



3rd Channelopathy Meeting Tübingen

Genetic epilepsies and other neuronal ion channel disorders: Mechanisms and therapeutic perspectives

23rd-25th September 2025, Tübingen, Germany

<https://med-uni-tuebingen-de.zoom-x.de/j/69452016734?pwd=FpVvfMyrx2KqEa9374SZ7CS9cHPW58.1>

Meeting-ID: 694 5201 6734; Passcode: 346871

Tuesday, 23 September 2025	
7:30 pm	Get-Together Schloss Hohentübingen
Wednesday, 24 September 2025	
8:30 am	Welcome and introduction: Holger Lerche (Tübingen)
8:40-10:00	Session 1: Ion channel mechanisms I Chair: Dirk Isbrandt & Snezana Maljevic
8:40	Maurizio Tagliatela (Neapel): <i>KCNQ</i> modulators: from an atomistic view of channel gating to personalized therapies
9:00	Marisol Sampedro Castaneda (London): <i>CDKL5</i> and its interaction with Cav2.3
9:20	Massimo Mantegazza (Valbonne-Sophia Antipolis): Mechanisms of <i>SCN2A</i> variants associated with Autism Spectrum Disorder
9:40	Ahmed Eltokhi (Columbus): Gating Pore Current in Nav1.2 Mutations: Implications for Autism and Epilepsy
9:55	Daniil Kirianov (Cologne): Unravelling the seizure initiation and progression through the neonatal <i>Scn2a</i> (p.A263V) hippocampus
10:15-10:40	Coffee Break
10:40-12:00	Session 2: Immunological and other epileptogenic mechanisms Chair: Albert Becker & Christian Geis
10:40	Harald Prüß (Berlin): Antibody-mediated channelopathies - new disease concepts
11:00	Julika Pitsch (Bonn): Microstructural correlates of neuro-immune dysregulation in autoimmune encephalitis
11:20	Michael Wenzel (Bonn): Hippocampal spreading depolarization as a key epilepsy disease factor
11:40	Christian Geis (Jena): Effects of NMDAR autoimmunity on receptor function and hippocampal circuits
12:00-1:05	Session 3: Progress in genetic mechanisms and prediction algorithms Chair: Rikke Møller & Yvonne Weber
12:00	Alex Hoischen/Holm Graeßner (Nijmegen/Tübingen): Rare diseases – boosting diagnostic yield by data re-analysis and long-read genome sequencing
12:30	Josua Kegele (Tübingen): Short- and long-read genome sequencing in early-onset DEE: results and insights
12:45	Henrike Heyne (Cambridge): Predicting functional effects of genetic variants in ion channels with methods of deep learning
1:05-2:15	Lunch Break
2:15-3:25	Session 3: Gene therapy Chair: Marius Ueffing & Gaia Colasante
2:15, virtuell	Keynote lecture Steven Gray (Dallas): Gene therapy for neurological disorders: the example of <i>SLC6A1</i> deficiency
2:45	Dirk Grimm (Heidelberg): Parvoviral vector-mediated gene therapy in the CNS (and beyond): A no-brainer?
3:05	Elvir Becirovic (Zürich): AAV vector-mediated delivery of large genes for retinal gene therapy and beyond
3:25-4:30	Poster session (with coffee)
4:30-6:30	Session 4: Clinical trials and Molecular therapeutic board (case reports) Chair: Holger Lerche & Steve Petrou
4:30	Victoria Ruschil (Tübingen): Familial episodic pain syndrome in a family with an unknown <i>SCN11A</i> -variant

4:40	Walid Fazeli (Bonn)/Matias Wagner (Munich)/Steve Petrou (PraxisMedicine, Boston): Towards disease-modification in <i>SCN2A</i> DEE: insights into antisense-oligonucleotide treatment
5:05	Oleg Vinogradov/Elena Kuster (Tübingen)/Henning Steinhagen (Lario, Edinburgh): Towards a targeted therapy for <i>CACNA1E</i> -associated DEE: Functional insights and natural history study
5:30	Lidia Carotenuto (Antwerp): The fast-dissociating D2 antagonist antipsychotic JNJ-37822681 is a neuronal K_v7 channel opener: potential repurposing for epilepsy treatment
5:40	Rikke Steensbjerre Møller (Dianalund): From disease-causing variants to targeted therapy in GABA-A receptor related epilepsies
5:50	Francesco Miceli (Naples): <i>In vitro</i> pharmacological characterization of a potent blocker of the epilepsy-associated $K_v7.2$ channel
6:00-6:15	Kris Kahlig (PraxisMedicine, Boston): Relutrigine and Vornatrigine: Functional-State Sodium Channel Modulators Advancing Therapies for Rare and Common Epilepsies
7:30 pm	Dinner Restaurant „Liquid“

Thursday, 25 September 2025	
8:30-9:35 am	Session 6: Advanced techniques and model systems Chair: Ulrike Hedrich & Michael Wenzel
8:30	Simon Musall/Viviana Rincon Montes (Jülich): High-Density Neurophysiology: From Rigid Arrays to Flexible Interfaces
8:55	Karen van Loo (Aachen): Gene modulation in epilepsy: using organotypic brain slice cultures to analyze functional and molecular changes
9:15	Yvonne Weber (Aachen): Drosophila as a model system for genetic epileptic and developmental epilepsies
9:35-1:00	Session 7: Ion channel mechanisms II Chair: Thomas Wuttke & Gabriele Lignani
9:35	Franck Kalume (Seattle): Interneuron-specific dual-AAV <i>SCN1A</i> gene replacement for Dravet syndrome: A preclinical update
9:55	Gaia Colasante (Milan): Enhancing $Na_v1.1$ Translation by Gene Editing to Treat Dravet Syndrome
10:15	Gabriele Lignani (London): Prenatal sodium channel dysfunction in Dravet syndrome alters cortical development
10:35-11:00	Coffee Break
11:00	Snezana Maljevic (Melbourne): Outside the Spotlight: The Unexpected Roles of Ion Channels in Early Brain Development
11:20	JP Gilbert (Xenon, Burnaby): Selective potentiation of $Na_v1.1$ channels by XPC-A in Dravet mice suppresses spontaneous seizures, prevents SUDEP, and increases long term potentiation
11:40	Christoph Fahlke (Jülich)/Daniela Miely (Tübingen): Molecular and cellular basis of episodic ataxia 6
12:00	Alison Obergrussberger (Nanion, Munich): Exploring the role of lysosomal ion channels and transporters in neurodegenerative diseases
12:20	Gaëtan Lesca (Lyon): Involvement of <i>CACNA2D2</i> in developmental and epileptic encephalopathy through disruption of calcium channel functionality and synaptic function
12:40	Evangelos Kiskinis (Chicago): Advanced iPSC models on <i>KCNQ2</i> and <i>KCNH1</i> associated epilepsy
1:00-1:30	Farewell Lunch with free discussions

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