

Histochemical Localization of NADPH-Diaphorase Reactive Neurons in the Colorectal Region of the Rat

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The presence and distribution of nitrergic structures have been examined by means of NADPH-d histochemistry in the myenteric plexus, applied to the four main divisions of the rat large intestine. We first identified the exact location of the myenteric ganglia, the distribution of their internodal strands and fiber bundles in the adjacent muscle layers. Many NADPH-d-positive neurons were registered in the myenteric ganglia of all the examined segments and their morphology was categorized as Dogiel-type-1. Only single reactive fibers were found penetrating the longitudinal muscle, whereas in the circular muscle layer the varicose nerve fibers formed prominent bundles, running between the myocytes. We also observed an obvious predominance in the reaction intensity of NADPH-d-positive nerve structures in the recto-anal region, compared to the more proximal gut segments. In conclusion, our results provide histochemical evidence for the presence of nitrergic neurons in the rat colorectal region.

Key words: enteric neurons, myenteric plexus, nitrergic structures, NANC transmission, NADPH-diaphorase