

Cytoarchitecture of the Spinal Trigeminal Nucleus in Rats

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The spinal trigeminal nucleus (SpV) is one of the three nuclei in the trigeminal sensory nuclear complex which extends over the whole length of the brainstem. The SpV travels adjacent to the spinal trigeminal tract and is responsible for relaying various sensory modalities including temperature, deep or crude touch, and pain from the ipsilateral portion of the face. It is continuous with the substantia gelatinosa, while the tract is continuous with Lissauer's tract. The purpose of the study is to scrutinize the structure and cytoarchitecture of this nucleus in the rat. The SpV is the largest trigeminal nucleus and is found in the lateral tegmentum of the medulla and caudal pons. Spinal trigeminal neurons are composed of soma with sporadic Nissl bodies surrounded by a network of myelinated axons. Our results show that its three structural divisions, i.e. the oral, interpolar, and caudal subnuclei, share a common neuronal organization though they are associated with the transmission of different kind of sensory information from the orofacial region.

Key words: spinal trigeminal nucleus, hematoxylin staining, neutral red staining, toluidine blue