

# Introduction to Oncogenes and Molecular Cancer Medicine

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Dennis W. Ross, M.D., Ph.D.  
Department of Pathology  
Forsyth Medical Center  
Winston-Salem, NC 27103

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With 47 Illustrations



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Dennis W. Ross, M.D., Ph.D.  
Department of Pathology  
Forsyth Medical Center  
3333 Silas Creek Parkway  
Winston-Salem, NC 27103  
USA

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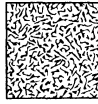
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This book  
is dedicated to cancer patients  
and to the renewed hope for the future  
brought about by DNA technology.



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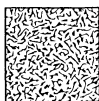
## Preface

The purpose of this book is to explore oncogenes and the current view of cancer as a molecular disease. I assume that you, the reader, have no specialized knowledge of molecular biology. Oncogenes are not a difficult subject, but they are new. Sometimes new ideas need to be considered several times from different points of view before they sink in. The basic principles of oncogenes and the molecular biology of cancer are explained first. Then clinical examples are used to demonstrate how our knowledge of the molecular basis of cancer improves diagnosis and treatment now, with promise for greater advances in the near future. The clinical examples in the second part of this book repeat and amplify the explanation of basic principles begun in the first part. Thus, Chapter 2 contains an explanation of how a dividing cell must pass through a checkpoint in the division cycle just before starting DNA synthesis. In Chapter 8, this concept is reexplored when we see how loss of tumor suppressor gene function in colon cancer removes this checkpoint. Mutated cells that should be stopped are allowed to divide; the result is a tumor. You may want to look at Table 11.1 right now. Ask yourself, “Do I understand the ideas and genetic mechanisms that are the basis for new molecular cancer therapies as listed in that table?” You will by the time you reach the end of this book!

Far from being all-inclusive, this book is a primer and hopefully a catalyst for your interest. My previous book, *Introduction to Molecular Medicine* (2nd ed. NY: Springer; 1996), covers other aspects of molecular biology applied to medicine, such as infectious and metabolic diseases. I also write a column, “Advances in the Science of Pathology,” that appears in the *Archives of Pathology and Laboratory Medicine*. My writing and medical school teaching has convinced me that the best way to learn is to develop an interest and to have fun. Therefore the overriding style of this book is a travel guide where you and I are going on a short, fun, and adventurous trip.

As a guide, a glossary of key terms appears at the end of the book. These terms are printed in boldface when they first appear in the text. A short bibliography of pertinent references and suggested further reading appears at the end of each chapter. Some of these references are Web sites. Molecular biology lives on the Internet. It is a modern, fast-paced field in which young investigators type their newly discovered gene sequences into computer databases every night. Let's begin our trip.

Dennis W. Ross  
Winston-Salem, North Carolina  
June 1998



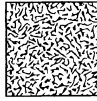
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Dennis W. Ross  
Winston-Salem, North Carolina  
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# Contents

Preface .....	vii
Acknowledgments .....	ix

## *Part I Basic Principles of Molecular Biology*

1 Molecular Biology of Cells .....	3
Overview: What Is a Gene? • The Human Genome—Physical Structure • The Human Genome—Information Content • Anatomy of a Gene • Basic Genetics • Summary • References	
2 Cell Growth and Senescence .....	17
Overview • Cell Culture Model • Cell Cycle • DNA Synthesis • DNA Repair • Checkpoints • Apoptosis • Aging—An Aside • Summary • References	
3 Oncogenes: Control of Cell Growth and Senescence .....	29
Overview • Analogy: The Registrar’s Mutation • Proto-Oncogene Functions • Oncogenes and Clonal Proliferation • Mutations that Convert Proto-Oncogenes to Oncogenes • Genetic Structure of Oncogenes • Summary • References	
4 Tumor Suppressor Genes .....	45
Overview • Genetics of Tumor Suppressor Genes and Loss of Heterozygosity (LOH) • Function of Tumor Suppressor Genes • Summary • References	

5 Multiple Steps in the Molecular Causes of Cancer . . . . . 57

Overview • Carcinogenesis • Chemoprotection from Cancer •  
Angiogenesis • Tissue Invasion and Metastasis • Tumor Immunology • The Complexity of the Immune System—An  
Aside • Summary of Part I (Chapters 1–5) • References

*PART II Clinical Examples of Molecular Oncology*

6 Molecular Diagnostics . . . . . 75

Overview • Scale of Damage to DNA • Cytometry •  
Chromosome Analysis • Gene Probes • Summary • References

7 Leukemia and Lymphoma . . . . . 95

Overview • Molecular Evolution of a Leukemia •  
Similar Molecular Events in Three Types of Lymphoma •  
Summary • References

8 Colon Cancer . . . . . 111

Overview • Hereditary Colon Cancer • Molecular Evolution  
of Colon Cancer • Carcinogenesis and Colon Cancer • Screening  
and Early Detection • Molecular Staging • Molecular Therapies •  
Summary • References

9 Squamous Cell Carcinoma of the Uterine Cervix . . . . . 123

Overview • Cytologic Progression of Cervical Cancer •  
Molecular Biology of Human Papilloma Virus (HPV) and Cervical  
Cancer • Summary • References

10 Breast Cancer . . . . . 135

Overview • Molecular Pathology • Staging and Multiple Prognostic  
Factors • Breast Cancer “Field Effect”—A Special Problem •  
Breast Cancer Susceptibility Genes • Summary • References

11 Molecular Anticancer Therapies . . . . . 145

Overview • Molecular Targets in Cancer • Antisense Oligo-  
nucleotides • Immune Mediated Therapy • Infectious Vaccines—  
An Aside • Genetic Engineering • Summary • References •

Conclusions . . . . . 157

Glossary . . . . . 159

Index . . . . . 165