Epidermal Cells
Epidermal Cells

Methods and Protocols

Edited by

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Preface

Since Howard Green and colleagues first successfully cultured and maintained epidermal cells in vitro more than two decades ago, our understanding of and ability to manipulate these cells have increased tremendously. Nevertheless, over the years there was, and still is in some circles, an almost mystical notion that epidermal cells are very difficult to work with. Although this may generally be true in comparison to fibroblasts, the field has made exceptional strides in making many methodologies accessible to this cell type. I, therefore, felt that the time was right to collect some of the powerful protocols covering such topics as different methods and models for culturing epidermal cells, enriching for very early epidermal progenitors, and studying epidermal cell commitment and differentiation both in vitro and in vivo. Epidermal Cells: Methods and Protocols is not meant to be a comprehensive collection of all possible protocols by which to manipulate epidermal cells, but instead is geared toward protocols that both experienced and novice researchers interested in epidermal biology should find invaluable and easily reproducible in their own labs. If I have achieved this, it is with the willingness of the very committed contributors to share their “hard-won” methodologies. I thank them all.

I would also like to take this opportunity to acknowledge Dr. Jane Aubin for being such a great mentor over many years, but most especially for instilling much enthusiasm and rigor into my own fledgling days of cell culture and differentiation. I similarly thank Dr. Elaine Fuchs for giving me the opportunity to “get down and dirty” with epidermal cells and mouse models to study them. Without their support and the opportunities they gave me, I would not have been able to grow in the scientific directions that I find so exciting.

It is also important to recognize Dr. John Walker, who has been continuously supportive of and helpful in the projects that I have picked. In addition, I would like to acknowledge the enthusiastic support of all at Humana Press who have helped, especially Craig Adams.

I am grateful to N. Urfe for stimulating discussions.

Finally, I would like to thank my great coworker, Tammy Troy. Her endless chipper and enthusiastic support and help have made it a pleasure to complete this book.

Kursad Turksen
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Color Plates

Color Plates 1–5 appear as an insert following p. 238.

**PLATE 1** Confocal immunofluorescence micrographs of HaCat cells double stained with anti-desmoglein-3 antibody and anti-cytokeratin pan antibody. (See full caption on p. 186, Chapter 20.)

**PLATE 2** Two-photon fluorescence intensity images before and after UV irradiation of ex vivo human breast tissue incubated with DHR. (See full caption on p. 419, Chapter 39.)

**PLATE 3** These images show that similar results as from the ex vivo skin are found with the skin equivalent EpiDerm™ 200. (See full caption on p. 419, Chapter 39.)

**PLATE 4** GFP visualization in hair shafts of adenoviral–GFP transduced grafted skin. (See full caption on p. 438, Chapter 42.)

**PLATE 5** Hair follicle stem cells in hair growth cycle. (See full caption on p. 442, Chapter 42.)