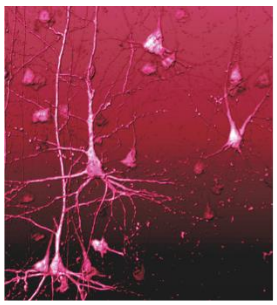

2nd Channelopathy Meeting Tübingen

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

4th-6th October 2023, Tübingen, Germany

Preliminary Program

Wednesday, 4 October 2023	
7:30 pm	Get-Together Schloss Hohentübingen
Thursday, 5 October 2023	
8:30 am	Introduction: Holger Lerche (Tübingen)
8:40-11:40 am	**Session 1: Sodium channelopathies** Chair: Thomas Wuttke & Moran Rubinstein
8:40	Andreas Brunklaus (Glasgow): Emerging phenotypes in sodium channelopathies - the role of functional prediction and therapeutic advances
9:00	Evgeniia Rusina (Nice): A homeostatic response boosted as therapeutic approach in *Scn1a*$^{+/-}$ Dravet syndrome mice
9:20	Nikolas Layer (Tübingen): Early electrophysiological and transcriptomic alterations drive epileptogenesis in Dravet syndrome
9:35	Elena Gardella (Dianalund): *SCN8A*: Clinical complexity and natural history study
9:55	Heinz Beck (Bonn): Targeting aberrant dendritic integration to treat cognitive comorbidities of epilepsy
10:15, virtual	Sanjay Sisodiya (London): Genetic epilepsies: complexities to come - *SCN1A* as an example
10:35-11:05 am	Coffee Break
11:05	Angelika Lampert (Aachen): Precision Therapy in sodium channel related neuropathic pain
11:25	JP Johnson (Xenon, Burnaby): A Selective $Na_V1.1$ Potentiator Enhances Interneuron Excitability to Normalize Motor Performance in a Dravet Syndrome Mouse Model
11:45 am - 1:00 pm	**Session 2: Potassium channelopathies** Chair: Gabriele Lignani & Stephan Lauxmann
11:45	Jennifer Kearney (Chicago): Modeling *KCNB1*-associated developmental and epileptic encephalopathy in mice
12:05	Peter Müller (Tübingen): Transcriptomic insights into epileptogenesis and compensatory changes in a *KCNA2* loss-of-function mouse model
12:20	Konstantin Khodosevich (Copenhagen): Understanding mechanisms of epileptogenesis using single cell omics
12:40, virtual	Ann Poduri (Boston): Modeling potassium channelopathies in zebrafish
1:00-2:00 pm	Lunch Break
2:00-3:50 pm	**Session 3: HCN, calcium and ligand-gated channelopathies** Chair: Dirk Isbrandt & Ulrike Hedrich-Klimosch
2:00	Bina Santoro (New York): Molecule, cell, organism: multi-level analysis of a sick ion channel
2:20	Christopher Reid (Parkville): A small-molecule precision medicine for *HCN1* DEE
2:40	Stephan Marguet (Cologne): HCN/h channel modulation of excitation/inhibition balance in the MEC is crucial for cortico-hippocampal information flow and intrahippocampal dynamics
3:00	Jörg Striessnig (Innsbruck): *CACNA1D* L-type calcium channelopathies in neurodevelopmental disorders: opportunities for drug repurposing

3:20	Philip Ahring (Sydney)/Rikke S. Møller (Dianalund): Pathogenic *GABRA3* variants lead to dominant or recessive X-linked disorders depending on functional outcomes
3:50-5:00 pm	**Poster session (with coffee)**
5:00-7:00	**Session 4: Molecular therapeutic board (case reports: 5-10 min including discussion)** Chair: Holger Lerche & Michael Alber (Tübingen)
	Stephan Lauxmann/Michael Alber
	Robert Lauerer-Braun
	Rikke Steensbjerre Møller
	Further cases from the audience
8:00 pm	**Dinner Restaurant „Liquid“**

Friday, 6 October 2023	
8:30-9:50 am	**Session 5: Gene therapy and human models** Chair: Maria-Patapia Zafeiriou & Niklas Schwarz
8:30	Gabriele Lignani (London): On demand gene therapy for epilepsy
8:50	Moran Rubinstein (Tel Aviv): Viral-mediated expression of Nav1.1 ameliorates Dravet syndrome in mice post seizure onset
9:10	Nael Kasri (Nijmegen): Leveraging spontaneous activity in human stem cell derived neurons to model *SCN1A*-related epilepsies
9:30	Maria-Patapia Zafeiriou/Hendrik Rosewich (Göttingen): Modeling *ATP1A3* related disorders in bioengineered neuronal organoids
10:00	Sarah Weckhuysen (Antwerpen): *KCNQ2*-related epilepsies in iPSC-derived neuronal cultures
10:20	Filip Rosa (Tübingen): *KCNQ2*-DEE stem cell model shows a developmental delay along a prologed culture time up to 6 months
10:35-11.00 am	Coffee Break
11:00-12:30 am	**Session 6: Epigenetics, protein structural modeling & prediction tools** Chair: Rikke Steensbjerre Møller & Christopher Reid
11:00	Katja Kobow (Erlangen): Epigenetics for diagnosis and mechanistic understanding of drug-resistant focal structural epilepsies
11:20	Christian Bosselmann (Cleveland): Predicting the functional effects of ion channel variants: State of the art and future directions
11:40	Tobias Brünger (Cologne): Predicting molecular function and pathogenicity in ion channel disorders
12:00	Giulia Rossetti/Jan-Philipp Machtens (Jülich): Studying functional gating mechanisms in wild-type or mutant Na_V channels/In-silico variant-specific drug screening
12:30-1:30 pm	**Farewell Lunch with free discussions**