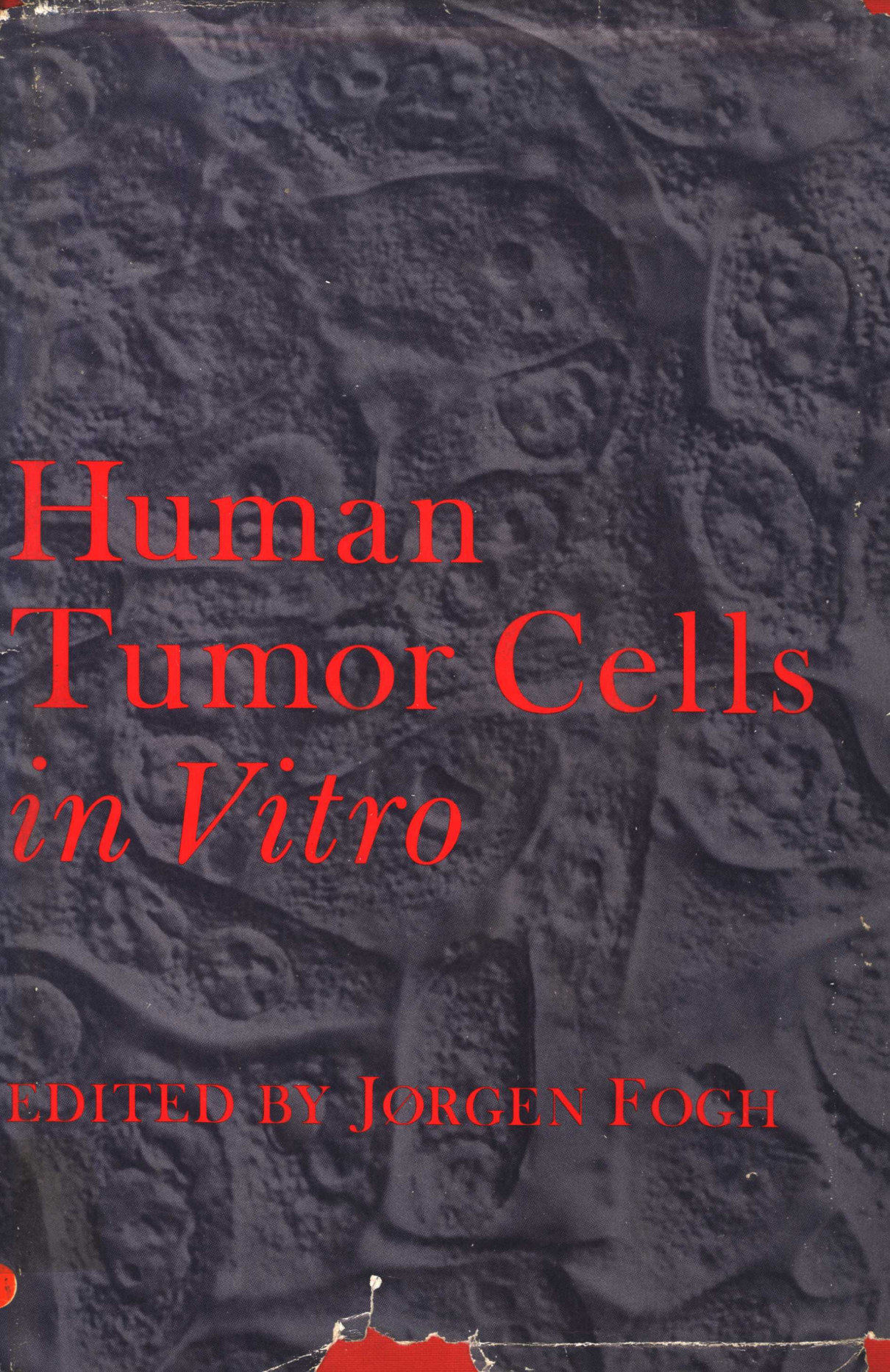


A dark, high-contrast microscopic image of human tumor cells in vitro, showing various cell shapes and textures. The image serves as the background for the book cover.

Human Tumor Cells *in Vitro*

EDITED BY JØRGEN FOGH

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Donald S. Walker Laboratory
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Human
Tumor Cells
in Vitro

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Preface

The study of cultured human tumor cells is a most obvious approach in experimental human cancer research. For many techniques in virology, immunology, biochemistry, and biophysics, for example, large amounts of cells may be required and such quantities are usually provided only when the cultures develop into established cell lines; when this happens, thorough characterization also becomes possible. The development of cell lines, therefore, is of prime importance. Recent major advances in research with animal cell systems seem to be a prologue for present and future efforts directed toward work with human tumor cells in culture. Conceivably, the most significant results in cancer research may develop from work with such cells, and so the time seemed right to define the present state of our knowledge. This is the first book dedicated exclusively to the subject: human tumor cells *in vitro*. Although some of the fundamental aspects in the cultivation of human tumor cells, and the extent to which they represent human cancer *in vivo* are still unclear, I asked a number of the leading investigators in this area of research to collect and evaluate previous and present contributions, and to offer their thoughts on the questions to which answers are not yet available.

Many of the chapters are concerned with techniques of cultivation. Cultures from some types of tumors have grown well; in many cases they have given rise to established cell lines. Other types have shown less encouraging results, and there are still tumors which are not represented as cell lines. Although many tumor cell lines have become available, considering the numerous attempts, success has usually been the exception.

Some of the problems faced daily in the tissue culture laboratory may seem trivial. For example, are the cells we observe in early cultures actually

the tumor cells, or are they derived from other cells of the tumor tissue? Contamination with extraneous cells is known to occur in work with established cell lines. Unfortunately, there is evidence that many investigations have been carried out without proper attention to such problems. This book contains information about new and old methods for monitoring and evaluation of the cultured cells as to malignancy and confirmation of origin. Other chapters are oriented more toward explorative research approaches employing human tumor cells, for example, search for causative viruses.

If future trends in cancer research will be toward further exploration of human tumor cell systems as model systems for human cancer, and toward greater attention to cell characterization, the efforts that have gone into this book will not have been needless. I am grateful to all the contributors and to the staff of Plenum Publishing, Inc. A special thanks to Shirley DeVore and Gwendolyn Holmes for their work in attending to the many details of the book and to the preparation of the list of published cell lines established from human tumors.

Rye, New York

Jørgen Fogh

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