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Nota di contenuto	AN INTRODUCTION TO MOLECULAR MEDICINE AND GENE THERAPY; CONTENTS; Preface; Contributors; Chapter 1 Molecular Medicine and Gene Therapy: An Introduction; Introduction; Genetic Manifestations of Molecular Medicine; Gene Therapy and Patterns of Gene Expression; Gene Therapy and Molecular Medicine; Gene Therapy: Current Basic Science Issues; Human Gene Therapy: Current Status and Basic Science Research Needs; Gene Therapies: Next Horizon; Key Concepts; Suggested Readings; Chapter 2 Nuclear Transplantation and New Frontiers in Genetic Molecular Medicine; Background; Introduction Nuclear Transplantation: A Tool in Developmental BiologyTechnical Developments in Nuclear Transplantation; Defining the Limits of Nuclear Reprogramming in Mammals; Toward an Understanding of the Mechanisms of Genetic Reprogramming; Application of Genetic Reprogramming; Human Embryonic Stem Cell Research: An Ethics Note; Summary; Key Concepts; Suggested Readings; Chapter 3 Building a Better Mouse: Genetically Altered Mice as Models for Gene Therapy;

Background; Introduction; Producing Mouse Models of Human Disease; Mouse Models for Gene Therapy: What Makes a Good Model of Human Disease?

Models of Monogenic Disorders; Models of Polygenic and Multifactorial Disorders; Mouse Models of Molecular Therapeutics: Developing and Testing Gene Therapy Methodology; Generation of Chimeric Tissues; Human Cell Xenograft Models in Immunodeficient Mice; Mouse Models: The Next Generation; Key Concepts; Suggested Readings; Chapter 4 Vectors in Gene Therapy; Introduction; Viral Vectors Used for Gene Therapy; Retroviral Vectors; Adenoviral Vectors; Adenovirus-Associated Virus; Herpes Simplex Virus 1; Other Viral Vectors; Nonviral Vectors; Oligonucleotides; Key Concepts; Suggested Readings

Chapter 5 Gene Targeting; Background and Challenges; Introduction of DNA into the Cell; Nonviral Transfer Vehicles; Gene Targeting; Recombinational and Repair Enzymes in Gene Targeting Efforts; Synthetic Oligonucleotides as Tools for Targeting; Insertion of Fragments of DNA: Gene Disruption and Replacement; Gene Targeting Has Already Proven Useful; Gene Targeting: The Future; Key Concepts; Suggested Readings; Chapter 6 Gene Therapy for Hematological Disorders; Introduction; Requirements for Gene Transfer into Hematopoietic Cells

Hematopoietic Stem and Progenitor Cells as Targets for Gene Therapy; Lymphocyte Gene Transfer; Current Problems and Future Directions; Summary; Key Concepts; Suggested Readings; Chapter 7 Gene Therapy for Liver Disease; Background; Introduction; General Principles for Hepatic Gene Therapy; Clinical Applications of Liver-Directed Gene Therapy; Summary; Key Concepts; Suggested Readings; Chapter 8 Gene Therapy in Cardiovascular Disease; Introduction; Genetic Manipulation of Cardiovascular Tissue; Gene Therapy of Restenosis; Gene Therapy for Angiogenesis; Gene Therapy of Vascular Grafts

Gene Therapy for the Heart

Sommario/riassunto

Gene therapy, or the use of genetic manipulation for disease treatment, is derived from advances in genetics, molecular biology, clinical medicine, and human genomics. Molecular medicine, the application of molecular biological techniques to disease treatment and diagnosis, is derived from the development of human organ transplantation, pharmacotherapy, and elucidation of the human genome. An Introduction to Molecular Medicine and Gene Therapy provides a basis for interpreting new clinical and basic research findings in the areas of cloning, gene transfer, and targeting; the appl
