Handbook of Anticancer Drug Development

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This volume, reflecting the editors, has a strongly academic slant with a preponderance of contributions from academia, rather than industry, and several chapters more related to research than to development. It is also more focused on the USA than on other parts of the world, and a European perspective on Bioanalysis (Chapter 13), Data verification and auditing (Chapter 27), and the Role of the co-operative groups (Chapter 28) would have been informative. As with all volumes described as 'Handbooks' there are a number of excellent chapters interspersed with several I found more mundane.

The first main chapter is on natural products, but I feel that the excellent contribution of Sausville and Johnson would have provided a better start to the section on Drug discovery, covering both old and new ideas, providing background information as well as looking to the future. The chapters on Protein crystallography and Bioinformatics prove extremely interesting introductions to these topics, with insight into both limitations and advantages, serving to emphasize their potential for major roles in future drug development. The succeeding chapter on Genomics is presented with unguarded optimism, whilst that on Proteomics comes with more of a dose of realism. The use of these technologies in identifying unacceptable side-effects or excessive toxicities of test compounds provides another slant on their potential future values. Indeed, the role of Pharmacogenomics in monitoring drug responses and drug metabolism is covered later in Chapter 25.

The chapters centered on preclinical models appear to have a definite bias in presenting their value in cancer drug development and perhaps a review of some of the 'cons' as well as the 'pros' would have been useful. The claim that xenografts of non-small cell lung cancer and ovarian cancers were predictive relies on data from large panels of such tumors, which if integrated into a development programme would prove exceedingly costly and time consuming. Highlighting the different information obtained from *in vitro* and *in vivo* studies would have been useful.

The chapter on Good Laboratory Practice should probably be required reading for all academic groups aiming to collaborate with industry, whilst that on Formulation highlights an increasingly important aspect of development. Many novel compounds, especially those from natural sources, are poorly soluble in conventional solvents. There is a case for optimizing formulation of lead compounds at a much earlier stage in the development programme than is often the case today. This is an area requiring innovation and certain possibilities are considered in the next three chapters. Second-generation liposomes and polymer–anticancer drug conjugates are now being evaluated, whilst pro-drug design is rapidly expanding.

The next sections relate more directly to clinical issues, with several chapters taking into account that newer agents may be non-cytotoxic, thus requiring innovative trial design and means of assessing biological activities. These factors will also need to be considered in future pharmacokinetic/pharmacodynamic studies. As a non-mathematician I found the review of recent innovations in statistical methodologies (Chapter 25) both readable and informative. The next chapters dealing with specific issues relating to the elderly, quality of life and supportive care are aspects receiving more of the attention they deserve, and it is interesting to see their inclusion in this volume. The penultimate chapter on Cancer vaccines is well presented, but appears rather out of place sandwiched between supportive care and Licensure issues! It is though encouraging to find aspects relevant to both the USA and to Europe in this closing chapter.

Overall, I am pleased to have had the opportunity of reading and reviewing this volume. I can recommend selected chapters to those working in Oncology Research and Development to extend their knowledge into areas outside of their specific expertise, since we all need to work as a coordinated team of investigators to optimize the research and development of the next generation of anticancer drugs.

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