

---

# Contents

Preface .....	v
Contributors .....	xi
1 Microdissection of Histologic Sections: <i>Manual and Laser Capture Microdissection Techniques</i> <b>Christopher A. Moskaluk</b> .....	1
2 Isolation of a Purified Epithelial Cell Population from Human Colon <b>James K. Roche</b> .....	15
3 Xenografting Human Colon Cancers <b>Jeffrey C. Harper, Reid B. Adams,</b> <b>and Steven M. Powell</b> .....	21
4 Comparative Genomic Hybridization Technique <b>Wa'el El-Rifai and Sakari Knuutila</b> .....	25
5 Fluorescence <i>In Situ</i> Hybridization: <i>Application in Cancer Research and Clinical Diagnostics</i> <b>Svetlana D. Pack and Zhengping Zhuang</b> .....	35
6 Microsatellite Analysis to Assess Chromosome 18q Status in Colorectal Cancer <b>Jin Jen</b> .....	51
7 The SURF Technique: <i>Selective Genetic Analysis</i> <i>of Microscopic Tissue Heterogeneity</i> <b>Darryl Shibata</b> .....	59
8 Microsatellite Instability Testing <b>Yann R. Parc and Kevin C. Halling</b> .....	69
9 Immunohistochemical Analysis for <i>hMLH1</i> and <i>hMSH2</i> Expression in Colorectal Cancer <b>Kevin C. Halling and Patrick C. Roche</b> .....	81
10 Mutation Detection in Colorectal Cancers: <i>Direct Sequencing of DNA Mismatch Repair Genes</i> <b>Julie M. Cunningham, David J. Tester,</b> <b>and Stephen N. Thibodeau</b> .....	87

11	Mutation Detection in the TGF- $\beta$ Receptors <b>William M. Grady, Lois L. Myeroff, Hongmei He, and Sanford Markowitz</b> .....	99
12	Direct Analysis for Familial Adenomatous Polyposis Mutations <b>Steven M. Powell</b> .....	113
13	I1307K Mutation Detection by Allele-Specific PCR in Familial Colorectal Cancer <b>Perry S. Chan and Steven L. Gersen</b> .....	129
14	Microsatellite Analysis of the Insulin-Like Growth Factor II Receptor in Colorectal Carcinomas <b>Rhonda F. Souza and Stephen J. Meltzer</b> .....	137
15	Molecular Detection of <i>Smad2/Smad4</i> Alterations in Colorectal Tumors <b>Sam Thiagalingam</b> .....	149
16	Direct Sequencing for Juvenile Polyposis Gene <i>SMAD4/DPC4</i> Mutations <b>Lauri A. Aaltonen and Stina Roth</b> .....	167
17	Direct Sequencing for Peutz-Jehgers Gene <i>LKB1 (STK11)</i> Mutations <b>Lauri A. Aaltonen and Egle Avizienyte</b> .....	175
18	Direct Sequencing for Cowden Syndrome Gene <i>PTEN (MMAC1)</i> Mutations <b>Lauri A. Aaltonen, Stina Roth, and Charis Eng</b> .....	185
19	Genetic Analysis Using Microarrays <b>Wa'el El-Rifai and Sakari Knuutila</b> .....	195
20	Cyclooxygenase-2 (COX-2) Protein Expression by Western Blotting <b>Hossam M. Kandil and Raymond N. DuBois</b> .....	205
21	The Immunohistochemical Method <b>Lisa A. Cerilli and Henry F. Frierson, Jr.</b> .....	213
22	Immunohistochemical Detection and Quantitation of Cell Surface Receptors for Prostanoids <b>Rosana Cosme and James K. Roche</b> .....	231
23	Adhesion Signaling Through Integrins <b>Reid B. Adams and Joshua D. Rovin</b> .....	239
24	Electrophoretic Mobility Shift Assay (EMSA) <b>Michael F. Smith, Jr. and Sandrine Delbary-Gossart</b> .....	249

25 Transfection Assays for Transformation  
of Model Colonic Cell Lines  
**Mark T. Worthington and Roger Qi Luo ..... 259**

26 Assessment of Intestinal Stem Cell Survival Using  
the Microcolony Formation Assay  
**Kimberly S. Tustison, Joanne Yu,  
and Steven M. Cohn ..... 267**

27 Gene Transfer into the Colonic Mucosa  
**Başak Çoruh and Theresa T. Pizarro ..... 275**

Index ..... 285



<http://www.springer.com/978-0-89603-767-0>

Colorectal Cancer

Methods and Protocols

Powell, S.M. (Ed.)

2001, XIII, 294 p., Hardcover

ISBN: 978-0-89603-767-0

A product of Humana Press