Frontiers in Neuroscience

Central and Peripheral Endorphins
Basic and Clinical Aspects

Editors

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Central and Peripheral Endorphins: Basic and Clinical Aspects
Eugenio E. Müller and Andrea R. Genazzani (editors), 384 pp., 1984

Opioid Modulation of Endocrine Function
Giuseppe Delitala, Marcella Motta, and Mario Serio (editors), 296 pp., 1984

Preface

The identification and synthesis of enkephalins late in 1975, the recognition that the sequence of β-endorphin and methionine-enkephalin are present in the pituitary prohormone lipotropin, and the discovery that both peptides and related molecules are present in the CNS, represent major breakthroughs in the field of neuropeptides. It is now clear that at least three sets of opioid peptides exist: Group I, comprising compounds such as β-endorphin, derived from pro-opiomelanocortin; Group II, consisting of the enkephalins and their hepta- and octa-derivatives, derived from proenkephalin A; and Group III, composed of dynorphin, neo-endorphin, and leumorphin, all of which are derived from proenkephalin B. In addition to their presence in the pituitary and the CNS, these substances are widely disseminated in the peripheral nervous system, the gastrointestinal tract, and the reproductive system; they are also present in body fluids.

The multiplicity of opioid peptides is paralleled by the heterogeneity of receptor structures found in various areas of the body that interact with them. The variegated effects that peptides exert rely on complex and still poorly understood reactions with such receptors. Opioid peptides can modulate the release, turnover, and action of other transmitters, can coexist with them, and can be co-released by nerve impulses—thereby providing a high degree of versatility to the vocabulary of neural communication. Understandably, opioid peptides are involved in a large number of major CNS functions and behaviors, e.g., learning and memory, and the control of nociception, food and water intake, body temperature, and blood pressure. Potentially, opioids or their antagonists may be found to play a role in major psychiatric diseases, alcohol abuse, and shock therapy.

Although the flow of information on opioid peptides continues at an almost breathtaking pace, major gaps in the field still exist with respect to the physiologic and pathologic significance of endorphins in biological fluids, the interrelationships between central and peripheral endorphins, and their involvement in the etiopathogenesis of disorders of metabolism, nociception, and mood. This volume will stimulate new thinking and provide the latest information on the impact of endogenous opioid peptides in physiology, physiopathology, and therapy. Students and research workers in the fields of neurobiology, neuropharmacology, and neuroendocrinology, as well as neurologists, psychiatrists, and general practitioners will find the book an invaluable and up-to-date reference source.

The Editors

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