
Preface

The application of modern methods in molecular biology and biotechnology to the study of human, animal, and plant viruses continues to revitalize the age-old discipline of virology. Modern virology remains at the vanguard of contemporary biomedical research largely owing to the impact of viruses in human disease and pathogenesis, but also because of the utility of viruses as model systems for investigation of basic biological processes. *DNA Viruses: Methods and Protocols* describes innovative approaches to solving important problems in modern virology and also provides methodologies that can equally be applied to numerous other biological systems. Since virology, like cell biology, covers a vast expanse of methodological approaches, it is virtually impossible to cover all aspects of this dynamic field. The scope of the book is limited to DNA viruses, and it includes only a small sample of the many exciting methodological innovations of the last few years. This book does not include any specific applications to RNA viruses, but some of the methods describe techniques that have general applications to RNA viruses, as well as to cell biology.

In *DNA Viruses: Methods and Protocols* I have tried to include a sample of exciting advances in what I see as the major areas of DNA virology today. The methods presented here are representative of, but do not exhaust, the many important contributions to this field. I have divided the book into nine parts that include: viral detection, structure, entry, gene expression, replication, pathogenesis, complex cellular models, and recombinant genetics, with the addition of computational/systems approaches toward virology. Some of these divisions are arbitrary and have obvious overlaps. Nevertheless, I thought it useful to divide this volume into sections to emphasize the various methodological approaches as they are applied to important questions in virology.

Although *DNA Viruses: Methods and Protocols* attempts to cover numerous aspects of modern virology, it is apparent that many significant methodological advances have not been included. I ask those readers who would have preferred either a more focused or a more comprehensive volume to understand the book's constraints, and those authors who should have been asked to contribute to accept my apology for the oversight. Regardless of these obvious limits, I hope you find this book of interest and value in your experimental molecular biology pursuits.

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<http://www.springer.com/978-1-58829-353-4>

DNA Viruses

Methods and Protocols

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2005, XIV, 498 p., Hardcover

ISBN: 978-1-58829-353-4

A product of Humana Press