

The neural mechanisms in establishing the enteroinsular axis : an involvement of neurochemoreception for intragastric glucose

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2004 Fiscal Year Final Research Report Summary

The neural mechanisms in establishing the enteroinsular axis : an involvement of neurochemoreception for intragastric glucose

Research Project

Project/Area Number

15590630

Research Category

Grant-in-Aid for Scientific Research (C)

Allocation Type

Single-year Grants

Section

一般

Research Field

Gastroenterology

Research Institution

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2003 - 2004

Keywords

Nutrient / Intragastric Lumen / Neurochemoreception / Vagal Nerve / Glucose / Enteroinsular Axis

Research Abstract

The enteroinsular axis is known to enhance insulin secretion upon food ingestion. The insulin secretion has been postulated to consist of cephalic and intestinal phases. We have, however, reported that an instillation of glucose into the stomach which is ligated at the pylorus and fundus induces an insulin secretion related to glucose levels in the gastric vein, indicating a gastro-pancreatic link through the vagal nervous system in dogs. In the present study, to elucidate the link, we further examined whether the presence of glucose in the gastric vein or in the gastric lumen causes signals in the gastric vagal afferent system in rats anesthetized with urethane and chloralose. The afferent activity (the impulse discharge rate) in the filaments of the ventral or dorsal branch of the gastric vagus decreased in a dose-dependent fashion, when 1.0, 2.5 or 5.0% glucose (G) solution (200 microL) was injected into the subserosal space of the greater curvature. The decreases to each of the G s ... More

Research Products (2 results)

All 2004

All Journal Article

[Journal Article] Receptor gene expression of glucagon-like peptide-1, but not GIP, in rat nodose ganglion cell

2004 ▾

[Journal Article] Receptor gene expression of glucose-like peptide-1, but not GIP, in rat no dose ganglion cell

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