Gut Regulatory Peptides: Their Role in Health and Disease

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E. Blzquez, Salamanca

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Cover illustration
Portrait of duodenal mucosa after fixation in isopentane at -140 C in liquid nitrogen and later lyophilization according to binocular microscope view showing abundant v11. Insert transverse section of a duodenal villus in which a cell containing vasopressin-like immunoreactive substance can be seen. P.A.P. technique.
The photos are a kind gift from Professor L. Munoz Barragn, Salamanca, Spain.

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Drug Dosage
The authors and the publisher have exerted every effort to ensure that drug selection and dosage set forth in this text are in accord with current recommendations and practice at the time of publication. However, in view of ongoing research, changes in government regulations, and the constant flow of information relating to drug therapy and drug reactions, the reader is urged to check the package insert for each drug for any change in indications and dosage and for added warnings and precautions. This is particularly important when the recommended agent is a new and/or infrequently employed drug.

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Contents

Foreword . . . . . . . . . VII
Creutzfeldt, W. (Gottingen): The Changing Concept of the Enteroinsular Axis . . . . . . . . . 1

Morphofunctional Aspects of Gut Cells Producing Regulatory Peptides

Holst, J.J. (Copenhagen): Peptidergic Innervation of the Langerhans' Organ . . . . . . . . . 15
Junquera, C.; Azanza, M.J.; Parra, P.; Aisa, J.; Peg, M.T.; Garin, P. (Zaragoza): Peptidergic Innervation in Amphibian Stomach . . . . . . . . . 21
Aisa, J.; Azanza, M.J.; Junquera, C.; Peg, M.T.; Garin, P. (Zaragoza): Intrinsic Innervation in Birds Anterior Gut . . . . . . . . . 30
Vasallo, J.L.; Blzquez, J.L.; Snchez Franco, F.; Lpez Gil, A.; Toranzo, D.; Pastor, F.E.; Muoz Barragn, L. (Salamanca): Immunocytochemical Study on the Presence of a Vasopressin-Like Immunoreactive Substance in the Mammalian Gut . . . . . . . . . 43

Relevance of Peptide Receptors Present in Gut Epithelium.
Physiological Effects
Rosselin, G. (Paris): Physiological Relevance of Receptor Characterization in the Study of the Enteroinsular Axis . . . . . . . . . 51
Fernández-Moreno, M.D.; Serrano-Ríos, M.; Prieto, J.C. (Madrid): Characterization of Specific Insulin Receptors along the Rat Small and Large Intestinal Epithelial Tract . . . . . . . . . 83
Portha, B. (Paris): Growth Pattern of Pancreatic B Cells. Role of Nutrients and Regulatory Peptides . . . . . . . . . 102
Simón, M.A.; Calle, C. (Madrid): Lipolytic Effect of Somatostatin in Rat Adipose Tissue: An in vivo and in vitro Study . . . . . . . . . 111

Glucagon and Related Peptides

Ghiglione, M.; Uttenthal, L.O.; George, S.K.; Bloom, S.R. (London): Intestinal Glucagon-Like Peptides in Man and Pig . . . . . . . . . 121

Contents VI

Mu Doz Barragn, L.; Blázquez, E. (Salamanca): Effect of Nutrients and Gut Peptides on Gastric Glucagon Release by Normal and Diabetic Dogs . . . . . . . . . 145

Role of GIP in Health and Disease

Brown, J.C. (Vancouver): Role of Gastric Inhibitory Polypeptide in Regulation of Insulin Release . . . . . . . . . 157
Krarup, T.; Holst, J.J.; Lindorff Larsen, K.; Madsbad, S. (Hillerød): Heterogeneity of IR-GIP in Normal Subjects and Insulin-Dependent Diabetics . . . . . . . . . 167
Ebert, R.; Creutzfeldt, W. (Gottingen): Metabolic Effects of Gastric Inhibitory Polypeptide . . . . . . . . . 175
Nauck, M.; Stockmann, F.; Schmidt, W.; Ebert, R.; Creutzfeldt, W. (Gottingen): Incretin Effect in Normal and Type 2 Diabetic Subjects and Its Relation to the GIP Response . . . . . . . . . 186

The Entero-Insular Axis and Disease
Although the start of the century saw the identification of gastrointestinal hormones, their existence was only confirmed 50 years later. The great development in this field has not only brought to light a large variety of them, but has also highlighted the diversity of their functions in that they are known to regulate gastrointestinal functions, influencing secretion, absorption, motility and blood flow processes. Apart from endocrine properties, some of these hormones also act as neurotransmitters and neuromodulators, while still others have paracrine effects. Additionally, some gastrointestinal hormones have been found in unforeseen locations, and peptides of neural origin have been found in pancreatic and gastrointestinal endocrine cells. There is thus justification for considering them as regulatory peptides rather than simply hormones.

Previously, relationships were thought to exist between the gut and the endocrine pancreas. The term, enteroinsular axis, was proposed by Unger 18 years ago and then referred to the humoral relationships between the gut and endocrine pancreas and was applied particularly to the hormonal enteroinsular potentiation of insulin secretion in response to the absorption of glucose. To designate the involvement of gut peptides in such a system the term, incretin, has been coined and a number of peptides with incretin activity have been proposed. Today, however, it is accepted that enteroinsular activity may affect other pancreatic hormones and that this occurs not only through humoral routes but also through nervous, neurohormonal and paracrine mechanisms.

In light of recent findings, it was felt necessary to compile a series of contributions to further consolidate the mass of general and specific information existing in the field and which would deal with many of the
morphofunctional, biochemical and clinical approaches to gut peptides. This volume, comprising overviews and original articles, specially emphasizes the morphofunctional aspects of gut cells producing regulatory peptides and peptide receptors in the gut epithelium. Special chapters address glucagon and related peptides and the role of GIP and the enteroinsular axis in health and disease.

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Salamanca, September 1986 Enrique Blizquez