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BOOK REVIEW

The Antigen T Cell Receptor: Selected Protocols and Applications

Edited by Jorge R. Oksenberg
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Reviewed by Paul E. Harris

This comprehensive guide to the structural analysis of T cell receptors will be welcomed by cellular and transplantation immunologists who may lack technical expertise in molecular biology and biochemistry as it applies to the characterization of T cell receptors at the clonal and population level. Indeed, this guide is a clearly and concisely written lab manual for the analysis of T cell receptor proteins, transcripts and genes, much like the famous series by Maniatis et al., but tailored to the immunologist.

Far too often, the technical aspects of a method cannot be communicated with enough detail in the text of a journal paper. This guide comes to the rescue, providing detailed protocols and troubleshooting tips, for a variety of TCR analysis methods. The guide is divided into 20 sections, and is introduced with a chapter on the basics of the biology and genetics of the human TCR alpha and beta chain genes. Other sections include the analysis of human T cell receptor subsets using monoclonal antibodies, quantitative analysis of TCR V beta and C beta expression by use of riboprobes and RNAse protection, and analysis of TCR genes at the genomic level by RFLP. Notably, the guide gives excellent protocols for the immunoscope analysis of TCR expression in populations of T cells. Included in this section are the sequences of the necessary primers as well as the complete details for performing the polymerase chain reactions. The well designed protocols given for these methods could stand alone, yet additional details for the analysis and interpretation of immunoscope data are included as well.

The guide is not limited to methods for the analysis of nucleic acids. The last half of the manual provides protocols for the analysis of TCR-associated signaling events, the design of antigen analogs, and for the cloning of T cells to be used in TCR analysis. If the guide has any shortcomings, they would be found in the latter chapter. The methods and techniques described are standard and familiar to most cellular immunologists. The protocols for the generation of T cell lines and clones would have been more useful if advanced techniques, such as the generation of dendritic cells for use as APC and the selective use of lymphokines to influence T cell phenotypes, had been presented. From an alternate point-of-view, these protocols probably provide an excellent starting point for those investigators who are new to the field and wish to begin the adventure of cloning T cells.

For those members of the transplantation and cellular immunology field wishing to bring added depth to the characterization of the effector cells that rule their daily existence, this user-friendly guide will prove indispensable.

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