Contents

Preface . . . . . *v*
Contributors . . . . . *ix*

PART I INTRODUCTION AND REVIEW

1 ErbB Receptors and Cancer 3
Zhixiang Wang

2 New Insights from Drosophila into the Regulation of EGFR Signaling 37
Nicholas Harden

3 *C. elegans* Vulva Induction: An In Vivo Model to Study Epidermal Growth Factor Receptor Signaling and Trafficking 43
Kimberley Gauthier and Christian E. Rocheleau

4 Targeting HER2 in Advanced Breast Cancer 63
Xiaofu Zhu and Anil Abraham Joy

PART II CLASSICAL METHODS IN THE STUDIES OF ERBB RECEPTOR SIGNALING

5 Methods to Investigate EGFR Ubiquitination 81
Alexia Conte and Sara Sigismund

6 Dimerization Assessment of Epithelial Growth Factor Family of Receptor Tyrosine Kinases by Using Cross-Linking Reagent 101
Hamid Maadi, Babak Nami, and Zhixiang Wang

7 Application of Immunofluorescence Staining to Study ErbB Family of Receptor Tyrosine Kinases 109
Babak Nami and Zhixiang Wang

8 Activation of Endosome-Associated Inert EGF Receptor Following Internalization 117
Yi Wang, Sukhmani Billing, and Zhixiang Wang

9 Two-Pulse Endosomal Stimulation of Receptor Tyrosine Kinases Induces Cell Proliferation 127
Steven Pennock, Sukhmani Billing, Zhixiang Wang, and Yi Wang

10 Study of EGFR Signaling/Endocytosis by Site-Directed Mutagenesis 135
Qian Wang and Zhixiang Wang

11 Using Percoll Gradient Fractionation to Study the Endocytic Trafficking of the EGFR 145
Julie A. Gosney and Brian P. Ceresa

12 Analysis of Epidermal Growth Factor Receptor-Induced Cell Motility by Wound Healing Assay 159
Junfeng Tong and Zhixiang Wang

Part III Recently Developed Methods in the Studies of ErbB Receptor Signaling

13 Cell Cycle Synchronization of HeLa Cells to Assay EGFR Pathway Activation 167
Ping Wee and Zhixiang Wang

14 Analysis of Constitutive EGFR Signaling Regulating IRF3 Transcriptional Activity in Cancer Cells 183
Gao Guo, Ke Gong, and Amyn A. Habib

15 Measurement of Epidermal Growth Factor Receptor-Derived Signals Within Plasma Membrane Clathrin Structures 191
Stefanie Lucarelli, Ralph Christian Delos Santos, and Costin N. Antonescu

Part IV Methods for Studying EGFR Signaling in Drosophila

16 Studying Nonproliferative Roles for Egfr Signaling in Tissue Morphogenesis Using Dorsal Closure of the Drosophila Embryo 229
Bruce Reed and Nicholas Harden

Part V Methods Related to the Translational Research of ErbB Receptor Signaling

17 Analysis of Epithelial–Mesenchymal Transition Induced by Overexpression of Twist 259
Jing-Wen Bai, Yong-Qu Zhang, Yao-Chen Li, and Guo-Jun Zhang

18 Assessment of Specificity of an Adenovirus Targeted to HER3/4 275
Sheena H. MacLeod, Kyle G. Potts, Shyambabu Chaurasiya, and Mary M. Hitt

19 Isolation of Human Mesenchymal Stem Cells for Studying ErbB Receptor Signaling 295
Chao Chen and Hongxing Jiang

Index *301*

http://www.springer.com/978-1-4939-7218-0

ErbB Receptor Signaling
Methods and Protocols
Wang, Z. (Ed.)
2017, X, 303 p. 54 illus., 41 illus. in color., Hardcover
ISBN: 978-1-4939-7218-0
A product of Humana Press