



International Neurology Conference

December 3-4, 2018 Valencia, Spain

Excitatory Interneuron's in the Superficial Dorsal Horn of the Mouse

Maria Gutierrez-Mecinas* and Andrew J Todd
University of Glasgow, UK

It has been estimated that almost 8 million people in the UK live with chronic pain and from those only about two thirds respond positively to current analgesic treatments. Chronic pain, therefore, represents a major unmet clinical need. A major reason for the lack of effective treatments for this disease is the limited knowledge and understanding of the neuronal circuitry regulating pain transmission at the spinal cord level, and one thing we should seriously consider is that revealing and understanding the complexity of neuronal populations and the diversity of receptors and signalling mechanisms in this region should provide numerous targets for the development of new drugs that can alleviate pain more effectively. This can be done by identifying and characterizing specific neuronal populations that might be responsible for transmitting and processing noxious stimuli.

We are currently using different neurochemical markers to identify distinct populations of interneurons, the largest neuronal group within the superficial dorsal horn. We have identify four non-overlapping populations of excitatory interneurons and we have confirmed that at least, two of those, are completely separate, differing in anatomical, electrophysiological and pharmacological properties.

Our results have been mostly confirmed by recent research done using transcriptomics, supporting the neurochemical approach to detect individual populations of interneurons. Each of this population can be individually targeted and their function altered in ready available genetically modified mice to fully understand their role in the neuronal circuit processing pain.