CURRENT PROTOCOLS

Every step counts

- Bioinformatics
- Cell Biology
- Chemical Biology
- Cytometry
- Essential Laboratory Techniques
- Human Genetics
- Immunology
- Magnetic Resonance Imaging
- Microbiology
- Molecular Biology
- Mouse Biology
- Neuroscience
- Nucleic Acid Chemistry
- Pharmacology
- Plant Biology
- Protein Science
- Stem Cell Biology
- Toxicology

and more coming soon!

- **25,000 peer-reviewed, regularly updated** laboratory procedures
- Cutting-edge protocols developed by **leading research scientists**
- Indexed in **PubMed/Medline and Scopus**

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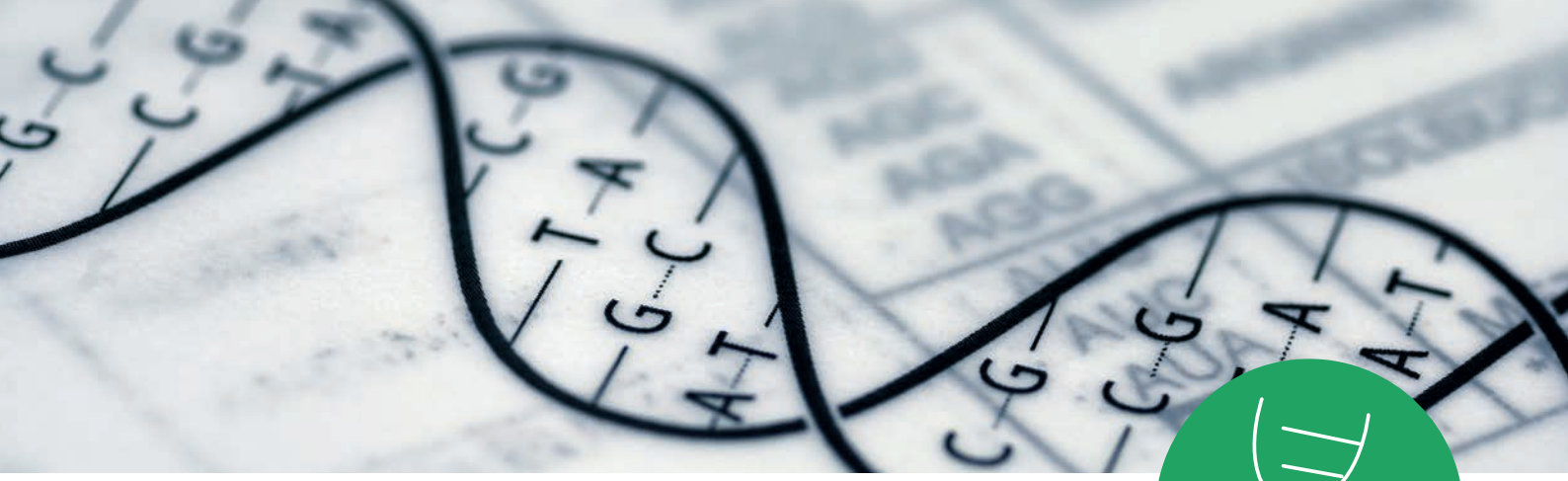

Current Protocols Bioinformatics

Designed specifically for life scientists, ***Current Protocols Bioinformatics*** is the number one resource for mastering the vast array of computational tools needed to not only decipher the tremendous amounts of information provided by today's research techniques, but also to present the results in a meaningful way. From the computer-shy to the most advanced super user, this collection is a must for the modern laboratory.

- Features step-by-step instructions for working with hundreds of applications and databases from research groups around the globe
- Shows how to select the correct software parameters, analyze data, interpret results, generate hypotheses, and advance research to new levels
- Provides detailed screenshots so researchers know exactly what they should be seeing
- Explains the basis of algorithms and statistical sampling to ensure understanding of the results and limitations
- Includes a valuable appendix on user fundamentals and a glossary of bioinformatics terms

Areas Covered:

- Analyzing Expression Patterns
- Analyzing Molecular Interactions
- Analyzing RNA Sequence and Structure
- Annotating Genes
- Assembling and Mapping Large Sequence Sets
- Building and Using Biological Databases
- Cheminformatics and Metabolomics
- Comparing Genomes
- Finding Similarities and Inferring Homologies
- Inferring Evolutionary Relationships
- Modeling Structure from Sequence
- Recognizing Functional Domains
- Understanding Genome Variation
- Using Proteomics Techniques
- Pathway Analysis

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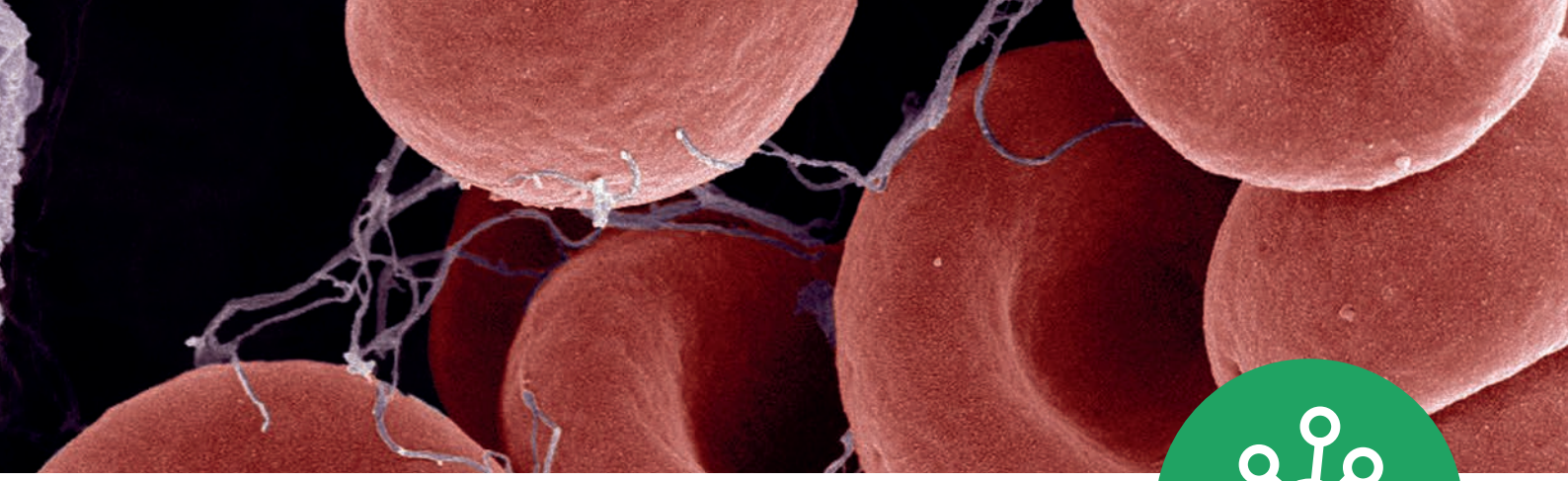


Current Protocols Cell Biology

Developed by leading scientists in the field and including contributions from scientists internationally, ***Current Protocols Cell Biology*** is a continuously updating essential reference for researchers who study the cell, its internal and external environment, and its relationships to other cells. This collection includes detailed methods for analysis of the relationship between specific molecules and genes, and their locations, functions, and structure at the cellular level.

- Features step-by-step instructions for working with hundreds of applications and databases from research groups around the globe
- Shows how to select the correct software parameters, analyze data, interpret results, generate hypotheses, and advance research to new levels
- Provides detailed screenshots so researchers know exactly what they should be seeing
- Explains the basis of algorithms and statistical sampling to ensure understanding of the results and limitations
- Includes a valuable appendix on user fundamentals and a glossary of bioinformatics terms

Areas Covered:

- Antibodies as Cell Biological Tools
- Cell Adhesion
- Cell Biology of Chromosomes and Nuclei
- Cell Cycle Analysis
- Cell Culture
- Cell Motility
- Cellular Aging and Death
- Characterization of Cellular Proteins
- Electrophoresis and Immunoblotting
- Expression and Introduction of Macromolecules into Cells
- Extracellular Matrix
- Fluorescent Protein Technology
- In Vitro Reconstitution
- Lipids
- Macromolecular Interactions in Cells
- Microscopy
- Nanotechnology
- Organelle Motility
- Preparation and Isolation of Cells
- Protein Labeling and Immunoprecipitation
- Protein Trafficking
- Signal Transduction
- Stem Cells
- Subcellular Fractionation and Isolation of Organelles
- Whole Organism and Tissue Analysis
- Viruses

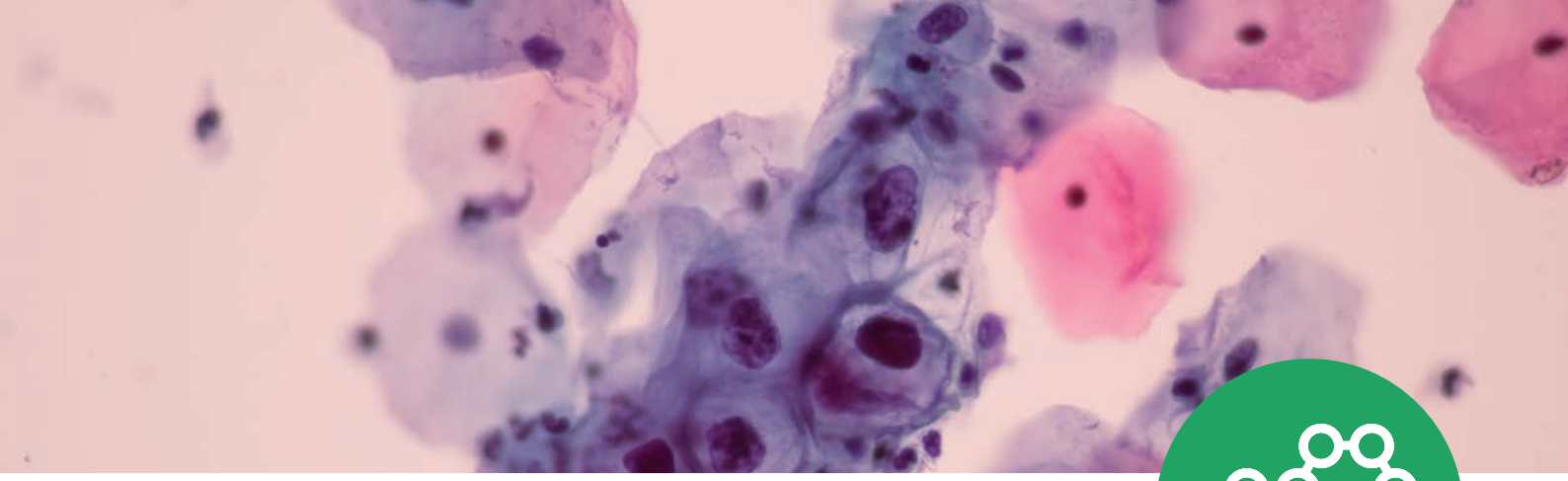
Current Protocols Chemical Biology

Chemical Biology involves the application of chemistry to the investigation of biology and drug design. Investigators in this diverse field study biological questions using chemical techniques and tools, often involving small molecules designed for a specific purpose or identified on the basis of biochemical or cellbased screens. ***Current Protocols Chemical Biology***:

- Describes advances in laboratory automation and robotics, statistical analysis, and medicinal chemistry as they apply to high-throughput screening (HTS) methods
- Includes methods for modification of proteins, nucleic acids, carbohydrates and lipids for their use as tools in the study of particular biological systems
- Suitable for researchers working in the fields of medicinal chemistry, combinatorial chemistry, proteomics, pharmacology, biochemistry, glycobiology, chemical genetics, molecular biology, cell biology, and cytometry

Areas Covered:

- Carbohydrate Modifications, Engineering and Applications
- Chemical Tools for Probing Small Molecule-Macromolecule Interactions
- Lipids, Metabolites, and Metabolic Engineering
- Nanotechnology Applications for Chemical Biology
- Nucleic Acid Modifications, Engineering, and Applications
- Protein Modifications, Engineering, and Applications
- Strategies for Bioactive Small Molecule Discovery
- Translational Chemical Biology



Current Protocols Cytometry

Current Protocols Cytometry distills and organizes the latest techniques from the top cytometry labs and specialists worldwide. It is the most complete set of peer-reviewed protocols for flow cytometry and in vivo imaging.

- Provides complete coverage of flow cytometry, with hundreds of elementary to advanced techniques, from instrumentation to interpretation, fluorescence to antigen density, and basic research to clinical applications
- Offers in-depth coverage of microscopy and in vivo imaging, including detailed discussion of objectives and expert guidelines on image interpretation, confocal microscopy, and illumination sources
- Includes valuable data, plus descriptions of stock solutions, equipment, and common techniques

Areas Covered:

- Cellular and Molecular Imaging
- Data Processing and Analysis
- Flow and Image Cytometry Instrumentation
- Microbiological Applications
- Molecular and Cellular Probes
- Molecular Cytogenetics
- Multiplexed and Microparticle-based Analyses
- Nucleic Acid Analysis
- Phenotypic Analysis
- Quality Control
- Specimen Handling, Storage and Preparation
- Studies of Cell Function

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Current Protocols Essential Laboratory Techniques

Suitable for novice and expert alike, ***Current Protocols Essential Laboratory Techniques*** is the ultimate all-in-one fundamentals guide for life scientists. Essential Laboratory Techniques provides in-depth information for experienced researchers looking for fresh insight into fundamental techniques, while remaining accessible to young scientists preparing to run an electrophoresis gel for the first time.

Covering basic and complex procedures—from weight and volume measurement to real-time PCR and bioinformatics—and including guidance on ethics and data presentation, this expanding resource gives access to the expertise, skills, and understanding required for success at the bench. It also:

- Describes solution chemistry and preparation
- Provides instruction on the care and use of common equipment such as pH
- meters, spectrophotometers, centrifuges, and microscopes
- Details modern bioinformatics and genomics techniques
- Includes our How To Be A Successful Scientist collection

Editorial Board: Sean R. Gallagher and Emily A. Wiley

Areas Covered:

- General techniques, such as blotting, electrophoresis, and real-time PCR
- Skills such as measurement of mass, volume, pH, radioactivity, etc.
- Cell culture techniques
- Detailed explanations of image manipulation, including common file formats and when to use them
- Instructions for creating posters from programs such as PowerPoint
- Preparation of reagents, including recipes for common reagents and guides to buffers
- Proper keeping of a laboratory notebook, including information regarding intellectual property issues

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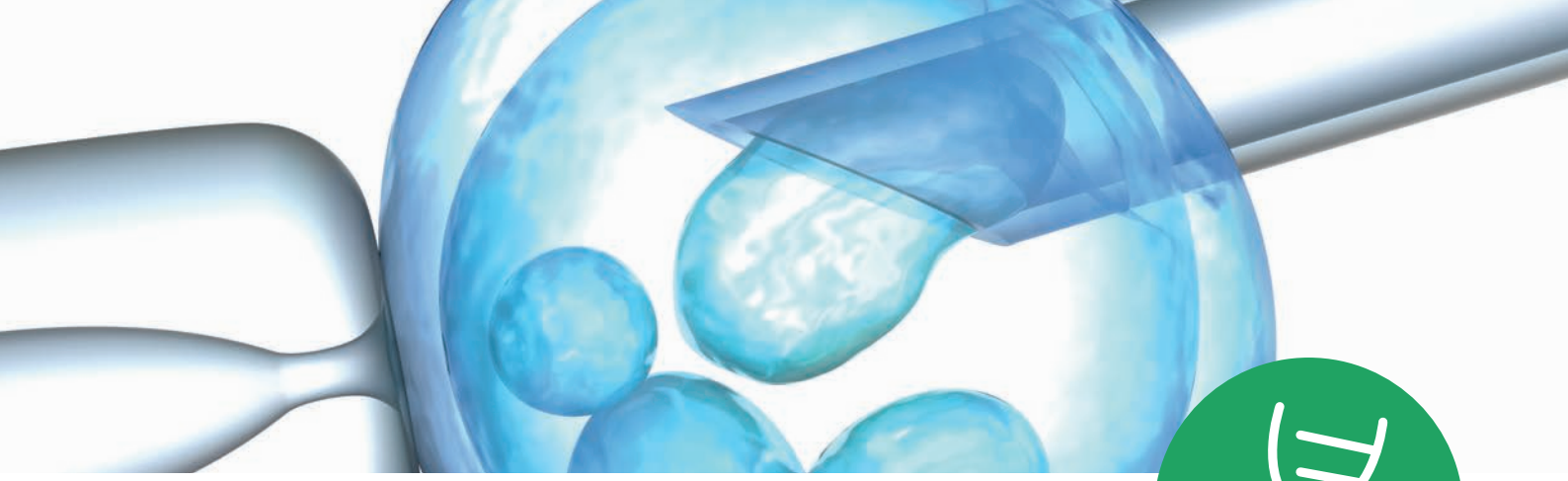


Current Protocols Human Genetics

Current Protocols Human Genetics is the comprehensive resource for all types of research and clinical laboratory approaches pertaining to human genetics. It covers disease gene mapping, generation and use of induced pluripotent stem cells, linkage and association studies, and analysis of sequence variants and larger-scale genomic structure.

- Features methods in all areas of genetic research, including expression analysis, clinical genetics, cancer genetics, analysis of sequence variants, cytogenetics, gene therapy, forensic genetics, biochemical genetics, nextgeneration sequencing, and more
- Offers basic to sophisticated methods—many of them equally applicable to other eukaryotic organisms, such as the mouse

Areas Covered:

- General techniques, such as blotting, electrophoresis, and real-time PCR
- Skills such as measurement of mass, volume, pH, radioactivity, etc.
- Cell culture techniques
- Detailed explanations of image manipulation, including common file formats and when to use them
- Instructions for creating posters from programs such as PowerPoint
- Preparation of reagents, including recipes for common reagents and guides to buffers
- Proper keeping of a laboratory notebook, including information regarding intellectual property issues

Current Protocols Immunology

Current Protocols Immunology is a collection that provides comprehensive coverage of immunological methods—from classic to the most cutting edge—and contains the most sophisticated protocols in immunology today.

- Covers the latest in antibody detection and preparation, molecular immunology, innate immunity, tumor immunology, engineering immune molecules and receptors, and more
- Includes chapters on sources and proven methods for isolation and characterization of all types of lymphoid cells, non-lymphoid cells involved in immune responses, stem and progenitor cells
- Contains a massive array of animal models for studying immunological conditions and infectious diseases
- Offers valuable reference information in five extensive "best practices" appendices, including commonly used reagents, equipment and techniques, and a full appendix devoted to the CD system of leukocyte surface molecules

Areas Covered:

- Animal Health and Husbandry
- Animal Models for Autoimmune and Inflammatory Disease
- Animal Models for Infectious Diseases
- Animal Models for Tumor Immunology
- Antigen Processing and Presentation
- Biochemistry of Cell Activation
- Complement
- Cytokines and Their Cellular Receptors
- Detection and Analysis of HIV
- Engineering Immune Molecules and Receptors
- Immunofluorescence and Cell Sorting
- Immunologic Studies in Humans
- In Vitro Assays for Mouse Lymphocyte Function
- In Vivo Assays for Lymphocyte Function
- Induction of Immune Responses
- Innate Immunity
- Isolation and Analysis of Proteins
- Isolation and Differentiation of Stem and Progenitor Cells
- Ligand-Receptor Interactions in the Immune System
- Microscopy
- Neuroimmunology
- Peptides

Current Protocols Magnetic Resonance Imaging

Current Protocols Magnetic Resonance Imaging is the key to unlocking and fully realizing the performance capabilities of any MR system, whether in a clinical or nonclinical setting.*

- Gives specific and thorough descriptions of protocols and technical approaches to MR applications that yield clear and accurate images of any part of the human body, male or female
- Provides sequences for machines of different field strengths and from different manufacturers, including detailed tables listing the parameters of each sequence presented in a consistent, easy-to-read format
- Includes a f ull section covering the basic principles underlying MR imaging

* This title is no longer updated and is sold on a one-time persistent access basis.

Areas Covered:

- Acquired Aortic Disease
- Acquired Heart Disease
- Adrenal Glands
- Ankle and Foot
- Basic Spin Properties and the Bloch Equations
- Cerebral Neoplastic Disease
- Cerebral Venous Lesions
- Chest Wall
- Clinical Functional Magnetic Resonance Imagining (fMRI)
- Congenital Heart Disease
- Diffusion
- Elbow
- Extra- and Intradural Spine
- Gastrointestinal Tract
- Head and Neck
- Hip
- Imaging Concepts
- Infectious Diseases of the Brain
- Intracranial Arterial Disease
- Kidney
- Knee
- Liver
- Magnetic Resonance Angiography
- Miscellaneous Brain Pathology
- Motion Artifacts, Motion Compensation and Magnetic Resonance Angiography
- Musculoskeletal Stress Injuries
- Pancreas
- Pulmonary Artery, Mediasternum, Pleura, and Lung
- Radiofrequency Excitation and Reception
- Sequences
- Shoulder
- Signal, Noise, and Contrast
- Spin Behavior

Current Protocols Microbiology

Current Protocols Microbiology details the best procedures for analyzing bacteria, viruses, protists, and fungi, including pathogens affecting animals and plants. Written by leading experts and reviewed meticulously by a distinguished Editorial Board as well as in-house scientific editors, this collection offers continually updated coverage of emerging technologies and concepts such as biofilms, quorum sensing, quantitative PCR, and proteomics and genomics, as well as basic and advanced methodology for specific microorganisms. It is the comprehensive source of high-quality microbiology protocols to reflect this rapidly evolving discipline.

- Provides detailed, step-by-step instructions for isolation, growth, and analysis of a wide variety of specific microorganisms, as well as basic culture and staining techniques
- Features a collection on food microbiology
- Expanded coverage of fungi, parasitic protozoa, and other protists
- Increased coverage of metagenomics and microbiomes

Areas Covered:

- Actinobacteria (High G+C Gram Positive)
- Alpha Proteobacteria
- Animal DNA Viruses
- Animal RNA Viruses
- Anti-Infectives
- Beta Proteobacteria
- Chlamydiae
- Delta Protobacteria
- Emerging Technologies
- Enteric Gamma Proteobacteria
- Epsilon Proteobacteria
- Firmicutes (Low G+C Gram Positive)
- Microbial Communities
- Microscopy and Imaging
- Nonenteric Gamma Proteobacteria
- Other Eubacteria
- Plant RNA Viruses
- Spirochetes
- Parasitic Protozoa
- Planarians
- Protists
- Mycology

Current Protocols Molecular Biology

An essential tool for anyone at the forefront of molecular biology research, ***Current Protocols Molecular Biology***—the first Current Protocols title—remains the benchmark by which all other protocol resources are judged. With an extensive range of information, from basic methods to advanced procedures, ***Current Protocols Molecular Biology*** provides incomparable coverage of this ever-expanding field.

- Contains updated information and protocols on rapidly changing areas such as genome editing, next generation sequencing, and molecular interactions
- Covers basic methods, such as nucleic acid isolation, purification, and quantitation
- Offers advanced procedures for microarray analysis, chromatin assembly and analysis, single-cell analysis and gene silencing, among others
- Explores specialized areas, including mouse phenotyping and metabolomics

Areas Covered:

- Analysis of Proteins
- Analysis of Protein Interactions
- Analysis of Protein Phosphorylation
- Chromatin Assembly and Analysis
- Construction and Screening of Recombinant DNA Libraries
- Discovery and Analysis of Differentially ExpressedGenes
- DNA and RNA: Enzymatic Manipulation
- DNA and RNA: Preparation and Analysis
- DNA and RNA: Protein Interactions
- DNA Sequencing
- Escherichia coli, Plasmids, and Bacteriophages
- Genome Editing
- Gene Silencing
- Generation and Use of Combinatorial Libraries
- Immunology
- In Situ Hybridization and Immunohistochemistry
- Informatics for Molecular Biologists
- Introduction of DNA into Mammalian Cells
- Mammalian Cell Culture
- Manipulating the Mouse Genome
- Metabolomics
- Mouse Phenotyping
- Mutagenesis of Cloned DNA
- Nucleic Acid Arrays
- The Polymerase Chain Reaction
- Preparation and Analyses of Glycoconjugates
- Protein Expression
- Yeast

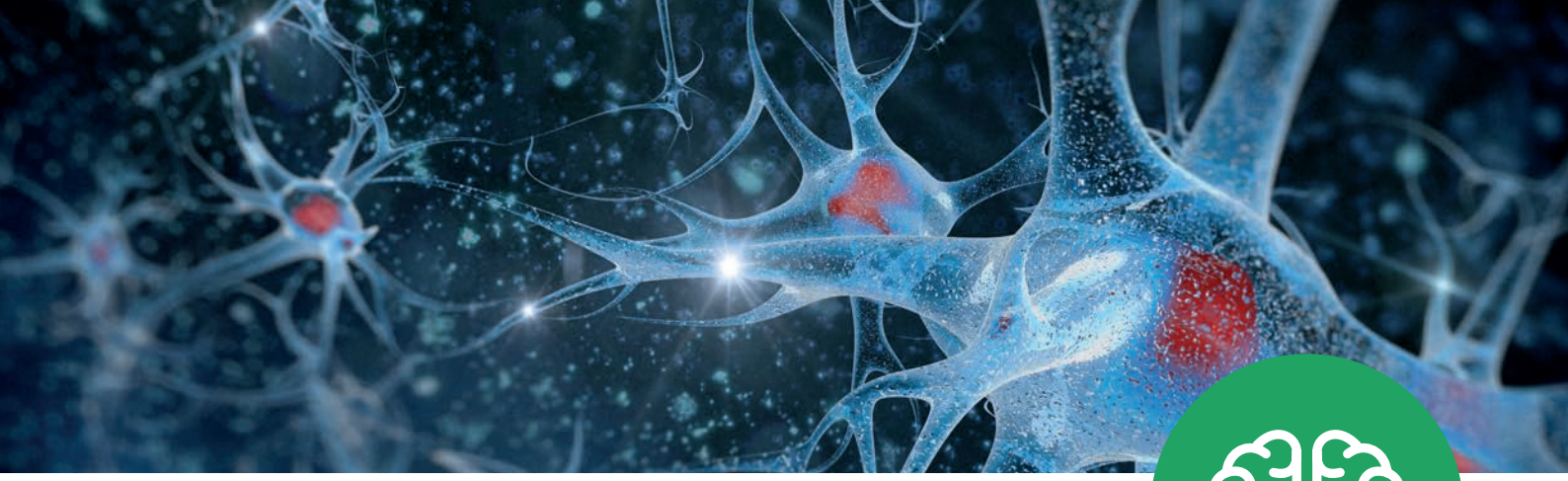
Current Protocols Mouse Biology

Conceived by leading scientists in the field, ***Current Protocols Mouse Biology*** brings together resources in mouse biology and genetics. This title satisfies a great and growing need for a compilation of peer-reviewed step-by-step protocols used in all areas of research involving mice. ***Current Protocols Mouse Biology*** is regularly updated to meet the needs of investigators in this rapidly evolving specialty, making the very latest techniques available at the click of a mouse.

- Covers mouse methods in the areas of mouse husbandry and analysis, including breeding and maintenance of colonies, generation of mouse models, as well as clinical and molecular phenotyping of mice
- Detailed protocols and in-depth overviews for in vivo, ex vivo, and in vitro mouse methods applicable across diverse fields of biomedical research.
- Suitable for investigators in all areas of research using mice, including academic, government, biopharmaceutical, and veterinary sciences

Areas Covered:

- Autopsy and Collection of Tissues
- Behavior Assessment
- Breeding, Colony Management and Archiving
- Clinical and molecular phenotyping of mice
- Collection of Body Fluids
- CNS and PNS Exploration
- Ethical Considerations for Working With Mice
- Exploration of the Cardiac System
- Exploration of the Liver and the Gastrointestinal Tract
- Hearing
- Hematology and Immunology
- Metabolic Exploration of the Mouse
- Neuromuscular Assessment
- The Respiratory System in the Mouse
- The Skeletal System
- Strains and Nomenclature
- Studying Cancer in the Mouse
- Surgical Techniques, Both Fundamental and Advanced
- Techniques to Generate Mouse Models and Analyze Genetic Variation



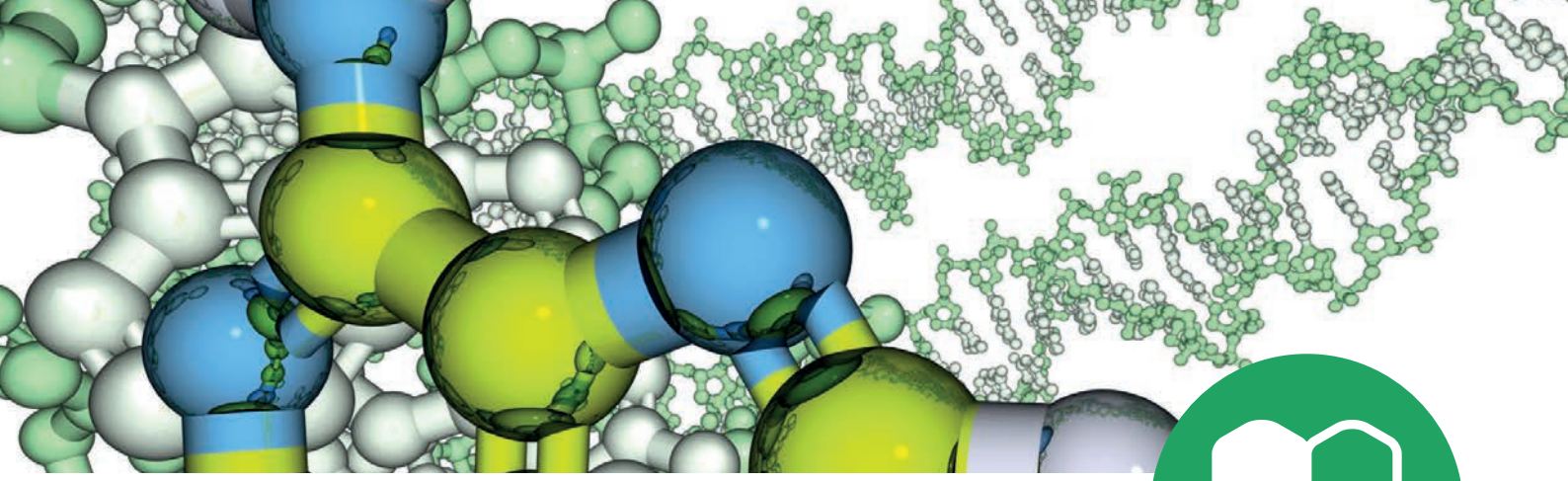
Current Protocols Neuroscience

Current Protocols Neuroscience is the most comprehensive collection of validated methods and preclinical models for researchers investigating the nervous system. Neuroscience is an exceptionally broad discipline and ranges from the study of the action of single ion channels up through wholeanimal behaviors and complex diseases. As a result, neuroscientists tend to be particularly collaborative in their research efforts to understand how the nervous system works and how to modify it. ***Current Protocols Neuroscience*** brings together all levels of the discipline in one extensive collection.

- Collects hundreds of core techniques in all branches of neuroscience from leading scientists around the world
- Draws from molecular neurobiology, neurophysiology, neuroanatomy, neuropharmacology, and behavioral neuroscience
- Includes both in vitro and in vivo models, prepared, edited, and tailored specially for neuroscience research

Areas Covered:

- Behavioral Neuroscience
- Biomechanics
- Cellular and Developmental Neuroscience
- Construction of Custom Electrophysiology Tools
- Human Neuroscience
- Imaging
- Molecular Neuroscience
- Neuroanatomical Methods
- Neurochemistry/Neuropharmacology
- Neurophysiology
- Preclincial Models of Neurologic and Psychiatric Disorders



Current Protocols Nucleic Acid Chemistry

Current Protocols Nucleic Acid Chemistry is the resource for designing and running successful research projects in the rapidly growing and changing field of nucleic acid, nucleotide, and nucleoside research. Developed by an international group of editors and authors, the methods draw from a unique set of chemistries to synthesize modified nucleic acids, which can be used in structure function studies, as therapeutic agents, and as tools for molecular biology.

- Covers basic to advanced techniques for the synthesis, modification, purification, protection, analysis, and utilization of nucleic acids, nucleotides, and nucleosides
- Includes methods for analysis of structure-function, binding, and cross-linking
- Includes growing coverage of therapeutic agents, including anticancer and antiviral compounds

Areas Covered:

- Biologically Active Nucleosides
- Biophysical Analysis of Nucleic Acids
- Chemical and Enzymatic Probes for Nucleic Acid Structure
- Combinatorial Methods in Nucleic Acid Chemistry
- Methods for Cross-Linking Nucleic Acids
- Nucleic Acid-Based Microarrays and Nanostructures
- Nucleoside Phosphorylation and Related Modifications
- Nucleoside Prodrugs and Delivery Strategies
- Protection of Nucleosides for Oligonucleotide Synthesis
- Purification and Analysis of Synthetic Nucleic Acids and Components
- Triplex and Quadruplex Formation
- RNA Silencing
- RNA Folding Pathways
- Synthesis of Modified Nucleosides
- Synthesis of Modified Oligonucleotides and Conjugates
- Synthesis of Unmodified Oligonucleotides

Current Protocols Pharmacology

Developed by pharmacologists and medicinal chemists from academia and industry, ***Current Protocols Pharmacology*** is a key reference work that documents the broad spectrum of integrative techniques used in drug discovery and in the study of disease pathophysiology. The individual protocols present basic pharmacological techniques, from an assessment of the efficacy of new compounds to the safety pharmacology studies necessary for the regulatory filing of an Investigational New Drug (IND) application. Accompanying expert overviews provide perspective and context, making it easy for newcomers and professionals alike to profitably use ***Current Protocols Pharmacology*** to its fullest extent.

- Covers the full range of molecular, cellular, and in vivo pharmacological techniques used in the discovery and study of drugs and NCEs in the antiinfective, cardiovascular, inflammatory (including respiratory and arthritis), neurological, oncological, pain, and psychiatric therapeutic areas
- Presents state-of-the-art techniques for characterizing the interaction of known drugs and NCEs with receptors and enzymes at the molecular and functional levels together with proven preclinical models of the human disease state to assess efficacy, selectivity, and side effect liabilities
- Provides timely and authoritative overviews on receptor theory and the drug discovery process, from target identification and compound screening to the preclinical IND process

Areas Covered:

- ADME/Pharmacodynamics
- Animal Models of Human Disease States
- Anti-Infectives
- Electrophysiological Techniques
- Enzyme Assays
- G Protein-Coupled Receptors
- Ligand-Gated Ion ChannelsIsolated Tissue Preparations
- Ligand-Gated Ion Channels
- Molecular Pharmacology
- Oncology Models
- Receptor Binding and Function
- Receptor Theory
- Safety Pharmacology
- Toxicology

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Current Protocols Plant Biology

Plants provide, either directly or indirectly, all of our food, as well as the clothes on our backs, the material for our homes and the energy that fuels our society. The progress in plant science research has been spectacular over the past 50 years, with many fundamental discoveries occurring only in the last few years. The advancements cannot come too soon because the planet faces significant challenges with respect to increasing population, climate change, and limitations of natural resources.

In most areas of science, advancement in knowledge is driven largely by the development and application of new methods, either invented de novo or adapted from other disciplines. Plants clearly provide their own challenges, as well as unique characteristics that require, at a minimum, modification of current methods to optimize their utility. Indeed, it is often necessary to develop unique methods that are applicable to one or a select group of plant species.

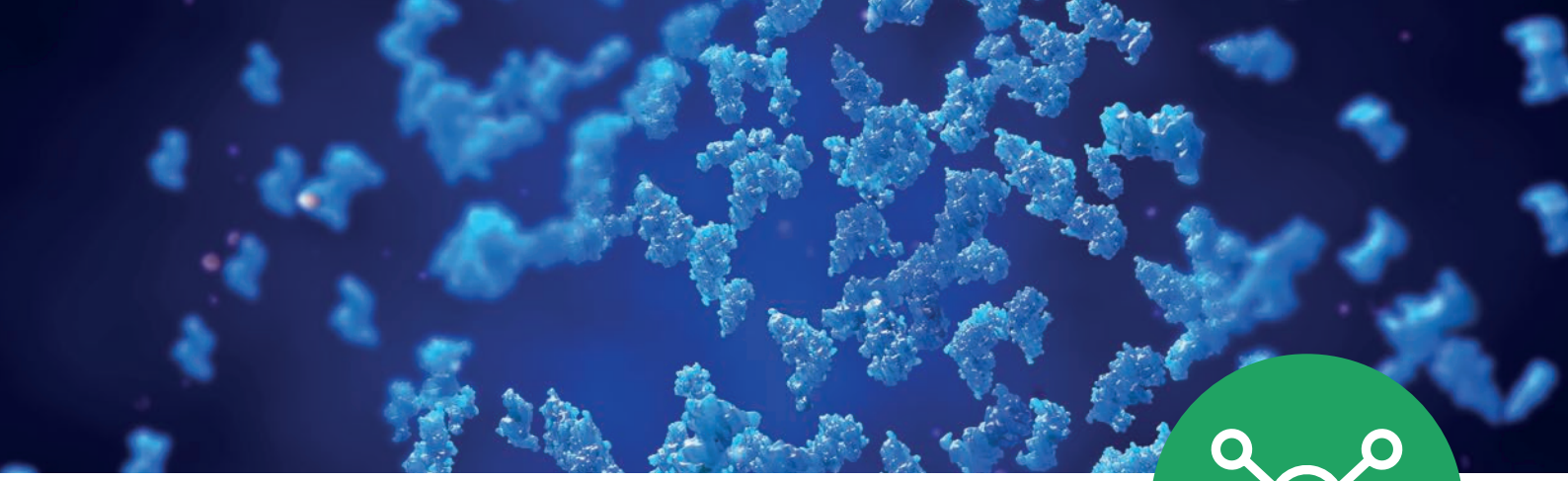
The aims and scope of ***Current Protocols Plant Biology*** are to provide a curated compilation of current methods that cover all aspects of plant biology with the goal of advancing the progress of plant science research. As with all of the Current Protocols collections, experts from around the globe, many of whom have invented the methods described, provide their step-by-step protocols and expert advice to ensure that even novice plant biologist can confidently apply these methods to their own research.

Areas Covered:

- Extraction of DNA, RNA, Proteins
- Chromosome Analysis
- Transcriptional Analysis
- Protein Expression Analysis
- Metabolite Analysis
- Plant Enzymology
- Epigenetics
- Plant Genetic Transformation
- Plant Growth and Maintenance
- Microbe/Pest Interactions
- Mutagenesis
- Imaging and Phenotyping

Species Covered:

- Arabidopsis
- Barley
- Maize
- Poplar
- Rice
- Soybean



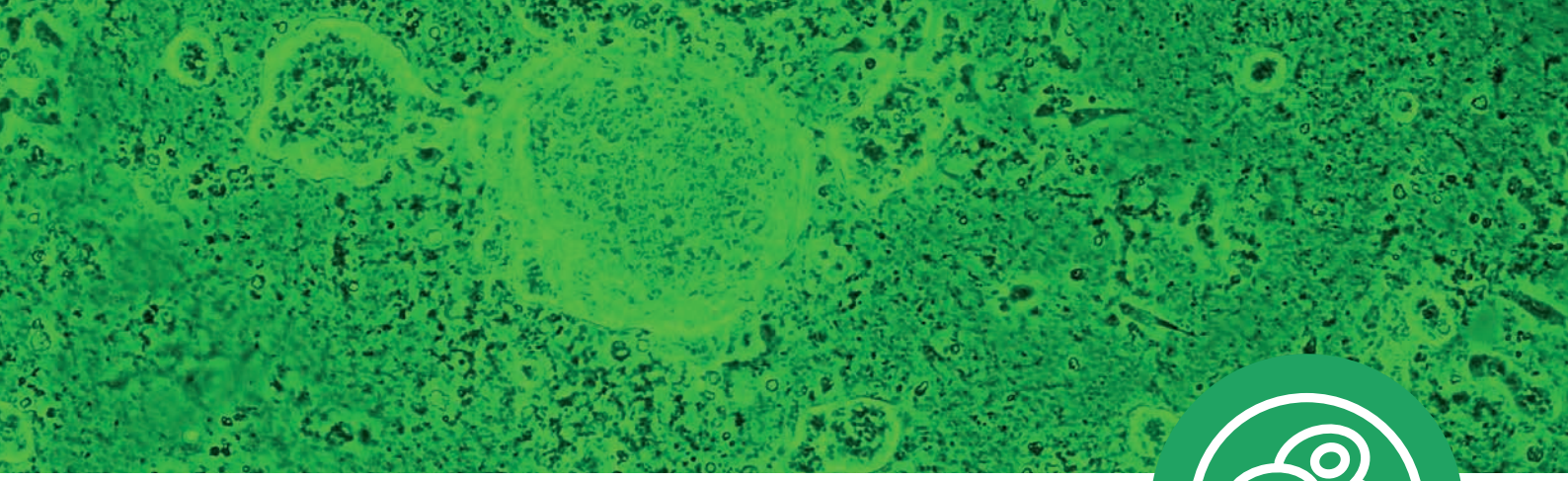
Current Protocols Protein Science

Proteins are one of the fundamental elements of life, along with nucleic and fatty acids, carbohydrates, and a few other types of molecules. ***Current Protocols Protein Science*** provides the most comprehensive collection of methods for the study of all aspects of proteins, and includes both classic and state-of-the-art methods for protein purification, identification, modification, engineering, structure determination, interaction studies, and proteomic analysis. All aspects of the study of proteins are accounted for in this unparalleled series.

- Presents a vast array of methods for studying and quantifying protein interactions, as well as many protocols for proteomics analysis and protein engineering
- Suitable for expert protein researchers as well as scientists with little prior experience in protein isolation and characterization, including scientists trained in other biological disciplines

Areas Covered:

- Affinity Purification
- Characterization of Recombinant Proteins
- Chemical Modification of Proteins
- Computational Analysis
- Conventional Chromatographic Separations
- Detection and Assay Methods
- Electrophoresis
- Extraction, Stabilization, and Concentration
- Gel-Based Proteome Analysis
- Identification of Protein Interactions
- Mass Spectrometry
- Membrane Proteins
- Non-Gel-Based Proteome Analysis
- Peptidases
- Post-Translational Modification: Glycosylation
- Post-Translational Modification: Phosphorylation and Phosphatases
- Post-Translational Modification: Specialized Applications
- Production of Recombinant Proteins
- Protein Engineering
- Protein Folding
- Proteome Bioinformatics
- Purification of Recombinant Proteins
- Quantitation of Protein Interactions
- Strategies of Protein Purification and Characterization
- Structural Biology
- Targeted Proteomics



Current Protocols Stem Cell Biology

Current Protocols Stem Cell Biology provides experimental methods established by leading investigators from all over the world. Designed to help researchers realize the potential of stem cells for improving human health, the protocols include basic and emerging technologies for the analysis of stem cells, as well as the processes underlying differentiation and development. ***Current Protocols Stem Cell Biology*** also includes detailed methodologies for isolating, propagating, differentiating, and performing genetic manipulation of stem cells from a variety of organisms, including humans; alternative methodologies for the generation of stem cells; experimental procedures to assist scientists in discovering methods to control differentiation; and promising genomic and proteomic approaches to the study of embryonic development.

- Isolation, characterization, and differentiation of stem cells from embryonic and extraembryonic tissues from a variety of organisms
- Isolation and characterization of somatic stem cells
- Isolation and characterization of cancer stem cells
- Manipulation of the potency of cells
- Genetic manipulation of stem cells

Areas Covered:

- Cancer Stem Cells
- Cardiovascular Stem Cells
- Characterization of Embryonic Stem Cells
- Culture and Maintenance of Undifferentiated
- Embryonic Stem Cells
- Ectodermal Lineages
- Endodermal Stem Cells
- Extraembryonic Lineages
- Genetic Manipulation of Stem Cells
- Germ Layer Induction/Differentiation of Embryonic Stem Cells
- Germline Stem Cells
- Gut Stem Cells
- Hematopoietic Stem Cells
- Homologous Recombination in Stem Cells
- iPS Cells
- Isolation of Embryonic Stem Cells
- Lineage Tracers in Stem Cells
- Mesodermal Lineages
- Manipulation of Potency
- Neural Stem Cells
- Non-Hematopoietic Bone
- Marrow-Derived Stem Cells
- Nuclear Transfer

Current Protocols Toxicology

Current Protocols Toxicology is the best updated methods resource for accurate, efficient assessment of toxicity in whole organisms, organs and tissues, cells, and biochemical pathways. Including contributions from scientists globally, this title provides step-by-step protocols for the molecular analysis of the pathways, processes, and phenomena associated with toxic insults.

- Provides the latest models and methods from molecular biology, cell biology, biochemistry, and genetics as they are applied in a toxicology context
- Includes methods for analysis of the major pathways associated with responses to toxicants
- Describes whole-animal and in vitro model systems for testing and characterizing the responses to toxic agents
- Techniques for drug transporters, regulatory toxicology, and developmental and environmental studies

Areas Covered:

- Alternative Methodologies in Toxicology
- Assessment of Cell Toxicity
- Assessment of the Activity of Antioxidant Enzymes
- Biochemical and Molecular Neurotoxicology
- Drug Transporters
- Gastrointestinal Toxicology
- Gene Targeting
- Genetic Toxicology: Mutagenesis and Adduct Formation
- The Glutathione Pathway
- Heme Degradation Pathway
- Heme Synthesis Pathway
- Hepatotoxicology
- Immunotoxicology
- Male Reproductive Toxicology
- Neurotoxicology
- The Nitric Oxide/Guanylate Cyclase Pathway
- Oxidative Stress
- Regulatory Testing
- Respiratory Toxicology
- Techniques for Analysis of Chemical Biotransformation
- Teratology and Developmental Toxicology
- Toxicokinetics
- Toxicological Models

Wiley Online Library

Supporting the **Researcher** at Every Step

Introduction and Overview
Which protocol will best answer my research question?

Background Information
What is the theory behind this protocol?

Basic Protocols
Steps I should follow for a successful and reproducible experiment

Alternate Protocols
Is there a different approach that works better with my sample?

Support Protocols
What else do I need to prepare for this experiment?

Materials Lists, Recipes and Solutions
What reagents and equipment do I need? Clear and precise recipes to ensure reproducibility

Expert Advice
Things I should watch for during the experiment

- Helpful hints
- Cautions
- Expected results along the way
- Time considerations

Analysis of Results/ Troubleshooting
What can I infer from the experimental results?

- How can I further optimize the experiment?
- Why is there an outlier?

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