

International Conference & B2B on

Pharma Research and Development

June 06-07, 2018 | Philadelphia, USA

Localization of connexin 36 and calcitonin gene related peptide as a determinant of neuropathic pain in the trigeminal ganglion

P K Sankaran, R Gunapriya, M Kumaresan and G Karthikeyan
Saveetha Medical College and Hospital, India

Purpose: The trigeminal ganglion consists of pseudounipolar neurons surrounded by satellite glial cells and processes innervating craniofacial region. The gap junctions are transmembrane proteins formed between the cell membranes of adjacent cells and calcitonin gene related peptide are neuropeptides secreted by sensory neurons.

Materials & Methods: In present study, the immunohistochemical localization for connexin 36 gap junctions and CGRP was done in the trigeminal ganglion of male wistar rats. Localization was done in six rats in each group after standardization of dilution ratio for each antibody.

Result: The result showed connexin 36 was present between the satellite glial cells and between satellite glial cell and neuron (Fig 2). The localization was also found in the Schwann cells surrounding axon. CGRP was localized densely in the cytoplasm of small neurons. The large neurons showed fine less densely stained localization in the cytoplasm (Fig 1).

Discussion: The excited neuron can influence the surrounding satellite glial cells and neurons through gap junctions and by paracrine actions altering its environment leading to pathological role in inducing painful conditions like migraine.

daria.kim@ip.mpg.de

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