

PREFACE

Thirteen years have passed since the discovery of ghrelin. During these years, many research have been done to elucidate the physiological functions of ghrelin, not only a mere growth hormone-releasing hormone but also an important appetite regulator, energy conservator, and sympathetic nerve suppressor. At present, ghrelin is the only circulating orexigenic hormone that is secreted from the peripheral organ and acts on the hypothalamic arcuate nucleus, the regulatory region of appetite.

Although the discovery of ghrelin is dated back to 1999, it has a long history since 1950s when Dr. Davis reported the gastric cells similar to the pancreatic alpha cells. These A-like cells turned out to be ghrelin cells. The first GHS (growth hormone secretagogue), a synthetic ghrelin mimetic, was discovered in 1976 by Dr. Bowers and led to the identification of the GHS receptor, which was the key strategic molecule for the discovery of ghrelin. Among the authors in this volume, we sincerely thank Dr. Bowers because he is the father of ghrelin and contributes the history before ghrelin discovery.

This volume provides descriptions of several aspects of ghrelin, from its structure to clinical applications. Authors were selected based on the research contributions on ghrelin and encouraged to open their protocols and guides in a clear and reproducible way to make it possible to adapt the methods to other peptide hormones.

Last, let us express our personal pleasure. We are very happy and honored to edit this volume of the *Methods in Enzymology*. We, of course, referred the several volumes of *Methods in Enzymology* in our research on peptides.

MASAYASU KOJIMA

KENJI KANGAWA

Volume X: Oxidation and Phosphorylation

Edited by RONALD W. ESTABROOK and MAYNARD E. PERL

Volume XI: Enzyme Structure

Edited by C. H. W. HONG

Volume XII: Nucleic Acids (Part A and B)

Edited by LAWRENCE GRONLUND and KIM MORTENSEN

Volume XIII: Citric Acid Cycle

Edited by J. M. LOWENSTEIN

Volume XIV: Lipids

Edited by J. M. LOWENSTEIN