

Preface

Hepatitis C has long been regarded as the ‘silent epidemic’. Although there is some truth in this statement that reflects the mostly asymptomatic course of infection and the low perception of the disease in the general public, the situation has changed profoundly in the last couple of years. On one hand this is due to the increasing awareness of chronic hepatitis C, especially as improved therapy options become available and are announced in press releases; on the other hand enormous progress has been made in our understanding of the molecular and cellular biology of the hepatitis C virus (HCV), which starts to put HCV into the position of a role model for many other, especially plus-strand RNA viruses. In these respects, the history of hepatitis C is a success story, which started in 1989 with the first molecular clone of the HCV genome and culminated in the approval of the first in class selective antiviral therapy in 2011, which increased cure rates substantially; and this is not the end of the story as further improved antiviral therapeutics will become available soon, most likely curing the majority of HCV-infected individuals.

Advances in HCV-specific therapy are tightly linked to progress made in basic research that lead to the establishment of robust and easy to handle cell culture systems and unravelled the basic principles of the HCV replication cycle. Given this tremendous advancement, the time was ripe to put together a book dealing with the multiple aspects of the viral replication cycle, the interaction of HCV with the host cell, the viral countermeasures to overcome innate and adaptive immune responses, the development of antiviral therapies and their implementation into daily clinical practice. Moreover, the recent identification of HCV-related genomes in dogs and horses raises speculations on the possible origin of HCV and its penetration into the human population.

To cover these different aspects, I had the privilege to gather a group of distinguished colleagues and leaders in the HCV field, who inspite of their busy schedule accepted the invitation to contribute book chapters. In this way it became possible to generate a comprehensive and very timely overview of the multiple facets of HCV and hepatitis C. Clearly, the focus of this book is on the molecular and cellular principles underlying the viral replication cycle. Nevertheless, the book would have been incomplete without proper description of the cell biology of virus–host interaction, which includes immune responses as well as

HCV-associated pathogenesis. Finally, most of these discoveries were inevitably linked to the development of cell culture and animal models that also provided essential tools for drug discovery.

I want to thank all the authors for their excellent contributions, their tremendous efforts, and great support. In addition, I want to thank the members in my laboratory, who provided valuable help in reading and editing individual chapters. Without this support, the book would not have become reality. On a final note, I very much hope that the reader will find this book a valuable source of information about HCV and enjoys reading the chapters as much as I did.

Ralf Bartenschlager

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