

# The vagal monitoring system for gastrointestinal hormones : the role of the gastric vagal somatostatin reception in enterogastrone effect

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# 1999 Fiscal Year Final Research Report Summary

## The vagal monitoring system for gastrointestinal hormones : the role of the gastric vagal somatostatin reception in enterogastrone effect

Research Project

### Project/Area Number

10670460

### Research Category

Grant-in-Aid for Scientific Research (C)

### Allocation Type

Single-year Grants

### Section

一般

### Research Field

Gastroenterology

### Research Institution

Kanazawa University

### Principal Investigator

**NAKABAYASHI Hajime** Kanazawa University, Health Service Center, Professor, 保健管理センター, 教授 (20019988)

### Co-Investigator(Kenkyū-buntansha)

NAKAGAWA Atsushi Kanazawa Medical University, Internal Medicine, Assist. Professor, 内分泌内科, 講師 (70262574)

### Project Period (FY)

1998 – 1999

### Keywords

Vagal Nerve / Stomach / Somatostatin / Neurochemoreception / 肝迷走神経機構

### Research Abstract

Recently we have found histologically the neural system associated with the fundic vein of the stomach, a somatostatin secreting organ, contains somatostatin receptor. To determine if the gastric vagus is receptive to gastric somatostatin release, the gastric vagal afferent activity was measured upon a subserosal injection of somatostatin at a local physiological concentration (100 ~ 1000 pg/ml) in rats anesthetized with urethan and chloralose. The fundic, but not antral, somatostatin injection facilitated significantly the gastric afferents, and further led to significant suppression of the gastric efferents. The suppression of the dorsal (or ventral) efferents disappeared in the ventral (or dorsal) vagotomized rat. Furthermore, the facilitation of the afferents became far more prominent in hepatic vagotomized rats, accompanying the nonsuppressible efferents. The results indicate that somatostatin released from the fundic stomach is neurochemoreceptively monitored by the gastric vagus, resulting

probably in uique enterogastrone effect mediated by the somatostatin-induced gastric vagovagal reflex. The observation also suggests a link between the gastric monitoring system and the hepatic vagal innervation, leaving a large part of the neural pathways unknown.

## Research Products (4 results)

		All	Other
		All	Publications
[Publications]	Nakabayashi, H.: "Neural monitoring system for circulating somatastatin in the hepatoportal area"Nutrition. 13. 225-229 (1997)		▼
[Publications]	Nishizawa, M.et al.: "The hepatic vagal reception of intraportal GLP-1 is via receptor different from the pancreatic GLP-1 receptor"J.Auton Nerv Syst. 80. 14-21 (2000)		▼
[Publications]	Nakabayashi H.: "Neural monitoring system for circulating somatostatin in the hepatoportal area."Nutrition. 13. 225-229 (1997)		▼
[Publications]	Nishizawa M, Nakabayashi H, Kawai K, Ito T, Kawakami S, Nakagawa A, Nijjima A, Uchida K: "The hepatic vagal reception of intraportal GLP-1 is via receptor different from the pancreatic GLP-1 receptor."J Auton Nerv Syst. 80. 14-21 (2000)		▼

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