Contents

Preface .......................................................... v
Contributors ...................................................... xi

1 Cancer Drug Resistance: A Brief Overview from a Genetic Viewpoint .................................................... 1
José Rueff and António Sebastião Rodrigues

2 Classical and Targeted Anticancer Drugs: An Appraisal of Mechanisms of Multidrug Resistance ..................... 19
Bruce C. Baguley

3 In Vitro Methods for Studying the Mechanisms of Resistance to DNA-Damaging Therapeutic Drugs .................. 39

4 In Vitro Approaches to Study Regulation of Hepatic Cytochrome P450 (CYP) 3A Expression by Paclitaxel and Rifampicin .... 55
Romi Ghose, Pankajini Mallick, Guncha Taneja, Chun Chu, and Bhagavatula Moorthy

5 Uptake and Permeability Studies to Delineate the Role of Efflux Transporters ........................................... 69
Ramya Krishna Vadlapatla, Dhananjay Pal, and Ashim K. Mitra

6 Dynamics of Expression of Drug Transporters: Methods for Appraisal ...................................................... 75
Marta Gromicho, José Rueff, and António Sebastião Rodrigues

7 Fluorimetric Methods for Analysis of Permeability, Drug Transport Kinetics, and Inhibition of the ABCB1 Membrane Transporter ........................................ 87
Ana Armada, Célia Martins, Gabriella Spengler, Joseph Molnar, Leonard Amaral, António Sebastião Rodrigues, and Miguel Viveiros

8 Resistance to Targeted Therapies in Breast Cancer. .................. 105
Sofia Braga

9 MicroRNAs and Cancer Drug Resistance .......................... 137
Bruno Costa Gomes, José Rueff, and António Sebastião Rodrigues

10 The Role of MicroRNAs in Resistance to Current Pancreatic Cancer Treatment: Translational Studies and Basic Protocols for Extraction and PCR Analysis ............................ 163
Ingrid Garajová, Tessa Y.S. Le Large, Elisa Giovannetti, Geert Kazemier, Guido Biasco, and Godefridus J. Peters
<table>
<thead>
<tr>
<th>Chapter</th>
<th>Title</th>
<th>Author(s)</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>11</td>
<td>Methods for Studying MicroRNA Expression and Their Targets in Formalin-Fixed, Paraffin-Embedded (FFPE) Breast Cancer Tissues</td>
<td>Bruno Costa Gomes, Bruno Santos, José Rueff, and António Sebastião Rodrigues</td>
<td>189</td>
</tr>
<tr>
<td>12</td>
<td>The Regulatory Role of Long Noncoding RNAs in Cancer Drug Resistance</td>
<td>Marjan E. Askarian-Amiri, Euphemia Leung, Graeme Finlay, and Bruce C. Baguley</td>
<td>207</td>
</tr>
<tr>
<td>13</td>
<td>Cancer Exosomes as Mediators of Drug Resistance</td>
<td>Maria do Rosário André, Ana Pedro, and David Lyden</td>
<td>229</td>
</tr>
<tr>
<td>14</td>
<td>Isolation and Characterization of Cancer Stem Cells from Primary Head and Neck Squamous Cell Carcinoma Tumors</td>
<td>Hong S. Kim, Alexander T. Pearson, and Jacques E. Nör</td>
<td>241</td>
</tr>
<tr>
<td>15</td>
<td>Clinical and Molecular Methods in Drug Development: Neoadjuvant Systemic Therapy in Breast Cancer as a Model</td>
<td>Sofia Braga</td>
<td>251</td>
</tr>
<tr>
<td>16</td>
<td>Proteomics in the Assessment of the Therapeutic Response of Antineoplastic Drugs: Strategies and Practical Applications</td>
<td>Vukosava Milic Torres, Lazar Popovic, Fátima Vaz, and Deborah Penque</td>
<td>281</td>
</tr>
</tbody>
</table>

Index ........................................................................................................ 313
Cancer Drug Resistance
Overviews and Methods
Rueff, J.; Rodrigues, A.S. (Eds.)
2016, XIII, 314 p. 47 illus., 37 illus. in color., Hardcover
ISBN: 978-1-4939-3345-7
A product of Humana Press