
Preface

The purpose of *Renal Cancer: Methods and Protocols* is to introduce the surgeon, clinician, investigator, and research scientist to the basic methods employed in the diagnosis and treatment of renal cancer. Treatment of localized renal cancer is surgical. Treatment of metastasis with resection, radiotherapy, chemotherapy, and immunotherapy has had limited results. Therefore, new avenues of treatment are necessary.

In planning this work, I have attempted to incorporate coverage by specialists from a variety of disciplines, each applying their individual expertise in renal cancer therapy. Though many of the participating authors are urologists, there are also valuable contributions from medical oncologists, laboratory investigators, and pathologists.

One of the inherent problems in publishing a book that describes molecular techniques, especially those techniques that are rapidly evolving, is that some of these may become obsolete after a few years. However, many of the procedures detailed here are standard approaches that have already withstood the test of time.

Reverse transcriptase PCR, or RT-PCR, a technique that produces multiple copies of selected sequences of DNA, has a sensitivity of a millionfold amplification of a single cell, and thus constitutes a very precise technique for measuring the presence of tumor cells. By combining this technique with genomic hybridization, cadherin, β and metalloproteinase expression we may then reveal other important factors in the detection, staging, aggressiveness, and treatment of this disease.

In addition, the generation of monoclonal antibodies, and the utilization of interferon alpha, GM-CSF, IL-6, and gene therapy appear to have very practical applications for this neoplasm.

Because the majority of these techniques are in vitro, it is important to analyze the in vivo model before practical applications are made in human clinical trials. Therefore, we have included several in vivo assays for analyzing angiogenesis, anti-angiogenesis, and general renal tumor biology.

This was a pioneering project for the investigation of renal cancer. On a personal note, I wish to thank the many contributors who helped me to put this book together. Some I have known for years, and others I became acquainted with during the initial phases of this undertaking. I would also like to thank

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Jack H. Mydlo, MD



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