Introductory Remarks to Symposium 36

Beyond expression of fear: mechanisms and circuits of the extended amygdala

Maren Lange and Thomas Seidenbecher, Münster

Fear and anxiety are behavioral protective responses to prevent or avoid threatening situations. However, if fear- and anxiety-like responses exceed a rational measure, they may turn out to be disadvantageous for an individual, and might possibly develop an anxiety disorder. Since anxiety disorders are a very common psychiatric disease with a lifetime prevalence of about 20% it is of critical importance to identify the underlying molecular and neuronal mechanisms to develop possible therapeutic strategies. Despite the fact, that the last decade of research put a lot of effort in the identification of brain circuits mediating fear responses to discrete threats, mechanisms shifting fear to anxiety are still elusive. Modifications of classical Pavlovian fear conditioning paradigms enable now to distinguish such states as short-lasting (phasic) and long-lasting (sustained) fear in response to predictable and unpredictable threats, respectively and thereby provide important entries for experimental anxiety studies. Hence, available rodent data suggest that phasic fear rely on the central amygdala, whereas more sustained fear responses critically depend on the bed nucleus of the stria terminalis (BNST), brain regions of the so-called extended amygdala.

This symposium focuses on molecular and neuronal mechanisms in circuits of the extended amygdala underlying expression of sustained fear. Sustained fear paradigms in rodents have been developed to model clinical situations in patients suffering from long-lasting anxiety disorders. Interdisciplinary approaches combining molecular and optogenetical techniques, cellular imaging and new behavioral paradigms are used to investigate links between neuronal activity and fear-related behavioral expressions with focus on long-lasting fear processes. However, physiological and pathophysiological relevance of the extended amygdala contribution in mechanisms of sustained fear is unclear.

This symposium highlights outstanding approaches in fear-related neuronal mechanisms and circuits to expand our knowledge of basic principles in fear behavior processing, which is relevant for understanding fear, anxiety and human anxiety disorders.

Symposium 36

Saturday, March 23, 2019
8:30 -10:30, Lecture Hall 105

Chairs: Maren Lange and Thomas Seidenbecher, Münster

08:30 **Opening Remarks**

08:40 Laura Luyten, Leuven, Belgium
TARGETING THE BED NUCLEUS OF THE STRIA TERMINALIS TO REDUCE ANXIETY IN RATS AND PATIENTS (S36-1)

09:00 Stephen Maren, College Station, USA
THE WAY FORWARD IS BACKWARD: BNST MEDIATES FEAR TO AMBIGUOUS THREATS (S36-2)

09:20 Maren Lange, Münster
ENDOCANNABINOIDS IMPACT ON RESPONSES TO PREDICTABLE AND UNPREDICTABLE THREAT VIA CRH NEURONS (S36-3)

09:40 Ki Ann Goosens, Cambridge, USA
MECHANISMS UNDERLYING STRESS-ENHANCED FEAR (S36-4)

10:00 Julia Winter, Regensburg
THE TRANSCRIPTION FACTOR MEF-2A MEDIATES THE ANXIOGENIC EFFECT OF CHRONIC OXYTOCIN (S36-5)

10:10 Roman Kessler, Marburg
THE WATCHDOG WON'T STOP BARKING! TOP-DOWN CONTROL OF THE AMYGDALA BY MEDIAL PREFRONTAL CORTEX IN MAJOR DEPRESSION: THE ROLE OF MEDICATION, GENETIC LIABILITY AND CHILDHOOD MALTREATMENT (S36-6)

10:20 **Concluding Remarks**