Fri 11. October 2019
Time: 11:00 h

Institute of Biochemistry and Molecular Medicine (IBMM)
Seminar Room
Gertrud-Woker-Str. 5,
3012 Bern

Everybody is welcome

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Ardem Patapoutian is Professor at the Howard Hughes Medical Institute, Scripps Research, La Jolla, California (USA)

This lecture is hosted by Prof. Christine Peinelt (IBMM).

NCCR TransCure Lecture in Physiology
by Ardem Patapoutian

Piezo channels in mechano-transduction: sensory biology to disease

Mechanotransduction is perhaps the last sensory modality not understood at the molecular level. Proteins/ion channels that sense mechanical force are postulated to play critical roles in sensing touch/pain (somatosensation), sound (hearing), shear stress (cardiovascular function), etc.; however, the identity of ion channels involved in sensing mechanical force had remained elusive. The Patapoutian lab identified PIEZO1 and PIEZO2, mechanically-activated cation channels that are expressed in many mechanosensitive cell types. Genetic studies established that PIEZO2 is the principal mechanical transducer for touch, proprioception, baroreception and lung stretch, and that PIEZO1 mediates blood-flow sensing, which impacts vascular development. Clinical investigations have confirmed the importance of these channels in human physiology. Most recently, Patapoutian lab identified a GPCR (GPR68) that senses shear stress and is essential for controlling flow-mediated dilation of blood vessels. The lab continues to analyze the physiological relevance of these receptors in and is searching for novel mechanosensors.

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