



## Book Reviews

### **The Tachykinin Receptors**

Edited by Stephen H. Buck. Published by Humana Press, Totowa, New Jersey, 1994. ISBN: 0-896-03266-3. Price \$125.00.

The tachykinins are a group of structurally related peptides found in central and peripheral tissues and include the mammalian peptides substance P, neurokinin A and neurokinin B. These neuropeptides possess a fascinating and diverse array of biological activities mediated by their interactions with at least three major classes of receptors, first defined by classical pharmacological and biochemical approaches. Indeed, cloning of the substance P receptor in 1987, the first neuropeptide receptor to be cloned, was rapidly followed by cloning of receptor proteins fulfilling the criteria used to define the three neurokinin receptor classes termed NK<sub>1</sub>, NK<sub>2</sub>, and NK<sub>3</sub>. In addition to heralding a new era in the study of tachykinins, cloning of the neurokinin receptors revealed that these neuropeptide receptors belong to the superfamily of G protein-coupled receptors possessing seven membrane-spanning domains characteristic of this receptor superfamily.

The Tachykinin Receptors is the first treatise on the receptors for the tachykinin family of peptides. This volume presents 19 chapters in which some of the major advances in this exciting area of neuropeptide biology are expertly reviewed by many of the leading investigators in this field. The book is nicely organized into five sections. The first section provides an historical perspective on tachykinins and tachykinin receptors. This is followed by a section on characterization of

tachykinin receptors, which includes chapters on receptor binding of agonists and antagonists, comparative distribution of tachykinin receptor types in brain and peripheral tissues, molecular biology of the receptors and molecular modeling of the NK<sub>1</sub> receptor. Next is a section on mechanisms of tachykinin receptor action, which includes a chapter on inositol phosphates and calcium signaling by James Putney and a chapter on tachykinin effects on ion channels. The following section on tachykinin receptor function covers the structure activity relationships of ligands, pharmacological characterization of receptor subtypes/species variants, receptor roles in nociception, and receptor involvement in pathology and disease with contributors including Domenico Regoli, Carlo Maggi and Patrick Mantyh. The last section provides a summary and future perspectives of this rapidly emerging and exciting field in neuropeptide biology.

This is a useful volume to both the expert and the uninitiated. The review like-style is very helpful as an introduction or as a single source of critical information on the receptors for the tachykinin family of peptides and will be of interest also to investigators studying other receptors in the G protein-coupled receptor superfamily. While much of this work has been published, the contributors have succeeded in providing the most current information in this field. The effort of the contributors and editor have resulted in a well-written and organized text that is of particular pleasure to read.

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