

Preface

The past decade has seen an immense growth in our understanding of the molecular basis of cancer, which has made a significant impact on how we manage cancer in this era of personalized medicine. Breast cancer, which is the most common malignancy in women in the western world, has been the vanguard in the application of molecular pathology in its management. Advances in molecular pathology have led to the development of new ancillary studies that are now standard clinical practice for profiling of breast tumors permitting the tailoring of adjuvant treatment. The investigations include diagnostic and predictive biomarkers determined both by immunohistochemistry and more traditional molecular pathology techniques such as FISH. At the advancing research front further potential new targets of therapy within the molecular pathways underpinning current practice are being revealed.

With the fast pace of growth in our knowledge, practicing physicians, including pathologists, are increasingly expected to have a sound understanding of both traditional morphology based interpretation and the molecular pathology of breast cancer. Pathologists are consultants to their clinical colleagues for managing patients with breast cancer, and the role of molecular pathology has become critical in this era of personalized medicine and multidisciplinary cancer care. It is therefore important for pathologists to be familiar with advances in molecular pathology of breast cancer, so they can provide a better, informed, opinion when discussing cases with their clinical colleagues.

This book, which is part of the molecular pathology of cancer series, was put together with the aim of combining histopathologic and cytomorphologic features with changes at the molecular level, and how these latter alterations can play a role in breast cancer management. The editors are experienced practicing diagnostic breast pathologists who apply these molecular pathology techniques routinely in their practice. With the exception of one chapter where we have invited breast radiologist and medical physics experts to write on the molecular basis of breast cancer imaging, all the authors in addition to diagnostic pathologists, include cancer biologists, who focus on the molecular biology of the breast cancer. The editors, who are also the senior author on each chapter, are internationally recognized

breast pathologists who bring their own valuable insights into the interface between morphology and molecular pathology.

We are very grateful to all the contributors who have taken time out of their busy schedules to write these chapters. We would also like to take this opportunity to thank the series editor Dr. Philip Cagle for inviting us to write this book and the editorial staff at Springer Publications for all their assistance in making this project possible.

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