
Preface

The contents of *Colorectal Cancer: Methods and Protocols* aim to instruct investigators in all the key genetic, cellular, and molecular biological methods of analyzing colorectal tumors. The focused techniques and assays are described in sufficient detail to allow researchers to start an experiment on colon tumors and proceed from beginning to end as if the expert in the field who has performed these studies were guiding them at the bench. Of note, most of the chapters in this volume are written by those scientists who pioneered these methods and assays in their respective fields.

The chapters in *Colorectal Cancer: Methods and Protocols* describe “state of the art” methods to analyze colorectal tumors, ranging from gross microdissection of specimens to specific molecular analyses. Included are coverages of mutational assays, instability testing, immunohistochemical assays, chromosomal studies, and gene expression analyses. The goal of our volume is to facilitate the performance of colorectal tumor biological experiments by investigators at various levels of training—from graduate students and postdoctoral fellows to principal investigators who desire to advance our understanding of colon cancer development.

Recent advances in the fields of molecular genetics, signal transduction, DNA repair, and genomic instability—especially as they relate to colorectal tumorigenesis—make this comprehensive coverage of molecular assays of this cancer particularly timely. The initial section of the volume describes gross microdissection of colon tumors and the establishment of cell lines and xenografted tumors. The next section describes chromosomal analyses, including comparative genomic hybridization and FISH assays. Mutational analyses of colon tumors and of blood samples to determine whether they have inherited a significant predisposition for colorectal cancer development follows. Microsatellite instability testing is also presented. Gene expression analyses including immunohistochemical assays, Western blotting, and microarray assays are in the final section to complete the volume.

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