Transient receptor potential (TRP) channels represent an extended and diverse protein family fulfilling salient roles as versatile cellular sensors and effectors. Over the last few years the new concept has emerged that TRP proteins control an exceptionally broad spectrum of homeostatic physiological functions such as maintenance of body temperature, transmitter release from neurons, mineral and trace element homeostasis and reproduction. The vast majority of TRP channel-related human disorders impinge on development, metabolism and other homeostatic functions. The truly remarkable diversity of pathologies caused by TRP channel dysfunction underscores the wide spectrum of roles these proteins play in vivo.

This symposium brings together leading scientists in the field of ion channel research and offers a discussion platform for select aspects of ion channel structure, function and cell regulation with a special focus on the Transient Receptor Potential (TRP) channel family.

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Location:
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Herrsching (near Munich)
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www.sfb-trr152.med.uni-muenchen.de

TRR 152
TRiPs to Homeostasis
Maintenance of Body Homeostasis by
Transient Receptor Potential Channel Modules

INTERNATIONAL SYMPOSIUM

REGULATION OF CELL FUNCTIONS BY TRANSIENT RECEPTOR POTENTIAL CHANNELS

April 13 – April 15, 2026

Organizers: Thomas Gudermann, Ulrich Boehm, Christian Grimm, Arthur Neuberger

Monday – 13th April 2026

03:00 pm **Introduction: Thomas Gudermann**

03:15 pm **Plenary lecture:**
- **Craig Montell**, TRP channels and the control of mosquito disease vectors

Session I **Organellar Ion Channels**

04:00 pm
- **Wang Zheng**, Structural and functional basis of mechanosensitive TMEM63 channelopathies

04:30 pm
- **Thomas Jentsch**, Regulation of endosomal anion transport by novel TMEM9 subunits in health and disease

05:00 pm
- **Jun Suzuki**, A coupling system for asymmetrical distributions of ions and lipids

05:30 pm
- **Hyun-Jin Kim**, Dynamic regulation of TRPML channels during autophagy

06:00 pm
- **Christian Grimm**, Endolysosomal TRPMLs/TPCs: New aspects of their disease relevance

06:30 – 07:30 pm Dinner

08:00 pm **Evening talk:**
- **Vera Moiseenkova-Bell**, Advancing the understanding of TRP channels structure and function through cryoEM and cryoET

Afterwards **Welcome Party**

Tuesday – 14th April 2026

07:30 – 09:00 am Breakfast

09:00 am **Plenary lecture:**
- **Wei Lü**, Temperature Reshapes TRPM4 Pharmacology

Session II **Cell Physiology**

09:45 am
- **Wolfgang Kübler**, TRPV4 as a key regulator of lung endothelial barrier function

10:15 am
- **Sven Erik Jordt**, TRP Channels & Tobacco: Physiology, Toxicology and Insights from Regulatory Science

10:45 – 11:15 am Coffee break

11:15 am
- **Rudi Vennekens**, TRPM Channels in the heart

11:45 am
- **Susanna Zierler**, Targeting the channel-kinase TRPM7 to modulate immunity

12:15 pm
- **Lixia Yue**, TRPM2 in Ischemic Stroke: From Mechanisms to Therapeutic Potential

12:45 – 01:45 pm Lunch
02:00 – 05:00 pm **Social Activities**
05:00 – 06:30 pm **Poster Session**
06:30 – 07:30 pm Dinner

08:00 pm **Evening talk:**
- **Jürgen Wess**, Identification of GPCR signaling pathways critical for regulating glucose and energy homeostasis

Wednesday – 15th April 2026

07:30 – 09:00 am Breakfast

09:00 am **Plenary lecture:**
- **Alexander Sobolevsky**, Structural mechanisms of TRPM7 activation and inhibition

Session III **Sensory and Neuronal Functions**

09:45 am
- **Frank Zufall**, Chemosensation: From ion channels to defense and innate immunity

10:15 am
- **Christoph Schneider**, Visualizing chemosensation in epithelium–immune cell crosstalk

10:45 – 11:15 am Coffee break

11:15 pm
- **Bernd Fakler**, The complexome of ion channels

11:45 am
- **Mike Zhu**, Decoding the sodium and calcium signals of TRPC4

12:15 am
- **Gabriela Krasteva-Christ**, Sensory nerve-tuft cell crosstalk mediates tracheal antimicrobial defense

12:45 – 01:45 pm Lunch

Session IV **Structural and computational biology**

02:00 pm
- **Arthur Neuberger**, Structural pharmacology of TRPV6

02:30 pm
- **Ute Hellmich**, It takes two to tango: lipid-dependent TRP channel regulation in health and disease

03:00 pm
- **Klaus Benndorf**, Activity of different HCN channel isoforms during pacemaker depolarization studied by action-potential clamp at single-channel resolution

03:30 – 05:00 pm Coffee break + **Poster Session**

05:00 pm
- **Christine Ziegler**, Remodeling the TPC2 Selectivity Filter for Ca2+ Permeation by an NAADP mimicking agonist

05:30 pm
- **Thomas Schlichthärle**, AI-guided Protein Design to engineer growth factor mimetics

06:00 pm
- **Daniel Bollschweiler**, Method talk: Strengths and Limitations of in-situ Structural Biology by Cryo-electron Tomography

06:30 – 07:30 pm Dinner

08:00 pm **Evening talk:**
- **Thomas Voets**, Pharmacological targeting of TRPM3 for pain and neurological disorders

Afterwards **Good-bye Party**