JoVE Journal Catalog

JoVE Journal is the first and only peer-reviewed, MEDLINE®/PubMed®-indexed video journal devoted to life science and physical science experimental procedures. Delivered in a visual format, JoVE Journal captures unsurpassed detail of scientific protocols, significantly improves experiment reproducibility, and enhances the process of transferring knowledge of experimental techniques.

Available JoVE Journal sections include:

- Behavior
- Bioengineering
- Biology
- Chemistry
- Developmental Biology
- Engineering
- Environment
- Immunology & Infection
- Medicine
- Neuroscience
- Genetics
- Biochemistry
- Cancer Research

BH BEHAVIOR

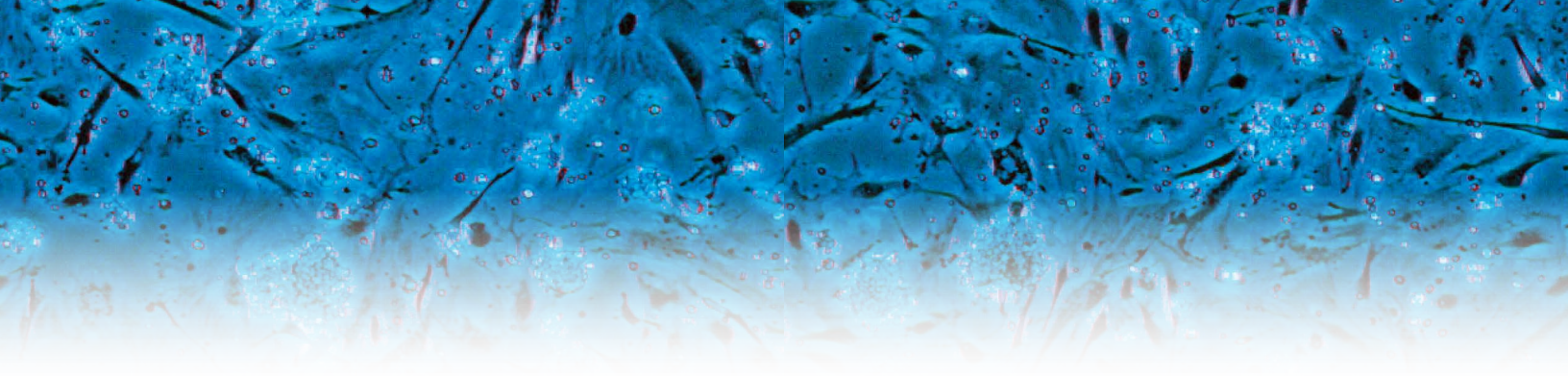
JoVE Behavior presents observational and experimental techniques that provide insights into human and animal behavior. Topics within the field of behavioral science include analysis of genetic causes and physiological responses to internal or external stimuli as well as implicated brain regions. *Topics include:*

- Cognitive Neuroscience
- Cognition (Attention, Reasoning, Decision Making)
- Virtual Reality and Perception
- Sexual and Motivational Behaviors
- Social Awareness and Interactions
- Learning and Memory
- Sleep and Circadian Rhythms
- Linguistics
- Addiction
- Emotion
- Control of Movement
- Consciousness

BE BIOENGINEERING

JoVE Bioengineering merges both the physical and life sciences to aid understanding and prediction of biological processes. By applying physical science tools to life science questions, JoVE Bioengineering supports the discovery of more effective ways to measure, diagnose, and clinically treat disease. *Topics include:*

- Tissue Engineering
- Biosensors
- Bio-imaging Techniques and Equipment
- Cell Topography
- Therapeutic Materials
- High Throughput Analysis
- Microfluidics
- Synthetic Substrates and Materials for Bio-applications
- Robotic Therapeutics



B BIOLOGY

JoVE Biology provides a foundation for general biology research methodologies. Content in this section canvases all fields of cell, molecular, and organismal biology and includes applications ranging from standard techniques to novel approaches aimed at understanding the functions of life and living organisms. This diverse section includes, but is not limited to, techniques in physical biology, cellular biochemistry, genetics, physiology, systems biology, and a combination of eukaryotic and prokaryotic model systems. *Topics include:*

- Cell Signaling Pathways and Cell Communication
- Bioinformatics
- Gene Sequencing
- Cellular and Molecular Imaging
- Cellular and Genetic Therapeutics
- *In vivo* and *in vitro* Models of Disease
- Protein Interactions and Kinetics
- Metabolism
- Models of Aging

C CHEMISTRY

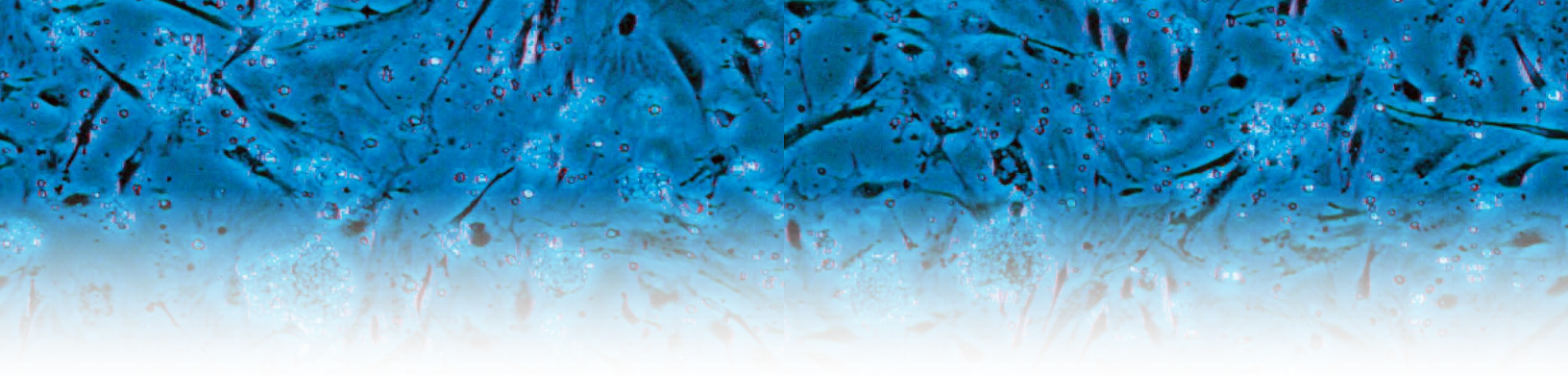
JoVE Chemistry covers a broad spectrum of chemical disciplines, including fundamental and applied research into molecular interactions, properties, and structures. The section spans the core divisions of analytic, organic, organometallic, inorganic, bioinorganic, and biochemistry. Also included are the design and preparation of materials and small molecules for advanced applications. *Topics include:*

- Structural Characterization
- Electronic Spectroscopy
- Nuclear and Electronic Characterization (NMR, EPR, etc.)
- Electrochemistry
- Molecular Kinetics
- Mass Spectrometry
- Synthesis and Purification
- Column Chromatography
- Synthetic Biology
- Structural Biology

DB DEVELOPMENTAL BIOLOGY

Developmental Biology is one of the largest disciplines in biological science, employing a multitude of complex and rapidly developing research methodologies. JoVE Developmental Biology contains not only an overview of the discipline, but also an examination of general methods, including principles of reprogramming, general protocols and applications. Published research methodologies include those that are used to study biological development *in vitro* and *in vivo* at the molecular, cellular, tissue, organ, and whole organism levels. *Topics include:*

- Gametogenesis and Fertilization
- Embryogenesis
- Morphogenesis and Organogenesis
- Stem Cell Biology and Nuclear Reprogramming
- Regeneration and Repair
- Mechanisms of Differentiation
- Genetic and Epigenetic Control of Development
- Evolutionary Developmental Biology
- Aging and Senescence



ENGINEERING

JoVE Engineering presents a broad range of experimental techniques and processes utilized throughout the fields of engineering and applied physics. Articles are authored by mechanical, electrical, and chemical engineers, physicists, and materials scientists and serve as a foundation for innovation and the advancement of practices and procedures. *Topics include:*

- Device Fabrication
- Electronic Systems
- Optics and Photonics
- Applied Mechanics
- Materials Science
- Advanced Manufacturing

ENVIRONMENT

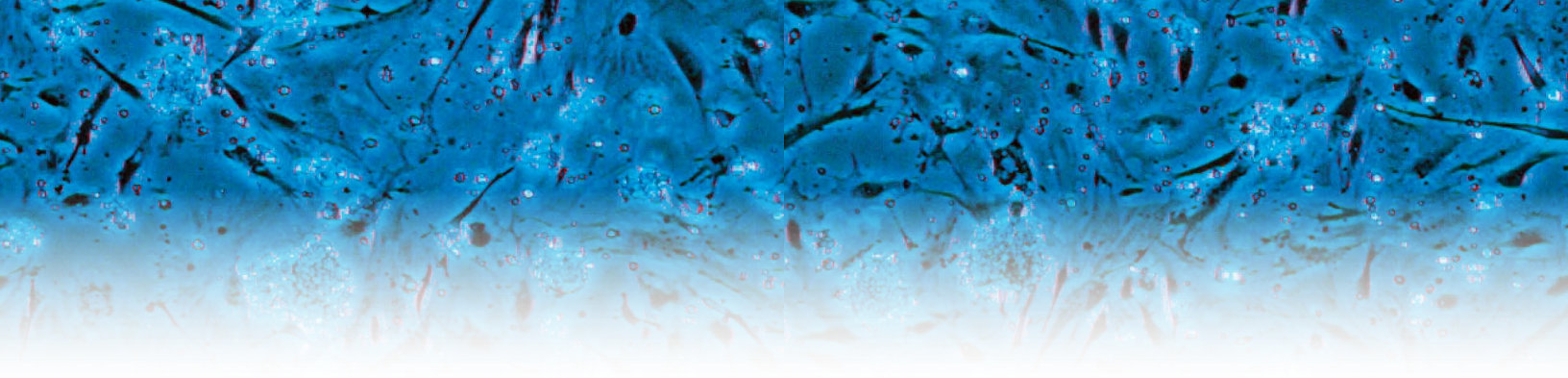
Moving towards an environmentally conscious planet requires collaboration between life and physical scientists. JoVE Environment presents research methodologies designed to provide a greater understanding of Earth's ecosystem. Special consideration is given to experimental methodologies that assess society's impact on the environment, suggest solutions for protecting Earth's resources, and develop sustainable fuel sources. *Topics include:*

- Alternative Energy Sources
- Biofuels
- Green Chemistry
- Environmental Engineering
- Ecology
- Marine Biology
- Oceanography
- Soil and Agricultural Sciences
- Ecotoxicology and Ecological Health
- Forestry and Botany
- Atmospheric Sciences and Geoscience

IMMUNOLOGY & INFECTION

Working on a shared initiative to improve global health, JoVE Immunology & Infection is focused on the areas of microbiology, allergic disease, and pathogenesis. Techniques for evaluating the biological response to pathogens from the molecular to organismal level are presented, as well as therapeutic agents and their efficacy in treating disease. *Topics include:*

- Microbiology
- Immunology
- Allergic Diseases
- Immune Cell Development and Autoimmune Diseases
- Pathogenic Bacteria, Fungi, Parasites, Viruses, and Infectious Prions
- *In vitro* and *in vivo* Modeling of Pathogenesis
- Carrier Organisms
- Global Health Studies
- Epidemiological Techniques



MEDICINE

JoVE Medicine provides basic research and clinical applications through articles demonstrating medical procedures, case studies, or clinical trial methodologies. Video articles in this section model predictive, preventative, personalized, and practical approaches to the treatment of disease aimed at improving overall patient care and prognosis. *Topics include:*

- Internal Medicine
- Clinical Trials
- Animal Models of Disease
- Surgical Subspecialties (Cardiothoracic, Neuro, Orthopedic, Oral and Maxillofacial, Transplant, etc.)
- Clinical Teaching Resources
- Human Physiology
- Oncology
- *In vivo* Imaging Techniques (Ultrasound, CT, PET, MRI)

NEUROSCIENCE

Neuroscience is a multi-disciplinary field devoted to the investigation of the structure, function, physiology, and pathophysiology of the brain and nervous system. JoVE Neuroscience includes methodologies ranging from molecular and cellular level studies to complete central and peripheral neural system studies. In addition, potential treatment platforms and surgical techniques for neurological diseases and disorders are included. *Topics include:*

- Cellular and Molecular Neurobiology
- Systems Neuroscience
- Development and Neural Plasticity
- Neurobiology of Disease
- Electrophysiology
- Neurogenesis and Neural Stem Cells
- Neurosurgery and Neuroimaging
- SCI Models
- Neurotransmitters and Neuronal Cell Signaling

GENETICS

JoVE Genetics publishes research methodologies in all areas of genetics, including genomics and mechanisms of gene expression. This section focuses on methodologies employed in human genetics as well as research on various model organisms including microbes, animals, and plants. *Topics include:*

- Gene discovery and genetic screens
- Gene regulation, function, and expression
- DNA replication, repair, and recombination
- Chromosome biology and genome organization
- Epigenetics
- Evolutionary genetics
- Sequencing technologies
- Comparative and functional genomics
- Medical genetics and gene therapy

BIOCHEMISTRY

JoVE Biochemistry encompasses methods that advance our understanding of the structure and function of biomolecules (such as proteins, nucleic acids, carbohydrates, and lipids) as well as their interactions and transformations during biological processes. *Topics include:*

- Biomolecule structure and function
- Cellular metabolism
- Lipid and membrane biochemistry
- Protein-protein and protein-nucleic acid interactions
- Protein folding, modification, and enzymology
- Bioseparation and purification

CANCER RESERACH

JoVE Cancer Research encompasses a broad range of techniques utilized in the study of cancer. This section features research methodologies that advance our understanding of carcinogenesis, mechanisms of drug resistance, diagnosis, and innovative therapeutics.. *Topics include:*

- Oncogenesis and tumor suppression
- Tumor angiogenesis and host-tumor interactions
- Mutagenesis and metastasis of cancer cells
- Cancer stem cells
- Cancer biomarkers
- Cancer epigenetics, genetics, and genomics
- *In vivo* and *In vitro* tumor models
- Tumor imaging
- Cancer therapeutics and surgical oncology

ABOUT JOVE

JoVE is the world's first PubMed-indexed scientific video journal. Its mission is to advance scientific research and education by increasing productivity, reproducibility, and efficiency of knowledge transfer for scientists, educators, and students worldwide through visual learning solutions. Today, JoVE has published over 5,000 video articles from institutions including Harvard, Stanford, MIT, and the NIH. These video articles present cutting-edge research in over a dozen different fields of study and are viewed by millions of users in over 900 institutions around the globe. Visit www.jove.com or call +1.617.401.7701 to learn more.