, **Tamara Smit**
- 10:45 - 11:15 Renal vascular function - physiology and pathophysiology,
Andreas Wagner
- 11:15 - 11:45 Glyoxalase-1-deficient mice show only mildly enhanced deficits in
methylglyoxal detoxification under control or streptozotocin-treated
conditions, **Dagmar Schumacher**
- 11:45 - 12:30 **LUNCH & FAREWELL**