Techniques in Somatic Cell Genetics

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Preface

Somatic cell genetics is an exciting and rapidly expanding field of research. Since descriptions of the major experimental techniques in the field are scattered throughout various journals and other publications, there is a real need for a single reference source for both established investigators and students in the field. In addition, technical reports are frequently abridged such that many researchers are discouraged from attempting to adopt the appropriate methodology. This book, therefore, describes in detail the many recent technical advances in such areas of somatic cell genetics as transfer mediated by liposomes, erythrocyte ghosts, chromosomes, microcells, mitochondria, and isolated nuclear DNA. These techniques have increased our understanding of the organization and regulation of eukaryotic cells.

The production of antibiotic-resistant cell lines and their use in studying cytoplasmic inheritance are also included. Evidence for the cytoplasmic regulation of nuclear gene expression in eukaryotic cells is rapidly accumulating following the characterization of cytoplasmic mutations. The production of nuclear-coded mutations, their use in standard cell hybridization, and recent advances in techniques for fusing whole cells or cell components are also described.

I have not included the rapidly expanding hybridoma field in the scope of the book since this has been the subject of a recent comprehensive review by R. H. Kennett, T. J. McKearn, and K. B. Bechtol (*Monoclonal Antibodies*, Plenum Press, 1980). I would like to thank Kirk Jensen and his colleagues at Plenum Press for their support and Drs. Rosalie Ber and Marguerite Stauver for editorial assistance. Finally, I wish to acknowledge all the contributors without whom this book would not have been possible.

Jerry W. Shay

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