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Nota di contenuto	Introduction --Principles of Cell Hybridization -- Properties and Significance of Monoclonal Antibodies -- Use of Monoclonal Antibodies in Human Beings: Quality Control and Legal Aspects -- Preconditions for Hybridoma Technology -- Experimental Work with Animals -- Equipment of the Cell Culture Laboratory -- Equipment for Immunological and Biochemical Work -- Organization of the Course of Work (Time Table) and Estimation of Costs -- Immunization -- Principles and Strategies for Immunizing Animals -- Choice of the Immunogen -- Immunizing the Larger Experimental Animals for Antisera Production -- Immunizing Mice -- Influencing the Immune Response -- Taking Blood and Isolating Cells -- Taking Blood from Experimental Animals -- Isolating Lymphocytes from Spleen and Lymph Nodes -- Isolating Human Lymphocytes from Peripheral Blood, Tonsils, or Spleen -- Enriching Antigen-Specific Lymphoblasts for Fusion -- Isolating Mouse Peritoneal Macrophages for Use as Feeder Cells -- Cell Culture -- Requirements for Cell Culture -- Additives to Media: Growth Factors, Conditioned Media -- Cryopreservation of Cells -- Bacterial and Fungal Infections -- Limiting an Infection in Multi-Well Plates -- Mycoplasmas -- Cell Viability Testing Using Fluorescent Dyes -- Production of Hybridomas -- Basics -- Fusing Cells to Generate Mouse Monoclonal Antibodies -- Human Hybridoma Technique -- Other Fusion Methods -- Calculating the Number of Hybridoma Clones To Be Expected -- Culture and Enrichment of Hybridomas -- Cloning Cells -- Identifying Human Genomic Material in Mouse-Human Hybridomas --

Fine-Tuning Hybridomas -- Nomenclature of Monoclonal Antibodies -- Mass Production of Monoclonal Antibodies -- Mass Production of Monoclonal Antibodies in Cell Culture or Ascites -- Production of Monoclonal Antibodies in Mice -- Production of Monoclonal Antibodies in Bioreactors -- Serum-Free Cell Culture -- Checking the Antibody Properties -- Purifying Monoclonal Antibodies and Producing Antibody Fragments -- Purification of Monoclonal Antibodies: an Overview -- Producing Immunoreactive Fragments from Mouse Monoclonal Antibodies -- Coupling Monoclonal Antibodies -- Basic Principles -- Conjugation of Enzymes to Monoclonal Antibodies -- Biotinylating Monoclonal Antibodies -- Conjugating Fluorochromes to Monoclonal Antibodies -- Conjugating Monoclonal Antibodies to Solid Phases (Immune Absorption) -- Demonstration of Monoclonal Antibodies -- How To Find the Correct Monoclonal Antibody -- Immunoassays for Soluble Antigens: a Survey -- ELISA for Demonstration of Monoclonal Antibodies Against Soluble Antigens -- Quantitative Tests to Demonstrate the Synthetic Capacity of Hybridoma Cells -- Selection of a Test System for Antibodies Against Cellular Antigens -- Immunofluorescence Demonstration of Cytoplasmic Ig in Fixed Lymphocytes -- Immunofluorescence Demonstration of Membrane Antigens on Living Lymphocytes -- Immunocytochemical Staining Techniques -- Immunocytochemical Demonstration of Membrane Antigens on Living Cells -- ELISA Demonstration of Antigens in Fixed Cells (Cell ELISA) -- Local Demonstration of Specific Antibody -- Dot Immunobinding Test -- Molecular Weight Determination of Membrane Antigens by Means of Chemiluminescence-Autography and Sequential Immunoprecipitation -- Depletion of Cells in Suspension by Use of Particle-Bound Antibodies (Magnetic Particles) -- Typing Class and Subclass (Isotyping) of Mouse Antibodies by Means of ELISA -- Analytical HPLC of Monoclonal Antibodies -- Analytical SDS Polyacrylamide Gel Electrophoresis (SDS-PAGE) -- Analytical Isoelectric Focusing of Monoclonal Antibodies -- Silver Staining of Polyacrylamide Gels -- Protein Blotting, Immunoblotting ("Western Blot") -- Epitope Analysis -- Safety Precautions at Work -- Appendix -- Monographs -- Reference Works for Obtaining Cells, Reagents, and Laboratory Equipment -- Addresses of Firms -- Subject Index.

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### Sommario/riassunto

Monoclonal antibodies are established in clinical practice for the treatment of cancer, and autoimmune and infectious diseases. The first generation of antibodies has been dominated by classical IgG antibodies, however, in the last decade, the field has advanced, and, nowadays, a large proportion of antibodies in development have been engineered. This Special Issue on "Monoclonal Antibodies" includes original manuscripts and reviews covering various aspects related to the discovery, analytical characterization, manufacturing and development of therapeutic and engineered antibodies.

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