madridge CONFERENCES
International Neurology Conference
December 3-4, 2018 Valencia, Spain

Cortical Plasticity as Cellular Models for Chronic Pain and Anxiety

Min Zhuo
University of Toronto, Canada
Xian Jiaotong University, China

The anterior cingulate cortex (ACC) and insular cortex (IC) are activated in pain conditions. In this talk, I will discuss evidence from rodent studies that ACC/IC activation contributes to chronic pain states and describe several forms of synaptic plasticity that may underlie this effect. In particular, one form of long-term potentiation (LTP), which is triggered by the activation of NMDA receptors and expressed by an increase in AMPA-receptor function, sustains the affective component of the pain state. Another form of LTP, which is triggered by the activation of kainate receptors and expressed by an increase in glutamate release, may contribute to pain-related anxiety. Finally, I will discuss recent translational progress made in leading novel AC1 inhibitor for the treatment of chronic pain and anxiety.

Biography:

Dr. Zhuo is a full Professor of Physiology, University of Toronto. He is the Michael Smith Chair in Neuroscience and Mental Health, and the Canada Research Chair Tier I in Pain and Cognition. He has published more than 300 articles in professional journals such as *Nature*, *Science*, *Nature Neuroscience*, *Neuron, Nature communications* and *Science Translational medicine*. His H-factor is 68. He is the founding editor and editor-in-chief for the online journal of *Molecular Pain* and *Molecular Brain*. He is a Fellow of Royal Society of Canada and the director of the Center for Neuron and Brain Disease in Xian, China.