Preface

Since the publication of the first edition of *Human Cell Culture Protocols*, the field of human cell culture has continued to expand and increasing numbers of researchers find they need to dip their toes into the world of tissue culture, even if this is not the main focus of their work. Today, not only does a whole industry supply all the materials necessary for tissue culture, there is a growing number of companies specializing in the supply of a diverse range of human cells. For those without existing links to clinicians and hospital departments, the purchase of cells may be an attractive starting point, although this can be an expensive option. Alternatively, many researchers find an essential element in success is building close links with clinicians and hospital departments from which human tissue samples are obtained. In particular, close collaboration can enable cell culture to be initiated with the very minimum of delay, which is often the key to establishing a viable culture. Before any experimental work takes place, however, researchers must ensure that patients have provided informed consent and that local and/or national ethical and other guidelines for the procurement and use of human tissue are met. In addition, the tissues received are potentially biohazardous, possibly harboring infectious agents such as HIV, hepatitis, and tuberculosis, so appropriate safety measures must be in place.

A quick search of any of the literature databases reveals the breadth of uses that human cells are put to. Cell culture is the starting point for so many applications. Microarray technology continues to develop, helping to elucidate patterns of gene expression within cells. A wide range of techniques is available to help researchers identify and understand the complex web of protein–protein interactions within and between cells. Cell cultures are used to test approaches to gene therapy and to gain an understanding of the cell cycle, particularly in relation to the development of cancers. The construction of 3-D cell cultures and the field of tissue engineering are the subjects of many other texts and take us far beyond the scope of this volume. Advances in microscopy refine our ability to image live cells in culture. Ultimately, the pooling of many strands of knowledge over time allows the development of new therapeutic approaches for human disease.

The first edition of *Human Cell Culture Protocols* was published in 1996. Now in this second edition, the collection of chapters has been revised to bring the methods up to date. As in the first edition, it has not been possible to cover

the vast array of distinct cell types in one volume. I have, however, kept to the ideals of the first edition in trying to ensure that protocols are provided for a selection of the major tissue groups. New to this edition are chapters on fibroblasts, Schwann cells, gastric and colonic epithelial cells, and parathyroid cells. This collection of protocols will provide researchers who are starting to use cell culture methods for the first time with the detailed knowledge and helpful pointers they need. It should enable them to achieve success quickly and with the minimum of difficulty. Even those familiar with cell culture techniques may find this book a useful resource.

Finally, I would like to thank Gareth E. Jones whose success in bringing together the first edition gave me a wonderful foundation. Grateful thanks to the many authors who agreed to update their chapters from the first edition, and to those authors who have contributed for the first time. Thanks also to Professor John Walker and the staff at Humana Press who were always extremely prompt in responding to any and every enquiry and who were also patient when my replies to them were less than punctual.

Joanna Picot