

**KARL LANDSTEINER UNIVERSITY  
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## SYMPOSIUM

ION CHANNELS  
IN BRAIN DISEASES:  
CAUSES, MEDIATORS,  
AND DRUG TARGETS

## **Symposium** **Ion Channels in** **Brain Diseases:** **Causes, Mediators,** **and Drug Targets**

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**Date:**  
Thursday, February 27, 2020



**Location:**  
Karl Landsteiner University of  
Health Sciences, Auditorium

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### **SUMMARY**

Fluxes of sodium, potassium, chloride, and calcium ions through channels in cellular membranes cause electrical signals, which regulate brain functions such as learning and memory as well as our interaction with the environment.

Hence, ion channels are critical regulators of important body functions and channel defects can cause many diseases including migraine, cardiac dysfunctions, autism, and hearing deficits. This symposium, which is organized by the PhD program CavX - Calcium channels in excitable cells of the Universities of Innsbruck and supported by the Karl Landsteiner University, combines international experts of the field to provide an overview of the roles of ion channels in health and disease.

The presentations will particularly focus on calcium and potassium channels and present most recent advances in understanding and treating related diseases.

**Univ.-Prof. Gerald Obermair**  
*Division Physiology at the  
Karl Landsteiner University,  
Speaker of the CavX PhD program  
in Innsbruck*

### **PART 1:**

#### **ION CHANNELS AND BRAIN DISEASES – CURRENT STATE OF KNOWLEDGE**

- 15:30-15:35:** **Welcome**  
Gerald Obermair, *Karl Landsteiner University*
- 15:35-15:40:** **Welcome address by the host**  
Rektor Rudolf Mallinger
- 15:40-16:00:** **Ion channels of the brain – a brief introduction**  
Jörg Striessnig, *University of Innsbruck*
- 16:00-16:20:** **Targeting calcium channels in brain diseases**  
Gary Stephens, *University of Reading, UK*
- 16:20-16:40:** **The role of calcium channels in adrenal chromaffin cells**  
Emilio Carbone, *University of Torino, Italy*
- 16:40-17:00:** **Structure-function relationship in calcium channels**  
Bernhard Flucher, *Medical University of Innsbruck*
- Session chairs:** Stefanie Geisler, Nadine Ortner
- 17:00-17:30:** **Coffee break** sponsored by Ecoplus

### **PART 2:**

#### **ION CHANNELS AND BRAIN DISEASES – NOVEL PERSPECTIVES**

- 17:30-17:50:** **Calcium channels and migraine**  
Daniela Pietrobon, *University of Padova, Italy*
- 17:50-18:10:** **Scorpion toxins targeting Kv1.3 potassium channels with therapeutic implications**  
Gyorgy Panyi, *University of Debrecen, Hungary*
- 18:10-18:30:** **The precise interplay of voltage-gated K<sup>+</sup> channels as a prerequisite for sensitive hearing**  
Michael Leitner, *Medical University of Innsbruck*
- Session chair:** Hartwig Seitter