
Preface

There have been significant advances in research involving the isolation and culture of epithelial cells in the past decade, and many new techniques have been developed. Monolayer cultures can be used to evaluate the nature and behavior of cells, while the use of epithelial cells in model systems has allowed a deeper understanding of cellular and molecular mechanisms and interactions. The aim of this book is to provide a comprehensive, step-by-step guide to many techniques for epithelial cell culture, combining in one volume the more commonly used protocols along with many that are more specialized. *Epithelial Cell Culture Protocols* should help those who are new to this field and want to learn the basic culture techniques, as well as those needing to use more wide ranging and specific protocols. It should be a useful resource on its own, and also complement the other volumes that have been written about cell culture in the *Methods in Molecular Biology* series.

Epithelial Cell Culture Protocols covers a wide variety of protocols, mostly aimed at the researcher, but also a few aimed at clinicians. The establishment and maintenance of primary cultures derived from many different tissues and different species is covered. Particular emphasis has been placed on protocols needed to further analyze and assess epithelial cells, for example, by looking at apoptosis and integrins and by measuring membrane capacitance and confluence. Using different co-culture techniques, it is possible also to develop models to investigate many different systems in vitro. There are chapters describing several of these, for example, models of the blood-brain barrier, systems to investigate the interaction of epithelial cells with bacteria, and models to investigate drug uptake. From a more clinical aspect, one of the most exciting advances in culturing epithelial cells has been the ability to use these cells in treating patients with burns and other skin disorders, and this area is also covered in this book.

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