

Detection of Nitric Oxide Synthase (NOS) in Somatostatin-producing Cells of Human and Murine Stomach and Pancreas¹

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Abstract of:

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The aim of this study was to identify by immunocytochemistry the distribution of nitric oxide synthase (NOS) in human and murine gastric epithelium. Using two different antisera specific for neuronal NOS (nNOS), we detected nNOS immunoreactivity in endocrine cells of the epithelium of the body and pyloric regions as well as in ganglion cells of the intrinsic plexi of the stomach of the three species studied. Both immunocytochemistry of contiguous sections and double immunolabeling methods showed that the nNOS-immunoreactive cells were also immunoreactive for somatostatin. Colocalization of nNOS and somatostatin has also been found in the pancreatic is-

lets, where strong nNOS immunoreactivity appeared in scattered cells, which were peripheral in rat and mouse islets and more randomly distributed in human. The possibility of crossreactivity between the antisera against nNOS and somatostatin was ruled out by means of absorption controls. Immunocytochemical techniques were also applied to thin sections, confirming the immunostaining of gastric D-cells, which was restricted principally to the secretory granules. The possible functional implications of these findings for gastric and pancreatic physiology are discussed. (*J. Histochem Cytochem* 44:339-346, 1996)

Key words

Nitric oxide synthase; Somatostatin; Endocrine cells; Stomach; Pancreas; Immunocytochemistry; Ultrastructure; Human, Rat; Mouse.

Immunocytochemical localization of a vacuolar-type ATPase in Malpighian tubules of the ant *Formica polyctena*

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Abstract. The presence of a vacuolar-type ATPase in Malpighian tubules of the ant *Formica polyctena* was investigated immunocytochemically, using antibodies to vacuolar ATPases of *Manduca sexta* midgut and bovine kidney. Specific labelling was observed at the

brush border of the epithelium, extending along the entire length of the tubules. These findings agree with the current view that a vacuolar ATPase is situated at the apical membrane of Malpighian tubule cells and other insect epithelial cells, being the energizing element of an electrogenic potassium pump. When antibodies were tested on tubules in different secretion conditions prior to fixation, no differences were observed in the distribution of the vacuolar ATPase.