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Title	POTENTIATION OF CCK-OP-INDUCED EXOCRINE SECRETION BY EITHER ELECTRICAL STIMULATION OF THE VAGUS NERVE OR EXOGENOUS VIP ADMINISTRATION IN THE GUINEA PIG PANCREAS
Author(s)	MATSUMOTO, Takehisa
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POTENTIATION OF CCK-OP-INDUCED EXOCRINE SECRETION
BY EITHER ELECTRICAL STIMULATION OF THE VAGUS NERVE
OR EXOGENOUS VIP ADMINISTRATION IN THE GUINEA PIG PANCREAS.

Takehisa MATSUMOTO

*Department of Physiology
Faculty of Veterinary Medicine
Hokkaido University, Sapporo 060, Japan*

Vasoactive intestinal peptide (VIP)-induced exocrine secretion was observed in the anaesthetized guinea pig pancreas and in the isolated perfused pancreas of guinea pig. In the anaesthetized guinea pig, the secretory responses (pancreatic juice flow and protein output) induced by efferent electrical stimulation of the left vagus nerve were blocked by hexamethonium but not by atropine. The secretory responses induced by intravenous administration of the C-terminal octapeptide of cholecystokinin (CCK-OP) in the anaesthetized guinea pig were significantly potentiated when the left vagus nerve was stimulated electrically.

In the isolated perfused pancreas, the secretory responses induced by CCK-OP at concentrations in the physiological range (10 pM) were markedly potentiated by simultaneous stimulation with 100 pM VIP. However, the secretory responses induced by CCK-OP at higher concentrations (30pM, 100pM) were not potentiated but inhibited by simultaneous stimulation of 100 pM VIP. The secretory responses induced by carbachol at any concentrations used were not altered by simultaneous stimulation of 100 pM VIP.

Taking the present results and the morphological studies in the other laboratories into account, the following view was proposed: In the guinea pig pancreas, VIP released from the terminals of postganglionic neurons of the vagus nerve can potentiate the secretory responses to CCK-OP but not those to ACh; the major chemical transmitter of the vagus nerve.