
Preface

Our understanding of the immunological mechanisms of rejection has greatly improved over the past 10 years. Much of this is the result of technical innovations in the laboratory, resulting in more detailed analysis of experimental graft rejection and better ways of detecting and monitoring the patients' immune response to the allografted organ. *Transplantation Immunology: Methods and Protocols* focuses, in the main, on practical methods of detecting the immune response to the allografted organ. The first six chapters are, however, more theoretical. They provide an update on current practices of renal, liver, islet, and lung transplantation, and pathways of antigen presentation and chronic rejection. A possible novel therapy of transplant rejection involves the overexpression of molecules of interest in donor or recipient tissues, the issues of the best vectors, whether viral or nonviral is reviewed in Chapters 8 and 9. Methods of HLA typing and methods of detecting HLA antibodies have considerably changed in recent years and current methods are described in two chapters. More specialized methods, generally confined to research labs at present, such as proteomics, laser dissection microscopy, and real-time polymerase chain reaction, are described. Whereas monitoring the antibody response to transplantation has been performed by many laboratories in the past, monitoring the T-cell response is still laborious and hence the province of very specialized laboratories. The traditional method, quantitative limiting dilution analysis, is described and compared with new techniques. The area of tolerance induction and reprogramming of the immune system is covered in Chapter 11, and current practices of organ preservation and immunosuppressive drugs (Chapters 15 and 16) are also included. Finally, chronic rejection has been difficult to mimic in experimental models, all models are limited, and this subject is updated in the final chapter.

Transplantation Immunology: Methods and Protocols is intended for clinicians and scientists interested in the practice of solid organ transplantation. The chapters all give broad overviews and as such will be suitable for relative newcomers to the field. For those already familiar or expert in certain laboratory methods, we hope they find the chapters about the newer techniques of interest and value.

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Methods and Protocols

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