

Book Review:

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**“New Anti-cancer Drugs and Therapeutic
Strategies in Oncology” (in Czech)**

**Grada Publishing, Prague 2010, 210 pp.,
53 figures and 12 tables**

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To begin with, let it be emphasized that the work under review is outstanding. The authors, a highly erudite clinical oncologist and a talented young experimental oncologist with a very good command of the methodology of molecular biology, have joined to write a book wherein the practical and theoretical aspects of contemporary oncology have been perfectly integrated. Besides their father-son relationship, the authors share the style of thinking which has been brought in by the gradual shift of modern medicine to the molecular level. They have also adopted the language which the new style of thinking requires. A work has thus come out that probably does not have an analogy in the contemporary Czech medical literature. Moreover, the reviewer is not aware of any comparable foreign publication, which could have served to the authors as a model. He thus considers the work to be unique both in its concept and its content.

The book consists of two parts: a more extensive general and a much shorter special part. The general part lists 11 chapters which, consecutively, are concerned with the prevention of cancer, with chemotherapy conventional and non-conventional (where the authors include epigenetic and photodynamic therapy and interventions that induce differentiation of the tumour cells), with hormonal therapy, immunotherapy (which, in two separate chapters, contains – so to say – classical immunotherapy and treatment with monoclonal antibodies), targeted therapy (again divided into two chapters: therapy aimed directly at tumour cells and that whose object is the microenvironment of tumours) and finally gene therapy, which is only recently being born. Considerable attention is paid to the two major drawbacks of chemotherapy, viz. toxicity of the substances being used and consequential resistance forming, and the endeavours to overcome these problems.

Each chapter begins with a well-informed introduction which, on the basis of recent findings concerning the biology of cancer cells, describes and substantiates the mechanisms responsible for the effectiveness of the different types of therapy. From a didactic point of view, these are probably the most valuable parts of the book. Several pages always describe the essence of the processes that are responsible of the malignant phenotype or that condition the growth of the tumours and their ability to metastasize, and that are the target of therapeutic intervention. The chapters on apoptosis, neoangiogenesis and on monoclonal antibodies may be adduced as good examples. Several passages discuss the relations between the regeneration, proliferation and differentiation of cells and emphasize their interconnection regardless of the variety of the molecular mechanisms involved. The data on the molecular events are presented in such a way as to disclose their relevance for clinical practice. An outstanding addition to the text are the illustrative figures that describe the sequence of the events whose realization is a precondition of the various effects, or vividly explain a variety of terms and concepts. Their inclusion in the form presented is definitely an asset. The schemes tellingly acquaint even the not very well informed reader with the molecular and cellular mechanisms involved. The figures are artistically well performed, efficiently

arranged, and are very colourful, all of which makes it easy for the reader to understand the authors' intention. They are something we have so far only been admiring in monographs and text books published abroad in large editions, which facilitates investment in text supplements of this kind.

The second, special part of the book follows in its structure the arrangement of the general part. The principles described and classified in the first part of the book acquire concrete forms in the names of the drugs and in the characterization of their effects. These data are supplemented with information on their pharmacokinetics, manner of administration and dosage, interaction with other drugs, and possible undesirable side effects. Furthermore, the producers' names of the drugs and data on their registration in the EU and the USA are given. This noteworthy body of information is supplemented with data about drugs that are at the stage of development and that may or may not appear on the market in the next few years. This part also contains descriptions of new, hopeful strategies, such as immunotherapy and gene therapy of cancers, which are very likely to enter clinical practice in the not very distant future, not as a substitute for the contemporary therapeutic modalities but as an important supplement. The data on the different categories of drugs are supplemented by references to the first part of the book and the documentation contained therein, which allows the reflective person to easily interconnect the two levels of information.

So far, no extensive scientific monograph has been written which is devoid of any, even petty, inaccuracies. The book under review is not an exception. However, considering its size and coverage, it has – as far as the reviewer is able to judge it – incredibly few of them. This also is evidence of the great care of the authors.

The reviewer evaluates the book very positively, not only because of the amount of information contained in it and their masterly arrangement, but also with regard to its overall conception, which makes it highly inspirational. The philosophy of the book is certain to influence its readers' thinking. For it not only informs about the present state of cancer therapy, but also depicts it as a continual process, indicating the ways along which it is going on and the stimuli which are determining the speed of this onward motion. The authors point out that these stimuli are: the continual advances in knowledge about tumour biology – not only the biology of tumour cells as such, but also the knowledge of the multiple roles played by tumour microenvironment, the gradual recognition of the interactions going on between the tumour and the immune system of the host, progress in genomics and proteomics, as well as the advances in bioinformatics. The readers are thus invited to prepare themselves for future innovations in the contemporary strategies. The reviewer has no doubt that the book will be embraced by clinical oncologists, but also that it will give stimuli to those working in basic oncological research. They will realize that some of the ideas they cherished before delving into the book require correction and that some of the conceptions they have considered to be indisputable will have to be thought over again.