Preface

Tissue culture techniques were first developed at the beginning of the twentieth century and have undergone dramatic changes and improvements since that time. They are invaluable tools for the exploration of numerous biological questions related both to cellular processes and to the signaling mechanisms that regulate them. At some point in their careers, virtually every scientist and technician, as well as many medical professionals, regardless of their area of specialization has a need to utilize cell culture systems.

Our objective in preparing this book was to provide the novice cell culturist with sufficient information to perform the basic techniques, to ensure the health and identity of their cell lines, and to be able to isolate and culture specialized primary cell types. It was our intent to generate a valuable resource book containing clear methodologies pertinent to current areas of investigation, rather than attempting to educate cell culturists on specific cell types or organ systems. We have thus included updates on several of the chapters from the previous edition but have also added a significant number of new chapters to this volume.

It is anticipated that many readers will have a solid background in the fundamentals of anatomy, histology, and biochemistry but little or no experience in cell culture. We anticipate that this book will be a useful resource for technicians, graduate students, and postdoctoral fellows, as well as for the research leaders (both basic scientists and clinicians) and cell culture experts moving toward the use of new model systems.

The chapters that follow provide step-by-step instructions for the isolation and growth of various primary cell types. In addition, they illustrate the techniques required for defining the properties of various types of cells as well as for cell differentiation.

We wish to extend our sincerest appreciation to all the contributors who willingly took the time to share their expertise and knowledge and to the many individuals who assisted us in the preparation of this book. Special thanks go to Dr. Carrie Peters and Jessica Ata who assisted with the editing process and were instrumental in keeping everything organized and on track.

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