

THE FUNCTIONING CYTOPLASM

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PLENUM PRESS • NEW YORK AND LONDON

Library of Congress Cataloging in Publication Data

Bulger, Ruth Ellen.

The functioning cytoplasm.

Includes bibliographies.

1. Cytology. 2. Cell physiology. I. Strum, Judy May, joint author. II. Title. [DNLM: 1. Cytology. 2. Cytoplasm—Physiology. QH591 B933f 1973] QH581.2.B84 574.8'7 73-7570

© 1974 Plenum Press, New York

Softcover reprint of the hardcover 1st edition 1974

A Division of Plenum Publishing Corporation

227 West 17th Street, New York, N.Y. 10011

United Kingdom edition published by Plenum Press, London

A Division of Plenum Publishing Company, Ltd.

4a Lower John Street, London, W1R 3PD, England

ISBN-13: 978-1-4615-8719-4 e-ISBN-13: 978-1-4615-8717-0

DOI: 10.1007/978-1-4615-8717-0

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PREFACE

This book was not written for contemporary scientists with a major interest in cell biology. Rather, it was prepared for the serious and inquiring student who may or may not have had an extensive background in the sciences but who is interested in exploring or reviewing in depth the current body of knowledge about cellular structure and function. We have tried to convey a sense of the expectant excitement that characterizes the modern-day cellular biologist and we regret any scientific jargon that may have crept into the text as a result of this effort.

We have selected and assimilated experiments done by numerous scientists and have used them to explain how cells work. In doing this, we have concentrated on animal cells because we know more about them. We have come to a deeper appreciation, while preparing this book, of the limitations in understanding the inner workings of the cell and have come to realize more than ever that we are, in these matters, still “looking through a glass darkly.”

An explosively increasing body of knowledge about the cell and its organelles has become available through the diligent work of numerous biologists. Thus it is impractical to attempt to credit each of these scientists for all of their important contributions: The listed references are neither exhaustive nor are they necessarily the first report of a finding. Instead, references have been chosen to serve as reviews to which the interested student may turn. We apologize to all those slighted scientists whose names we have not cited and wish to make it clear that none of the important studies upon which this book is based was done by us, and hence all statements should be referenced. A truly complete bibliography would therefore yield a text referenced to the point of becoming unreadable by any student.

The authors wish to thank Mrs. Carlotta Roach for preparing all the photographs used in the text as well as for her many other services, the University of Washington Pathology Electron Microscope technicians for their technical assistance in preparing specimens for electron microscopy, Miss Virginia Wejak for typing the many stages of this manuscript, and Miss Leslie Caldwell and Joseph Ewing for taking many of the pictures

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used in Chapter I. We also wish to thank Miss Pat Phelps, Dr. C. Craig Tisher, Dr. Roger Bulger, Dr. Daniel Friend, Dr. Peter Satir, and Dr. Richard Sagebiel for reading the manuscript and providing helpful suggestions. Finally, we would like to thank Dr. Anita Hendrickson, Miss Mary Cahill, Mrs. Carlotta Roach, Dr. Douglas Kelly, Dr. Daniel Friend, Dr. James Koehler, Dr. Fred Silverblatt, Dr. T. L. Hayes, Dr. John Gilbert, Dr. Guido Tytgat, and Dr. Morris J. Karnovsky for allowing us to use their beautiful electron micrographs.

The reader will note that all diagrammatic figures appear near their references in the text but that all halftone figures (including, for example, all the electron micrographs) appear together following page 56.

The research of the authors has been supported in part by NIH grants AM-10922 and Career Development Award K04-AM-9878.