

Gregor Sachse

Co-ordination Cardiovascular Research Cluster / Principal Investigator

Brandenburg Medical School Theodor Fontane

Professional Positions

<u>Research Coordinator</u> , Brandenburg Medical School Theodor Fontane, Germany	Since 2021
<u>Researcher-Co-Investigator</u> , University of Oxford, UK	2018 - 2021
<u>Postdoctoral Researcher</u> , University of Oxford, UK	2012 - 2018
<u>Postdoctoral Researcher</u> , University of Hamburg, Germany	2010 - 2011
<u>Doctoral Student</u> , University of Hamburg, Germany	2004 - 2010

Degrees

PhD	ZMNH, University of Hamburg	2010
Molecular Biology (Zert.)	ZMNH, University of Hamburg	2007
Dipl.-Biochem.	University of Hamburg	2004

Awards and Competitive Funding

BBSRC Impact Award for Public Engagement and Outreach	2020
BBSRC Responsive mode research grant	2018
Oxford University Medical Science Division pump priming grant	2018
Astor Travel Grant	2018
Doctorate Honors <i>summa cum laude</i> (Disp.)	2010

Knowledge Transfer and Outreach

Invited lecture. Mini-Symposium: Molecular and cellular ageing in cardiovascular systems: Insights on current research and methods, FGW Brandenburg, Germany	2021
Invited lecture. Joined Meeting of Oxford Neuroscience & Neurocure Cluster of Excellence, Charité Universitätsmedizin, Berlin	2019
Invited lecture. Fall Meeting 2019, International Graduate School in Molecular Medicine, Ulm University, Germany	2019

Outreach Project. Launched microscopy workshops for >160 school students and developed the underlying resource pack	2019 - 2020
Presented at Neonatal Diabetes Day, Exeter University	2014
Co-organised the International conference on <i>New Frontiers in Ion Channel Physiology</i> , Hamburg, Germany	2011

Teaching and Supervision

Mentoring and project supervision, Post-doc, Brandenburg Medical School	2021
Immunohistochemistry workshop, DPhil students, Oxford University	2018
Project day-to-day supervision, FHS student, Oxford University	2017
Tutorial teaching, preclinical medical students, Oxford University	2015-2016
Project day-to-day supervision, undergraduate, Oxford University	2013
Immunohistochemistry workshop, post-graduates, Hamburg University	2011
Day-to-day supervision, 2 PhD students & 1 technician, Hamburg University	2010-2011
Graduation thesis day-to-day supervision, MSc student, Hamburg University	2010
Molecular biology workshop series, school students, Hamburg University	2009

Peer-reviewed Publications

Sachse G*, Haythorne E, Hill T, Proks P, Joynson R, Terrón-Expósito R, Bentley L, Tucker S, Cox RD, Ashcroft FM. (2021) The KCNJ11-E23K Gene Variant Hastens Diabetes Progression by Impairing Glucose-Induced Insulin Secretion. *Diabetes*. 70(5):1145-1156.

Sachse G*, Haythorne E, Proks P, Stewart M, Cater H, Ellard S, Davies B, Ashcroft FM. (2020) Phenotype of a transient neonatal diabetes point mutation (SUR1-R1183W) in mice. *Wellcome Open Res*. 5:15 (<https://doi.org/10.12688/wellcomeopenres.15529.1>)

Haythorne E, Rohm M, van de Bunt M, Brereton MF, Tarasov AI, Blacker TS, **Sachse G**, Silva Dos Santos M, Terron Exposito R, Davies S, Baba O, Fischer R, Duchon MR, Rorsman P, MacRae JI, Ashcroft FM. (2019) Diabetes causes marked inhibition of mitochondrial metabolism in pancreatic β -cells. *Nat Commun*. 10(1):2474.

Sachse G, Church C, Stewart M, Cater H, Teboul L, Cox RD, Ashcroft FM. (2018) FTO demethylase activity is essential for normal bone growth and bone mineralization in mice. *Biochim Biophys Acta Mol Basis Dis*. 1864(3):843-850.

Proks P, Puljung MC, Vedovato N, **Sachse G**, Mulvaney R, Ashcroft FM. (2016) Running out of time: the decline of channel activity and nucleotide activation in adenosine triphosphate-sensitive K-channels. *Philos Trans R Soc Lond B Biol Sci*. 371(1700). pii: 20150426.

O'Connell SM, Proks P, Kramer H, Mattis KK, **Sachse G**, Joyce C, Houghton JA, Ellard S, Hattersley AT, Ashcroft FM, O'Riordan SM (2015) The value of in vitro studies in a case of neonatal diabetes with a novel Kir6.2-W68G mutation. *Clin Case Rep*. 3(10):884-7.

Merkestein M, Laber S, McMurray F, Andrew D, **Sachse G**, Sanderson J, Li M, Usher S, Sellayah D, Ashcroft FM, Cox RD (2015) FTO influences adipogenesis by regulating mitotic clonal expansion. *Nat Commun*. 6:6792.

Sachse G*, Faulhaber J, Seniuk A, Ehmke H, Pongs O (2014) Smooth muscle BK channel activity influences blood pressure independent of vascular tone in mice. *J Physiol*. 592(12):2563-74.

***corresponding author**

Book Chapter

Sachse G, Kruse M, Pongs O (2011) Genetically Modified Mice: Useful Models to Study Cause and Effect of Cardiac Arrhythmias? In: Tripathi O., Ravens U., Sanguinetti M. (eds), Heart Rate and Rhythm. *Springer, Berlin, Heidelberg*. DOI 10.1007/978-3-642-17575-6_26

Professional Memberships and Networking

German Physiological Society	Since 2019
Mentoring focus group (Athena SWAN committee, University of Oxford)	2017
DFG Forschergruppe 604 "Signalwege im gesunden und kranken Herzen"	2005-2011

Method Experience

Generation and phenotyping of genetically modified mice (KO, KI, TG, CRISPR)
Electrophysiology (single channel, sharp electrode, perforated patch, primary cells, *ex-vivo* tissue)
Antibody-based techniques (Co-IP, IHC, IF, FACS, WB)
Primary cell dissociation, culture, and adenoviral infection
Super-resolution microscopy (STORM, STED)
Molecular biology (cloning, SNP analysis, real time PCR)
Microsurgery and telemetric blood pressure recordings in mice
Ex vivo muscle force measurements
Optogenetics (pHoenix, synapto-pHluorin)
Pancreatic islet isolation and secretion assays
Development and application of enzymatic and immunological assays