

Vaccines

Recent Trends and Progress

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Vaccines

Recent Trends and Progress

Edited by

Gregory Gregoriadis

School of Pharmacy
University of London
London, United Kingdom

Anthony C. Allison

Syntex Research
Palo Alto, California

and

George Poste

SmithKline Beecham Pharmaceuticals
King of Prussia, Pennsylvania

Springer Science+Business Media, LLC

Proceedings of a NATO Advanced Study Institute
on Vaccines: Recent Trends and Progress,
held June 24–July 5, 1990,
at Cape Sounion Beach, Greece

Library of Congress Cataloging in Publication Data

NATO Advanced Study Institute on Vaccines: Recent Trends and Progress (1990:
Akra Sounion, Greece)

Vaccines: recent trends and progress / edited by Gregory Gregoriadis, Anthony C. Allison, and George Poste.

p. cm.—(NATO ASI series. Series A, Life sciences; v. 214)

“Proceedings of a NATO Advanced Study Institute on Vaccines: Recent Trends and Progress, held June 24–July 5, 1990, at Cape Sounion Beach, Greece”—T.p. verso.

“Published in cooperation with NATO Scientific Affairs Division.”

Includes bibliographical references and index.

ISBN 978-1-4613-6717-8 ISBN 978-1-4615-3848-6 (eBook)

DOI 10.1007/978-1-4615-3848-6

1. Vaccines—Congresses. I. Gregoriadis, Gregory. II. Allison, Anthony C. (Anthony Clifford), 1925– . III. Poste, George. IV. North Atlantic Treaty Organization. Scientific Affairs Division. V. Title. VI. Series.

[DNLN: 1. Vaccines—congresses. QW 805 N279v 1990]

QR189.N37 1990

615/372—dc20

DNLN/DLC

for Library of Congress

91-29190

CIP

ISBN 978-1-4613-6717-8

© 1991 Springer Science+Business Media New York

Originally published by Plenum Press, New York in 1991

Softcover reprint of the hardcover 1st edition 1991

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PREFACE

The success of vaccination in controlling infectious diseases is well documented. However, low profitability, expense and liability have hindered research and development of vaccines. Recently, increasing realization (enhanced by the AIDS pandemic) of the need to overcome such difficulties has led to steps being taken by national authorities, non-profit and commercial organizations to resolve them. This has been facilitated by developments in recombinant DNA techniques, the advent of monoclonal antibodies and progress in the understanding of the immunological structure of proteins which have laid the foundation of a new generation of vaccines. Such vaccines are defined at the molecular level, can elicit immune responses controlling infectious organisms and are therefore potentially free of the problems encountered in conventional ones. Unfortunately, subunit and synthetic peptide vaccines are often only weakly or non-immunogenic. However, developments in both antigen production and immunopotentialiation of weak antigens have opened new avenues with exciting prospects for vaccine design.

This book contains the proceedings of the 2nd NATO Advanced Studies Institute "Vaccines: Recent Trends and Progress" held in Cape Sounion Beach, Greece, during 24 June-5 July, 1990. It deals with the mechanism of induction of immunity and the role of antigen presenting cells and mediators, a variety of approaches to immunopotentialiation including the use of new generation immunological adjuvants, as well as accounts of the experimental and clinical applications of new vaccines. We express our appreciation to Professors K. Dalsgaard, J.H.L. Playfair and H. Snippe for their advice in the planning of the ASI and to Mrs. Janet Abel for her help with the practical aspects of it. We are also grateful to Mrs. Susan Gregoriadis for her invaluable input in the editing of the book. The ASI was held under the sponsorship of NATO Scientific Affairs Division and generously co-sponsored by SmithKline Beecham Pharmaceuticals (Philadelphia). Financial assistance was also provided by Merck and Co. Inc. (West Point), Syntex Research Inc. (Palo Alto), Intervet International B.V. (Boxmeer), Boehringer Mannheim GmbH (Tutzing/Obb), Biogen (Cambridge, MA), SmithKline Biologicals (Rixensart), Connaught Laboratories Ltd. (Willowdale), Superfos Biosector A/S (Vedbaek) and Wyeth Ayerst Research (Philadelphia).

June 1991

Gregory Gregoriadis
Anthony C. Allison
George Poste

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