MOLECULAR ASPECTS OF ANTICANCER DRUG–DNA INTERACTIONS

Volume 2

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MACMILLAN

Softcover reprint of the hardcover 1st edition 1994

First published 1994 by
THE MACMILLAN PRESS LTD
Houndmills, Basingstoke, Hampshire RG21 2XS
and London
Companies and representatives
throughout the world

ISBN 978-1-349-13332-1 ISBN 978-1-349-13330-7 (eBook)
DOI 10.1007/978-1-349-13330-7
ISSN 0265–4377

A catalogue record for this book is available
from the British Library

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Preface

DNA has long been a key target for cancer chemotherapy. Indeed, the first agents to be employed clinically in the treatment of human cancer (the nitrogen mustards) are DNA cross-linking agents. Spectacular advances have occurred during recent years in the treatment of childhood leukaemia and testicular cancer, largely as a result of the development of better DNA-interactive agents. Even though the majority of solid tumours remain resistant to chemotherapy, there is real promise that a new, third-generation of platinum compounds will prove successful in the treatment of ovarian cancer. Clinical advances in such key areas are the ultimate objective of much current research in cancer chemotherapy and biology. Future progress must surely result from wise application of the large body of fundamental knowledge being accumulated from studies in a whole range of disciplines. No one doubts that clinical success will increasingly depend upon the exploitation of such knowledge and on the interplay between it and more applied disciplines. This is especially important as the molecular and cellular bases of malignant cell growth become better understood. So the study of drug–DNA interactions has moved on from the position of a dozen years ago, when our understanding of the molecular basis of drug action was relatively poor, as were the prospects for rational design of new drugs, to a much more positive position with new horizons.

These two volumes survey our current knowledge about the mode of action of the major classes of DNA-interactive antitumour agents, and in so doing provide pointers for the discovery of new therapeutic substances. The reader will notice that certain related topics have been grouped together; indeed in one instance (that of topoisomerase inhibitors), what were originally planned as two separate chapters by different authors have been amalgamated into one (by mutual consent!) so as to produce a more balanced and co-ordinated treatment. Elsewhere the

relationships between topics may be less obvious, but we hope that our choices will stimulate cross-fertilization of ideas.

An enterprise involving many authors such as this requires the cooperation of all the contributors if it is to succeed. We are grateful to everyone for their efforts in ensuring delivery of their manuscripts promptly and for making our task as editors such a pleasurable one. Both of us are indebted to the Cancer Research Campaign for supporting work on drug–DNA interactions in our own laboratories over a number of years. To the hard-working staff of the Campaign, as well as to those who devote their lives to the alleviation of cancer at the bedside and in the laboratory, we dedicate this pair of volumes.

Sutton and Cambridge, 1993

S. N.
M. W.