211 Poster
Sunday
Stuart 7

PEPTIDES IN C AND Aδ FIBRES OF IDENTIFIED MODALITY. J. Leah, A. Cameron, and P. Snow, Department of Anatomy, Queensland University, St. Lucia, 4067, Australia.

Aim of Investigation: Four peptides, substance P (SP), somatostatin (SS), cholesystokinin (CCK) and vasoactive intestinal polypeptide (VIP) have been found to occur, and to some extent coexist, in small sensory gangion neurones in the cat. These cells have cutaneous (and other) receptors responding to noxious mechanical, heat, cold, and combinations of these modalities, and to non-noxious stimuli. This study examines the relationship between a neurone's peptide content and its receptor modality.

Method: In S1 ganglion exposed to colchicine for 24 hours intracellular recordings were made from C and Aδ cells. Once the cutaneous receptive modality had been established the cell was injected with lucifer yellow, the ganglia fixed, sectioned and the PAP technique used to identify the cell's peptide content.

Results: SP and CCK have been located in both noxious and non-noxious receptive cells. SS has not been observed in non-noxious receptive cells and VIP has not been observed in noxious receptive cells. All peptides occurred in both cells with cutaneous and with non-cutaneous receptors but SP occurred with highest incidence in the latter.

Conclusions: It is unlikely that any simple relation exists between peptide content and a cell's receptor modality.

212 Poster
Sunday
Stuart 8

IMMUNOHISTOCHEMICAL LOCALIZATION OF ADENOSINE DEAMINASE (ADA) IN PRIMARY AFFERENT NEURONS OF THE RAT. J.I. Nagy[1], L. LaBella[1*], M. Buss[1*], and P.E. Daddona[2*], [1]Dept. of Physiology, Univ. of Manitoba, Winnipeg, Man., R3E OW3, Canada, [2]Dept. of Internal Medicine, Univ. of Michigan Medical School, Ann Arbor, MI, 48109, USA

Aim of Investigation: The localization of high levels of enzymes involved in purine metabolism in the nervous system could indicate a neuroregulatory role of purines distinct from their ubiquitous function in intracellular metabolism. In the present study, immunohistochemical localization of ADA - the enzyme responsible for conversion of adenosine to inosine - has been pursued in order to examine the possible relationship between ADA activity and putative purinergic transmission in dorsal root ganglia neurons of the rat.

Methods: Animals were perfused and spinal sensory ganglia removed for immunohistochemical investigation of ADA using standard techniques. The PAP method was employed in the final antibody step, immunostaining consisting of DAB reaction product.

Results: Small type B cells of cervical, thoracic and lumbar sensory ganglia exhibited ADA-immunoreactivity. However, not all small B cells contained detectable levels of ADA and no large type A neurons were ADA-positive.

Conclusions: Confinement of high levels of ADA to a subpopulation of type B cells may be indicative of purinergic transmission and may further reflect purinergic characteristics of these neurons.