



Introductory Remarks to Symposium 28

Modulatory circuits of central pain processing

Valery Grinevich and Alexander Groh, Heidelberg

When pain becomes chronic, a necessary if unpleasant sensation becomes a debilitating disorder. While nociception originates in the periphery, the experience of pain including pathological pain is generated by neuronal interactions in the brain. But what are the manifestations of pathological pain in the brain and which mechanisms modulate central pain processing? The goal of this symposium is to discuss the structural and functional changes of cells and networks in the brain that lead to the perception of pain and to address neuromodulatory mechanisms that potentially counteract or enhance pain sensation. Markus Ploner will speak about how neuronal oscillations and synchrony subserve the experience of pain and the implications of these findings for the diagnosis and therapy of chronic pain. Alexandre Charlet will then emphasize the involvement in pain regulation by oxytocin, especially through its action on a novel cellular target, astrocytes, within the amygdala microcircuits. Alexander Groh will present data on how thalamic neurons encode painful stimuli and how thalamic pain transduction is modulated by cortical “top-down” pathways in mouse models of acute and chronic pain. Valery Grinevich will demonstrate that both nociceptive and non-nociceptive somatosensory stimuli increase synchronous electrical activity of oxytocin neurons, leading to central and peripheral oxytocin release. The symposium promises to provide latest insights about pain processing and modulation in the brain of humans and animal models.

Symposium 28

Friday, March 22, 2018
14:30 - 16:30, Lecture Hall 104

Chairs: Valery Grinevich and Alexander Groh,
Heidelberg

- 14:30 **Opening Remarks**
- 14:40 Alexandre Charlet, Strasbourg, France
OXYTOCIN ACTS ON ASTROCYTES IN
THE CENTRAL AMYGDALA TO PROMOTE
COMFORT (S28-1)
- 15:00 Markus Ploner, Munich
BRAIN RHYTHMS OF PAIN
(S28-2)
- 15:20 Valery Grinevich, Heidelberg
SOMATOSENSORY MODULATION OF
OXYTOCIN NEURONS DRIVES SOCIAL COM-
MUNICATION (S28-3)
- 15:40 Alexander Groh, Heidelberg
CORTICAL CONTROL OF THALAMIC PAIN
PROCESSING (S28-4)
- 16:00 Carla Norwig, Würzburg
EXPRESSION PROFILE OF TIGHT JUNCTION
PROTEINS IN A MODEL OF DIABETIC NEURO-
PATHY (S28-5)
- 16:10 Livia Asan, Heidelberg
THE CELLULAR BASIS OF VOLUMETRIC BRAIN
CHANGES DURING CHRONIC PAIN –
A NOVEL APPROACH TO CORRELATE VOXEL-
BASED MORPHOMETRY WITH *IN VIVO*
MICROSCOPY (S28-6)
- 16:20 **Concluding Remarks**