
Contents

| | |
|---|-----------|
| <i>Preface</i> | <i>v</i> |
| <i>Contributors</i> | <i>ix</i> |
| 1 Methods of Immunohistochemistry and Immunofluorescence: Converting Invisible to Visible | 1 |
| <i>Hidetoshi Mori and Robert D. Cardiff</i> | |
| 2 Laser Capture Microdissection as a Tool to Study Tumor Stroma | 13 |
| <i>Nicholas R. Bertos and Morag Park</i> | |
| 3 Quantitative Analysis of Human Cancer Cell Extravasation Using Intravital Imaging | 27 |
| <i>Lian Willetts, David Bond, Konstantin Stoletov, and John D. Lewis</i> | |
| 4 Studies on the Tumor Vasculature and Coagulant Microenvironment | 39 |
| <i>Esterina D'Asti, Brian Meehan, and Janusz Rak</i> | |
| 5 A Microfluidic Method to Mimic Luminal Structures in the Tumor Microenvironment | 59 |
| <i>José A. Jiménez-Torres, David J. Beebe, and Kyung E. Sung</i> | |
| 6 Measuring Vascular Permeability In Vivo | 71 |
| <i>Eelco F.J. Meijer, James W. Baish, Timothy P. Padera, and Dai Fukumura</i> | |
| 7 Hydroxylation-Dependent Interaction of Substrates to the Von Hippel-Lindau Tumor Suppressor Protein (VHL) | 87 |
| <i>Pardeep Heir and Michael Ohh</i> | |
| 8 Analyzing the Tumor Microenvironment by Flow Cytometry | 95 |
| <i>Yoon Kow Young, Alicia M. Bolt, Ryuhjin Ahn, and Koren K. Mann</i> | |
| 9 Detecting Secreted Analytes from Immune Cells: An Overview of Technologies | 111 |
| <i>Kelly A. Pike, Caitlyn Hui, and Connie M. Krawczyk</i> | |
| 10 Purification of Immune Cell Populations from Freshly Isolated Murine Tumors and Organs by Consecutive Magnetic Cell Sorting and Multi-parameter Flow Cytometry-Based Sorting | 125 |
| <i>Camilla Salvagno and Karin E. de Visser</i> | |
| 11 Viral Engineering of Chimeric Antigen Receptor Expression on Murine and Human T Lymphocytes | 137 |
| <i>Joanne A. Hammill, Arya Afsahi, Jonathan L. Bramson, and Christopher W. Helsen</i> | |
| 12 Methods to Evaluate the Antitumor Activity of Immune Checkpoint Inhibitors in Preclinical Studies | 159 |
| <i>Bertrand Allard, David Allard, and John Stagg</i> | |

| | | |
|----|--|-----|
| 13 | Isolation and Characterization of Low- vs. High-Density Neutrophils in Cancer | 179 |
| | <i>Jitka T. Sagiv, Sandra Voels, and Zvi Granot</i> | |
| 14 | Analysis of Extracellular Vesicles in the Tumor Microenvironment | 195 |
| | <i>Khalid Al-Nedawi and Jolene Read</i> | |
| 15 | Visualizing the Tumor Microenvironment of Liver Metastasis by Spinning Disk Confocal Microscopy | 203 |
| | <i>Liane Babes and Paul Kubes</i> | |
| 16 | Intravital Microscopy for Imaging the Tumor Microenvironment in Live Mice | 217 |
| | <i>Victor Naumenko, Craig Jenne, and Douglas J. Mahoney</i> | |
| 17 | Development of a Patient-Derived Xenograft Model Using Brain Tumor Stem Cell Systems to Study Cancer | 231 |
| | <i>Chirayu Chokshi, Manvir Dhillon, Nicole McFarlane, Chitra Venugopal, and Sheila K. Singh</i> | |
| 18 | Modeling Breast Tumor Development with a Humanized Mouse Model. | 247 |
| | <i>Lisa M. Arendt</i> | |
| 19 | CRISPR/Cas9 Genome Editing as a Strategy to Study the Tumor Microenvironment in Transgenic Mice | 261 |
| | <i>Yojiro Yamanaka</i> | |
| 20 | Metabolomics Analyses of Cancer Cells in Controlled Microenvironments. | 273 |
| | <i>Simon-Pierre Gravel, Daina Avizonis, and Julie St-Pierre</i> | |
| 21 | Analysis of the Tumor Microenvironment Transcriptome via NanoString mRNA and miRNA Expression Profiling. | 291 |
| | <i>Marie-Noël M'Boutchou and Léon C. van Kempen</i> | |
| 22 | RNA-Seq as a Tool to Study the Tumor Microenvironment. | 311 |
| | <i>Pudchalaluck Panichnantakul, Mathieu Bourgey, Alexandre Montpetit, Guillaume Bourque, and Yasser Riazalhosseini</i> | |
| 23 | Sample Preparation for Mass Spectrometry Analysis of Protein–Protein Interactions in Cancer Cell Lines and Tissues | 339 |
| | <i>Alice Beigbeder, Lauriane Vélot, D. Andrew James, and Nicolas Bisson</i> | |
| | <i>Index</i> | 349 |

The Tumor Microenvironment

Methods and Protocols

Ursini-Siegel, J.; Beauchemin, N. (Eds.)

2016, XII, 356 p. 38 illus., 19 illus. in color. With online files/update., Hardcover

ISBN: 978-1-4939-3799-8

A product of Humana Press