
Preface

Since their discovery in 1954, adenoviruses (Ads) have become a model for studying virology, as well as molecular and cellular biology. Ads are easily grown and manipulated, stable, and versatile. Ads replicate reproducibly, can transform rodent cells to an oncogenic state, can induce tumors in certain animals, and have been instrumental in defining key cellular proteins and mechanisms such as splicing, transcriptional regulation through transcription adaptor proteins, and regulation of cell division and apoptosis. About half of the approximately 35 Ad proteins physically interact with cellular proteins and subvert them for use by the virus. In recent years, Ads have become premier tools in vector technology and in experimental gene therapy research.

The *Adenovirus Methods and Protocols* volumes are designed to help new researchers to conduct studies involving Ads and to help established researchers to branch into new areas. The chapters, which are written by prominent investigators, provide a brief general introduction to a topic, followed by tried and true step-by-step methods pertinent to the subject. We thank returning contributors for their updated and new chapters, and thank new contributors who have expanded the content of this book.

Adenovirus Methods and Protocols, Second Edition, Volume 2: Ad Proteins, RNA, Lifecycle, Host Interactions, and Phylogenetics, focuses on methods that elucidate and quantitate the interactions of Ad with the host. This volume provides methods for analysis of transcription, splicing, RNA interference, sub-cellular localization of proteins during infection, and cell cycle effects. Four chapters are devoted to definition of interactions of viral and cellular proteins (by co-immunoprecipitation or tandem mass spectrometry) or protein interactions with viral DNA (by chromatin immunoprecipitation and electrophoretic mobility shift assays). Other chapters provide thorough descriptions of the use of microinjection procedures, transformation assays, and NK cell-mediated cytolysis. Several chapters describe characterization of specific Ad proteins (hexon, fiber, or protease/proteinase). Two chapters are devoted to defining the phylogenetic relationships of Ads.

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