hormonal proteins and peptides

HYPOTHALAMIC HORMONES

EDITED BY **CHOH HAO LI**

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VOLUME VII

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Editor CHOH HAO LI

The Hormone Research Laboratory
University of California
San Francisco, California

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Vol II 1973
Vol III 1975
Vol IV Growth Hormone and Related Proteins 1977
Vol V Lipotropin and Related Peptides 1977
Vol VI Thyroid Hormones 1978
Vol VII Hypothalamic Hormones 1979

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Preface

Studies of the midbrain of fishes during the period of 1928 to 1932 led E. Scharrer to the concept of neurosecretion. This was followed by the discovery that neurohypophysial hormones are produced in the cell bodies of the supraoptic and paraventricular nuclei of the hypothalamus and transported to the posterior pituitary for storage and secretion. Hence, the hypothalamus may be considered to be an endocrine gland like the hypophysis.

In 1937, G. W. Harris induced ovulation in the rabbit by electrical stimulation of the hypothalamohypophyseal mechanism. Later work of Harris and others demonstrated that the hypothalamus regulates the secretion of anterior pituitary hormones. The final proof of the hypothalamoshypophyseal systems came from the isolation and synthesis of thyrotropin releasing hormone by A. V. Schally and others in 1969.

This volume opens with a critical and detailed review by Schally and his collaborators on basic and clinical studies of corticotropin releasing factor (CRF), thyrotropin releasing hormone (TRH), prolactin releasing factor, prolactin-release inhibiting factor, factors affecting the release of melanotropin, luteinizing hormone release hormone (LHRH), growth hormone release factor, and somatostatin. This is followed by a chapter by Jutisz *et al.* on LHRH. In the early 1960s, Jutisz was among the first to obtain highly purified TRH from ovine hypothalamus. In his chapter, Jutisz offers a comprehensive discussion of various aspects of LHRH.

In Volume IV of this series, Clements and Meites discussed the control of prolactin secretion. In this volume, Müller reviews various factors that control the secretion of growth hormone, with particular emphasis on brain neurotransmitters. A review of the mechanism of action of hypothalamic hormones is presented by Labrie and co-workers. In addition, these authors also discuss effects of androgens, estrogens, and other peripheral hormones on the hypothalamus function.

The final contribution by B. Scharrer is on historical perspectives of neurosecretion and neuroendocrinology, a subject in which she has played an important role. Scharrer is one of the pioneers responsible for opening the new discipline of biology—neuroendocrinology. It is fitting that the last chapter on historical perspectives of neurosecretion and neuroendocrinology is written by her.

I wish to express my appreciation for the cooperation of the authors and the staff of Academic Press in the preparation of this volume.

Choh Hao Li

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HORMONAL PROTEINS AND PEPTIDES, VOL. VII

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ANDREW V. SCHALLY, DAVID H. COY, CHESTER A. MEYERS, AND ABBA J. KASTIN

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