

Book review

Receptor Signal Transduction Protocols

edited by R.A.J. Challiss, Humana Press, 1997. \$99.50 (xi + 275 pages) ISBN 0 896 03495 X

The organization of chapters in this book follows the established format for other titles in the well-known series *Methods in Molecular Biology*. Each chapter starts with a brief introduction followed by a description of the materials and equipment required to perform the experiments (including details of suppliers, buffers and reagent compositions). The protocols themselves, divided where possible into individual steps, form the third section. The fourth and often most interesting section contains 'notes' – special tips and tricks, experience of the authors and troubleshooting recommendations. These notes vary significantly from chapter to chapter – they can contain more than 50 points or may simply summarize the results, they range from less than one page to more than seven pages and may include helpful figures and tables or meaningless statements.

The book itself is divided into three parts. The first part 'Methods for characterizing receptors' contains all of the important techniques used to investigate receptor proteins. Methods for stable or transient expression of proteins in mammalian cell lines, for preparation of mutant and chimeric receptors as well as for ligand-binding studies are included. Furthermore, studies to localize receptor expression at mRNA level (*in situ* hybridization) and protein level (antibody generation and immunocytochemistry) are described.

In the second part, the methods for studying receptor coupling mechanisms are summarized. The topics include agonist-stimulated [³⁵S]GTPγS binding and GTP hydrolysis, autoradiography, random-saturation mutagenesis, heterologous expression of receptors and signaling proteins, antisense techniques and characterization of G proteins with antibodies or affinity labeling. Unfortunately, all of the chapters relate only to G-protein-coupled receptors. Some techniques could

also be applied to other systems, but no examples are included. Furthermore, some of the chapters address very rare and specialized questions, whereas frequently used methods (for example the reporter gene approach with luciferase, ligand stimulated change of cAMP concentration) are not mentioned or are just noted as a minor point in another chapter (measurement of internal Ca²⁺ concentration).

The third and smallest section (four chapters) describes methods for investigation of the regulation of receptor function, especially phosphorylation, receptor sequestration and the regulation of receptor expression at mRNA level. Whereas in most chapters the protocols for one specific receptor are described with some general remarks added in the 'notes', the last section is a true general guide for the measurement of receptor regulation. It is useful for all types of receptors, and specific problems are addressed in the 54 points of the note section.

Overall, the book is a very useful collection of protocols used in receptor research. The coverage is topical; some methods are already in daily use and others may become more popular through this book. It can be recommended to scientists working in the field of G-protein-coupled receptors in particular, and should help to get new projects started more rapidly, provide ideas on how problems can be solved and explain how other scientists have solved their specific problems.

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In short ...

Argonaut Technologies (San Carlos, CA, USA) have announced the launch of ArgoPore™ macroporous polystyrene resin for solid-phase organic synthesis. According to Argonaut, the unique pore structure of the resins is manifested in low and uniform solvent swelling, rapid washing and diffusional access to reactive sites that is independent of solvent type.

The Automation Partnership (TAP) (Melbourn, UK) has announced plans to develop a range of genomics processing modules. Dr Willie Harrison (Product Manager, Haystack Systems) says "genomics is ready for a more industrial approach". Commenting on the appointment of Mr Ali Ahmadi as Business Manager for genomic technology, Harrison says "Ali's experience will allow us to extend the use of industrial engineering and logistics to gene discovery and research". Ahmadi was formerly Head of engineering at the Sanger Centre's Genome Research Centre (Cambridge, UK).