

Calcitonin gene-related peptide immunoreactivity in the nucleus of the tractus solitarius and the carotid receptors of the cat originates from peripheral afferents

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Abstract

The presence and distribution of the calcitonin gene-related peptide was studied, using immunohistochemical techniques, in carotid receptors, in the nodose and glossopharyngeal ganglia and in the nucleus tractus solitarii of the cat. Seventy-seven per cent of the petrosal and 42% of the nodose ganglion cells were labeled. Fine, sparsely branched immunoreactive terminal axonal arborizations were found in the carotid body; they disappeared after petrosal ganglionectomy. The intense immunoreactivity present in fibers in the commissural, medial, interstitial, gelatinosus, dorsal, intermediate and rostral gustatory subnuclei of the nucleus tractus solitarius was drastically reduced after removal of the ipsilateral nodose and petrosal ganglia.

The central distribution of the immunoreactive axons, the morphology of the terminals in the carotid receptors and their dependence on an intact peripheral innervation are consistent with the idea that in the cat the calcitonin gene-related peptide is present in a high proportion of the primary visceral afferents, most of them unmyelinated.