

Publication

A comparative study of neuropeptides in the intestine of two stomachless teleosts (*Poecilia reticulata*, *Leuciscus idus melanotus*) under conditions of feeding and starvation

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Endocrine cells containing bombesin-, enkephalin-, gastrin/CCK-, 5-HT-, and substance P-like material were demonstrated in the alimentary tract of *Poecilia reticulata* and *Leuciscus idus melanotus*. Endocrine cells with neuropeptide-Y-like immunoreactivity were found only in *P. reticulata*, those with VIP-like immunoreactivity only in *L. idus melanotus*. Gut nerves showing bombesin-, G/CCK-5-HT-, neurotensin-, substance P- and VIP-like immunoreactivity were observed in both species investigated, enkephalin- and neuropeptide Y-like immunoreactivity in *P. reticulata* alone. The distribution and amount of endocrine cells and nerves along the gut as visualized with the appropriate antisera varied in both teleosts. Histologically, the intestinal tract of these stomachless fish can be divided into three regions. A large number of endocrine cells with VIP-like immunoreactivity was noted in the rectum of *L. idus melanotus*. Endocrine cells containing bombesin-, enkephalin- and substance P-like material were found only in intestinal parts I and II in *L. idus melanotus*. Neuropeptide Y-like immunoreactivity was absent from intestinal part I of *P. reticulata*. The influence of starvation on the immunoreactivity of nerves and enteroendocrine cells in the teleost intestine was examined. After a starvation period of more than 6 weeks, no alterations were observed either in the appearance or amount of nerve and endocrine cell immunoreactivity.

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