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| Nota di contenuto | Opportunities in Biology; Copyright; Acknowledgments; Preface; Contents; Executive Summary; THE NEW BIOLOGY; STRUCTURAL BIOLOGY; GENES AND CELLS; DEVELOPMENT; THE NERVOUS SYSTEM AND BEHAVIOR; THE IMMUNE SYSTEM AND INFECTIOUS DISEASES; EVOLUTION, SYSTEMATICS, AND ECOLOGY; PLANT BIOLOGY AND AGRICULTURE; INFRASTRUCTURE OF BIOLOGY RESEARCH AND RECOMMENDATIONS; Training; Equipment and Facilities; Funding; Information Science and Collections; International Cooperation; 1 The New Biology; DIVISIONS BETWEEN TRADITIONAL DISCIPLINES ARE BEING REMOVED; 2 New Technologies and Instrumentation RECOMBINANT DNA TECHNIQUESRecombinant DNA Techniques Permit us to Isolate a Single Gene From the Tens of Thousands Encoded in a Complex Genome; Transformation of Higher Organisms; Biologists Can Specifically Insert a Functioning Gene Into the Genome of Complex Organisms; Making a Transgenic Animal; A Transgenic Animal is Produced Initially by a Combination of Microsurgery And Embryological Techniques; Transgenic Mice Have Been Used For a Variety of Experiments; Creating Transgenic Plants; The Creation of Transformed |

Plants Has Been one of The Most Exciting Developments in Modern Biology

Future ProspectsThe Potential for Using Transgenic Organisms to Make Discoveries Over the Next 5 or 10 Years Is Vast; MONOCLONAL ANTIBODIES; Monoclonal Antibodies Can be Used as Biological Probes For Specific Molecules; MICROCHEMICAL TECHNIQUES; Microchemical Instrumentation Has Had a Powerful Impact on Modern Biology That is Just Beginning to be Felt; FLOW CYTOMETRY; Flow Cytometry is Used to Sort Cells; MICROSCOPY; A Revolution in the Application of Light Microscopy Has Occurred; Video-Enhanced Contrast Microscopy Video-Enhanced Contrast Microscopy Combines the Technologies of Modern Light Microscopy, Video Imaging, and Digital Image...Low-Light-Dose Microscopy; Coupling Biological Chemistry with Advanced Image Processing Has Permitted Low-Light-Dose Microscopy to Evolve as an...; Scanning Acoustic Microscope; The Scanning Acoustic Microscope Measures the Elastic Properties of the Cell; Scanning Tunneling and Atomic Force Microscope; The Scanning Tunneling Microscope Allows One to Image Surfaces with the Resolution of a Few Angstroms

The Atomic Force Microscope Holds Great Promise for Analyzing Biological SpecimensMAGNETIC RESONANCE; Magnetic Resonance Spectroscopy is Becoming an Invaluable Tool for Determining the Structures of Complex Molecules; COMPUTERS AND DATA ANALYSIS; Computers are Coming to Play an Central Role in Modern Biology; BIOLOGY AND THE FUTURE; Synergistic Interactions of the New Biology Have Shortened the Time Between Fundamental Observations and Applications; 3 Molecular Structure and Function; Biological Macromolecules are Machines

The Main Theme of Structural Biology Is the Relation of Molecular Structure to Function
