

Book Review

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Principles of Molecular Oncology. Edited by Miguel H. Bronchud, MaryAnn Foote, William P. Peters, and Murray O. Robinson. Totowa, New Jersey: Humana Press. Pp. 468. \$125 (hardcover)

Cancer has been said to be a “genetic disease,” and even before the initiation of the Human Genome Project (HGP), the field of cancer genetics was rapidly growing. Specific genetic alterations were associated with a particular kind of cancer (e.g., the 9;22 translocation was found to be diagnostic of chronic myelogenous leukemia), were associated with patient outcome (e.g., HER2/neu gene overexpression and/or amplification was associated with a poor prognosis in breast cancer), or predicted responsiveness to chemo- or radiotherapy (e.g., breast cancers with positive estrogen-receptor expression were found to respond to adjuvant tamoxifen therapy). Indeed, we learned that, depending on the clinical circumstances, individual genetic alterations can be diagnostic, prognostic, or predictive (or all three).

The HGP has only accelerated the growth of molecular oncology. Large numbers of genetic alterations are being (and will be) described in cancer as a result of the HGP. However, it is not easy to learn the best approaches to determine the diagnostic, prognostic, or predictive value of such alterations. A comprehensive, informative, and user-friendly text that describes such approaches is sorely needed. The volume by Bronchud et al. fulfills a large part of this need.

The first section of the book describes general ways to select

and use molecular markers of cancer. Although all chapters in this section are relevant, the most useful is that written by Daniel F. Hayes. Dr. Hayes carefully describes the promises and pitfalls of assessing the clinical usefulness of genetic markers.

The second section of the volume explores key specific regulatory pathways that have been shown to be altered in cancer development. The chapters on growth-factor–signaling pathway alterations, by Kalderon, and on targeting the cyclin-dependent kinase pathway, by Brizuela et al., are especially useful.

The final section of the book explores future directions of clinical and basic molecular oncology. Although predictions of the direction of science are always somewhat speculative, the authors in this section make salient and potentially useful predictions—especially concerning the range of new therapeutic targets and therapeutic agents.

In summary, “Principles of Molecular Oncology” is a useful text for both new and experienced investigators in cancer genetics. It provides a framework for learning how to evaluate the diagnostic, prognostic, and predictive value of the myriad new cancer-genetic alterations that will result from the HGP.

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