

Subcellular Biochemistry

Volume 15

Virally Infected Cells

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Volume **15**

Virally Infected Cells

Edited by

J. R. Harris

*North East Thames Regional Transfusion Centre
Brentwood, Essex, England*

PLENUM PRESS • NEW YORK AND LONDON

The Library of Congress cataloged the first volume of this title as follows:

Sub-cellular biochemistry.

London, New York, Plenum Press.

v. illus. 23 cm. quarterly.

Began with Sept. 1971 issue. Cf. New serial titles.

1. Cytochemistry -- Periodicals. 2. Cell organelles -- Periodicals.

QH611.S84

574.8'76

73-643479

ISBN 0-306-43138-6

This series is a continuation of the journal *Sub-Cellular Biochemistry*,
Volumes 1 to 4 of which were published quarterly from 1972 to 1975

© 1989 Plenum Press, New York

A Division of Plenum Publishing Corporation

233 Spring Street, New York, N.Y. 10013

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Printed in the United States of America

Subcellular Biochemistry

Volume 15

Virally Infected Cells

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Preface

Cellular virology has made tremendous advances in the past decade due to the availability and application of new immunological techniques together with the vast range of biochemical techniques and the continued impact of transmission electron microscopy. The chapters contained in this volume provide significant coverage of the subject of cellular virology as a whole. Considerable overall emphasis is placed upon the membrane biochemistry of viral proteins and glycoproteins within the infected cell.

In the opening chapter Edouard Kurstak and his colleagues provide a useful survey on the detection of viral antigens and antibodies by immunoassays. This chapter, with its emphasis on the important role of immunology in present-day virology, sets the scene for the volume. Following this is an exciting presentation from Stefan Höglund and his colleagues on ISCOMs and immunostimulation with viral antigens. This unique approach is already proving to be of value, particularly in animal virology. A somewhat pharmacological diversion appears in Chapter 3, by Kazukiyo Onodera and his colleagues, in which the biological activity of the damavaricin C derivatives is discussed. This chapter provides a link between the biochemical and the chemotherapeutic approach in cellular virology. Yet another specialist area is covered in Chapter 4 by Otto Schmidt and Imke Schuchmann-Feddersen, who discuss the role of virus-like particles in parasite-host interactions of insects. Contributing a strong biomedical emphasis to the volume is the provocative chapter by Abraham Karpas on human leukemia and retroviruses. Along more fundamental biochemical lines is the chapter by Thomas Albrecht and his colleagues, who present a detailed account of cell activation responses to cytomegalovirus infection; indeed, this chapter contains an impressive combination of ultrastructural and biochemical data. Scott Bowden and E. G. Westaway have written an assessment of rubella virus products and their distribution in infected cells that contains a good combination of biochemistry, immunofluorescence microscopy, and transmission electron microscopy. In a similar vein, Bryan Eaton and Alex Hyatt present a survey of the association of bluetongue virus with the cytoskeleton. In this instance, much greater emphasis is placed upon the ultrastructural aspects that have been so very

important for the expansion of knowledge of cytoskeletal structure and of the nuclear matrix and nuclear structure. The ultrastructural approach also receives considerable attention in the chapter by Tatsuo Hase and his colleagues, who deal with the morphogenesis of flaviviruses.

The three remaining chapters, one by Heiner Niemann and colleagues on signals for membrane-associated transport in eukaryotic cells, one by Hannele Sareneva and Marja Makarow on membrane biology in yeast as probed with enveloped viruses, and one by Hisatoshi Shida on vaccinia virus hemagglutinin, form a group of chapters that complement one another rather well. A strong biochemical and molecular biological emphasis runs throughout these three chapters, which nicely redresses the imbalance, the ultrastructural approach having been somewhat more dominant in a number of the earlier chapters.

Overall, the combination of high-quality biochemical, immunological, and ultrastructural data that is presented in this volume provides a unique insight into current research on virally infected cells. By bringing together these exciting specialized, yet related, contributions on cellular virology, this volume continues the new theme of the *Subcellular Biochemistry* series that was established earlier in Volume 12. It is hoped that this book will prove to be of value and interest to both biochemists and virologists and to those who are working in other areas and wish to update their knowledge of current progress in cellular virology.

Robin Harris

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