Adenovirus Methods and Protocols

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Edited by

William S. M. Wold

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Preface

Since their discovery in 1954, adenoviruses (Ads) have become a premier and prolific model for studying cell biology. Ads are benign to the researcher, easy to grow and manipulate, stable, versatile, and extremely interesting. Not only do they replicate reproducibly, but they also can transform cells to an oncogenic state. About half of the ~40 Ad proteins physically interact with key cellular proteins and subvert them for use by the virus. Many of these proteins or mechanisms have been discovered and/or elucidated through Ad research. Examples include splicing, transcription regulation through transcription factors such as E2F, p53, and transcriptional adaptor proteins (p300/CBP, pRB, and family members), and regulation of apoptosis. Ads and retroviruses have launched experimental gene therapy.

Adenovirus Methods and Protocols is 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 background to a topic, followed by tried and true step-by-step methods pertinent to the subject. Most aspects of current Ad research are covered. The first seven chapters describe how to grow and titer Ads, and how to construct specific alterations in the Ad genome. This is followed by five chapters detailing how to measure apoptosis induced by cells of the immune system, cytokines, and intrinsic apoptosis effectors. Next come in vitro systems to study transcription and splicing. Chapters 18–25 deal with specialized topics.

I thank the contributors for sharing their secrets, John Walker for his patience, and especially Jayma Mikes, without whose expert assistance this work would not have been possible.

William S. M. Wold

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