
Preface

The 36 years since the identification of hepatitis B virus (HBV) in 1967 has seen the establishment of HBV virology as a rich and extensive field of science and the recognition of HBV as one of the top 10 leading causes of death in the world. There are an estimated 400 million people chronically infected with HBV worldwide with 20–30% of these projected to die from complications of chronic liver disease, including cirrhosis and liver cancer. Hepatitis delta virus (HDV) was first identified in 1980 as a novel transmissible agent distinct from HBV that requires the HBV envelope protein for its infectivity. HDV co-infection in chronic HBV patients is associated with a more severe disease outcome than those not co-infected. HBV and HDV infections represent a significant health burden to the worldwide community.

Despite the lack of an inflexible cell culture system, an enormous amount of information has been obtained on the virology and immunology of HBV and HDV infections. Modern molecular biological techniques and research with related viruses have enabled much of the HBV and HDV life cycle to be elucidated, leading to a number of therapeutic approaches for treating chronically infected patients. Innovative detection methods based on these findings and techniques have led to diagnostic and clinical monitoring assays of increasing sensitivity. However, our understanding of the viral life cycle and virus–host interactions is incomplete and will require much more research for a complete comprehension of the pathogenesis of disease caused by viral infection. Hepatitis B and D Protocols contains a collection of research techniques, divided into two volumes, used in the study of HBV and HDV. The authors represent a number of scientific disciplines, but share in common their interest in hepatitis research and their expertise in their respective areas. Although most of these techniques have been described in peer-reviewed journals, these chapters provide far more detail and are written so that investigators can use them as manuals. A few reviews are included in some specialized areas such as antiviral testing and the design of clinical trials. We hope that this compilation of techniques used in the different areas of HBV and HDV research will prove useful to scientists and encourage multidisciplinary approaches to their research, so that clinical investigators will find it beneficial for their understanding of the current HBV and HDV research.

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