

SECOND EDITION

The Laboratory Rat



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American College of Laboratory
Animal Medicine Series



[DOC] The Laboratory Rat (American College Of Laboratory Animal Medicine)

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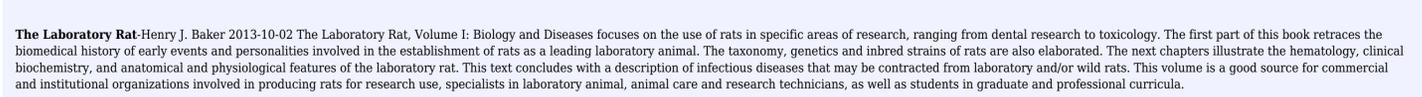
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The Laboratory Rat-Mark A. Suckow 2019-11-10 The third edition of The Laboratory Rat features updated information on a variety of topics, including rats as research models for basic and translational research in areas such as genomics, alcoholism, diabetes, metabolic syndrome, obesity, neuroscience, spinal cord injury, traumatic brain injury, regenerative medicine, and infectious disease. New information related to the husbandry and veterinary care of rats is provided including topics related to nutrition, reproduction, anesthesia and surgery, infectious and noninfectious disease, and the care of surgical and other fragile models. It is a premier source of information on the laboratory rat, this book will be of interest to veterinary and medical students, senior graduate students, postdocs and researchers who utilize animals in biomedical research. New chapters on the care of surgical and fragile models and on the use of rats in research areas such as alcoholism, regenerative medicine, spinal cord injury, traumatic brain injury, and others are included. All chapters were written by scientific and veterinary experts. This book condenses information from many sources on topics related to the care and use of rats in research. It is the premier source of information on the laboratory rat.

The Laboratory Rat-Mark A. Suckow 2005-12-20 The Laboratory Rat, Second Edition features updated information on a variety of topics including: rat genetics and genomics, both spontaneous and induced disease; state-of-the-art technology for housing and husbandry; occupational health, and experimental models. A premier source of information on the laboratory rat that will be of interest to veterinary and medical students, senior graduate, graduate students, post-docs and researchers who utilize animals in biomedical research. At least 50% new information than first edition Includes topics on rat genetics and genomics, occupational health, and experimental models The premier source of information on the laboratory rat



The Laboratory Rat-Henry J. Baker 2013-10-02 The Laboratory Rat, Volume I: Biology and Diseases focuses on the use of rats in specific areas of research, ranging from dental research to toxicology. The first part of this book retraces the biomedical history of early events and personalities involved in the establishment of rats as a leading laboratory animal. The taxonomy, genetics and inbred strains of rats are also elaborated. The next chapters illustrate the hematology, clinical biochemistry, and anatomical and physiological features of the laboratory rat. This text concludes with a description of infectious diseases that may be contracted from laboratory and/or wild rats. This volume is a good source for commercial and institutional organizations involved in producing rats for research use, specialists in laboratory animal, animal care and research technicians, as well as students in graduate and professional curricula.



Anatomy and Histology of the Laboratory Rat in Toxicology and Biomedical Research-Robert L. Maynard 2019-02-08 Anatomy and Histology of the Laboratory Rat in Toxicology and Biomedical Research presents the detailed systematic anatomy of the rat, with a focus on toxicological needs. Most large works dealing with the laboratory rat provide a chapter on anatomy, but fall far short of the detailed account in this book which also focuses on the needs of toxicologists and others who use the rat as a laboratory animal. The book includes detailed guides on dissection methods and the location of specific tissues in specific organ systems. Crucially, the book includes classic illustrations from Miss H. G. Q. Rowett, along with new color photo-micrographs. Written by two of the top authors in their fields, this book can be used as a reference guide and teaching aid for students and researchers in toxicology. In addition, veterinary/medical students, researchers who utilize animals in biomedical research, and researchers in zoology, comparative anatomy, physiology and pharmacology will find this book to be a great resource. Illustrated with over 100 black and white and color images to assist understanding Contains detailed descriptions and explanations to accompany all images, thus helping with self-study Designed for toxicologic research for people from diverse backgrounds, including biochemistry, pharmacology, physiology, immunology and general biomedical sciences



Anesthesia and Analgesia in Laboratory Animals-Richard Fish 2011-04-28 Anesthesia and Analgesia in Laboratory Animals focuses on the special anesthetic, analgesic, and postoperative care requirements associated with experimental surgery. Fully revised and updated this new edition provides the reader with agents, methods, and techniques for anesthesia and analgesia that ensure humane and successful procedural outcomes. * Provides researchers with the most comprehensive and up-to-date review of the use of anesthesia and analgesia in laboratory animals * Thoroughly updated with new material on ferrets, birds, reptiles, amphibians, fish, and invertebrates * Includes hot topic areas such as pain research, ethical issues, legal issues, and imaging studies



The Zebrafish in Biomedical Research Samuel Cartner 2019-11-22 The Zebrafish in Biomedical Research: Biology, Husbandry, Diseases, and Research Applications is a comprehensive work that fulfills a critical need for a thorough compilation of information on this species. The text provides significant updates for working vivarium professionals maintaining zebrafish colonies, veterinarians responsible for their care and well-being, zoologists and ethologists studying the species, and investigators using the species to gain critical insights into human physiology and disease. As the zebrafish has become an important model organism for the study of vertebrate development and disease, organ function, behavior, toxicology, cancer, and drug discovery, this book presents an important resource for future research. Presents a complete view of the zebrafish, covering their biology, husbandry, diseases and research applications Includes the work of world-renowned authors Provides the first authoritative and comprehensive treatment of zebrafish in biomedical research as part of the ACLAM series

The Laboratory Rabbit, Guinea Pig, Hamster, and Other Rodents-Mark A. Suckow 2012 The Laboratory Rabbit, Guinea Pig, Hamster, and Other Rodents is a single volume, comprehensive book sanctioned by the American College of Laboratory Animal Medicine (ACLAM), covering the rabbit, guinea pig, hamster, gerbil and other rodents often used in research. This well illustrated reference includes basic biology, anatomy, physiology, behavior, infectious and noninfectious diseases, husbandry and breeding, common experimental methods, and use of the species as a research model. With many expert contributors, this will be an extremely valuable publication for biomedical researchers, laboratory animal veterinarians and other professionals engaged in laboratory animal science. A new gold standard publication from the American College of Laboratory Animal Medicine series One stop resource for advancements in the humane and responsible care of: rabbit, guinea pig, hamster, gerbil, chinchilla, deer mouse, kangaroo rat, cotton rat, sand rat, and degu Includes up-to-date, common experimental methods Organized by species for easy access during bench research



The Laboratory Mouse-Hans Hedrich 2012-06-14 The Laboratory Mouse, Second Edition is a comprehensive book written by international experts. With inclusions of the newly revised European standards on laboratory animals, this will be the most current, global authority on the care of mice in laboratory research. This well-illustrated edition offers new and updated chapters including immunology, viruses and parasites, behavior, enrichment and care standards of laboratory mice across the life sciences, medical and veterinary fields. Features four-color illustrations with complete instruction on mouse surgery, anatomy, behavior and care of the mouse in laboratory research Offers additional chapters on new mouse strains, phenotyping of strains, bacteria and parasites, and immunology Includes the newly revised EU standards on care, as well as, comparisons to standards and regulations in the US and other countries

Boorman's Pathology of the Rat-Andrew W. Suttie 2017-12-18 Boorman’s Pathology of the Rat: Reference and Atlas, Second Edition, continues its history as the most comprehensive pathology reference on rat strains for researchers across science and medicine using rat models in the laboratory. It offers readers an added emphasis on the Sprague-Dawley and Wistar rat strains that is consistent with current research across academia, government, and industry. In addition, the book provides standard diagnostic criteria, basic content on histology, histological changes that result from drug toxicity and neoplasm, pathology terminology, and four-color photographs from the NTP archive and database. With updated references and photographs, as well as coverage of all rat strains, this book is not only the standard in the field, but also an invaluable resource for toxicologists, biologists, and other scientists engaged in regulatory toxicology who must make the transition from pathology results to the promulgation of meaningful regulations. Contains full, four color photographs from the NTP archive and database and coverage of all rat strains Provides an organ-by-organ and system-by-system approach that presents standard diagnostic criteria and basic content on histology and histological changes Includes comprehensive and detailed background incidence data Presents detailed descriptive content regarding changes in rat models during research

Critical Care Management for Laboratory Mice and Rats-F. Claire Hankenson 2013-10-03 For critical care of laboratory rodents, there is a scarcity of sources for comprehensive, feasible, and response-oriented information on clinical interventions specific to spontaneous and induced models of disease. With the more complex cases that need critical care management, many treatment approaches to veterinary emergencies cannot be applied directly to the laboratory rodent. The first text of its kind devoted to the challenges of critical care management for laboratory rodents, Critical Care Management for Laboratory Mice and Rats provides a specialized resource for all veterinary, husbandry, technical, and research professionals who utilize rodent models for biomedical research. The book covers the varied approaches to laboratory rodent patient care, health assessments, characteristics of specific disease models, monitoring and scoring of disease parameters, and humane interventions. Giving primary consideration to preservation of animal health and welfare, the text also considers how best to balance welfare with the achievement of proposed scientific objectives. Organized into five chapters, this full-color book covers the following topics: General Approaches for Critical Care Critical Care Management for Laboratory Mice Critical Care Management for Laboratory Rats Special Considerations for Critical Care Management in Laboratory Rodents Resources and Additional Information The author provides treatment guidelines with the expectation that they will be applied with apt professional judgment, allowing for further modification of clinical recommendations for improved patient-based care and welfare for research animals.



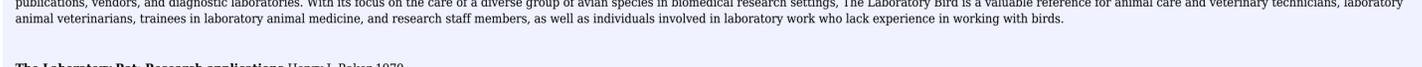
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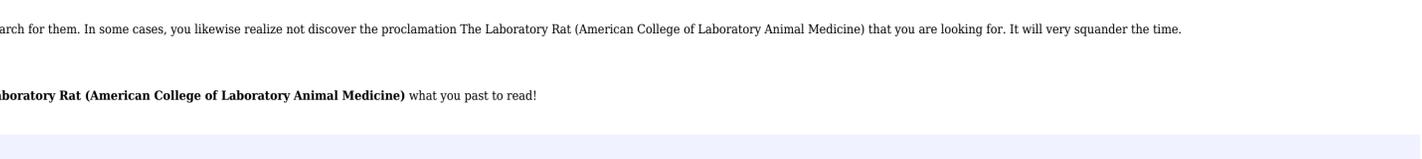
Atlas of Histology of the Juvenile Rat-George A Parker 2016-05-04 Atlas of Histology of the Juvenile Rat should be of interest to toxicologic pathologists, toxicologists, and other biological scientists who are interested in the histomorphology of juvenile rats. For several decades the laboratory rat has been used extensively in nonclinical toxicology studies designed to detect potential human toxicity of drugs, agrochemicals, industrial chemicals, and environmental hazards. These studies traditionally have involved young adult rats that are 8-10 weeks of age as studies are started. It is becoming increasingly apparent that children and young animals may have different responses to drug/chemical exposures, therefore, regulatory agencies are emphasizing toxicology studies in juvenile animals. While the histologic features of organs from young adult and aged laboratory rats are well known, less is known about the histologic features of organs from juvenile rats. Final histologic maturity of many organs is achieved postnatally, thus immature histologic features must be distinguished from chemical- or drug-related effects. While this postnatal organ development is known to exist as a general concept, detailed information regarding postnatal histologic development is not readily available. The Atlas includes organs that are typically sampled in nonclinical toxicology studies and presents the histologic features at weekly intervals, starting at birth and extending through postnatal day 42. Written and edited by highly experienced, board-certified toxicologic pathologists Includes more than 700 high-resolution microscopic images from organs that are typically examined in safety assessment toxicology studies Detailed figure legends and chapter narratives present the salient features of each organ at each time interval Figures are available for further study via Elsevier’s Virtual Microscope, which allows viewing of microscopic images at higher magnification Valuable resource for toxicologic pathologists who are confronted with interpretation of lesions in juvenile rats in situations where age-matched concurrent controls are not available for comparison, e.g., with unscheduled decedents Figures are available for further study on ScienceDirect with Virtual Microscope, which allows viewing of microscopic images at higher magnification

The Laboratory Bird-Douglas K Taylor 2015-11-18 Laboratory animals, including birds, play an important role in biomedical research. The humane care and management of these animals is an ongoing concern. A new addition to the acclaimed Laboratory Animal Pocket Reference series, The Laboratory Bird is the first publication dedicated to the care and use of avian species in the research setting. Covering avian species such as chickens, ducks, doves, parrots, and songbirds that are commonly used as research models, the book is divided into focused chapters that cover a broad range of topics, including: General avian biology and physiology Husbandry Regulations and regulatory compliance regarding the use of birds in research Experimental methods Veterinary care Along with discussing applicable regulations, the book also details issues of health management and quarantine approaches. The final chapter provides resources such as organizations, publications, vendors, and diagnostic laboratories. With its focus on the care of a diverse group of avian species in biomedical research settings, The Laboratory Bird is a valuable reference for animal care and veterinary technicians, laboratory animal veterinarians, trainees in laboratory animal medicine, and research staff members, as well as individuals involved in laboratory work who lack experience in working with birds.

The Laboratory Rat: Research applications-Henry J. Baker 1979



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The Biology of the Laboratory Rabbit-Patrick J. Manning 2014-04-25 After nearly 20 years, the publication of this Second Edition of The Biology of the Laboratory Rabbit attests to its popularity within the scientific community as well as to the need to update an expanding database on the rabbit as a major species in laboratory investigation. The principal aim of this text is to provide a comprehensive and authoritative source of scientifically based information on a major laboratory animal species. The text continues to emphasize the normal biology as well as diseases of the European (domestic) rabbit, *Orytolagus cuniculus*, especially the New Zealand White breed, with occasional reference to other rabbit species (*Sylvilagus* sp.) and hares (*Lepus* sp.). New topics have been added to this second edition in response to changing trends in biomedical research and product testing as well as to suggestions from readers. New chapters included on: Anesthesia and analgesia Models in infectious disease research Models in ophthalmology and vision research Polyclonal antibody production Toxicity and safety testing Drug doses and clinical reference data



The Clinical Chemistry of Laboratory Animals-David M. Kurtz 2017-10-18 Key features: Serves as the detailed, authoritative source of the clinical chemistry of the most commonly used laboratory animals Includes detailed chapters dedicated to descriptions of clinical chemistry-related topics specific to each laboratory species as well as organ/class-specific chapters Presents information regarding evaluation and interpretation of a variety of individual clinical chemistry end points Concludes with detailed chapters dedicated to descriptions of statistical analyses and biomarker development of clinical chemistry-related topics Provides extensive reference lists at the end of each chapter to facilitate further study Extensively updated and expanded since the publication of Walter F. Loeb and Fred W. Quimby’s second edition in 1999, the new The Clinical Chemistry of Laboratory Animals, Third Edition continues as the most comprehensive reference on *in vivo* animal studies. By organizing the book into species- and organ/class-specific chapters, this book provides information to enable a conceptual understanding of clinical chemistry across laboratory species as well as information on evaluation and interpretation of clinical chemistry data relevant to specific organ systems. Now sponsored by the American College of Laboratory Animal Medicine (ACLAM), this well-respected resource includes chapters on multiple laboratory species and provides pertinent information on their unique physiological characteristics, methods for sample collection, and preanalytical sources of variation for the particular species. Basic methodology for common procedures for each species is also discussed. New Chapters in the Third Edition Include: The Laboratory Zebrafish and Other Fishes Evaluation of Cardiovascular and Pulmonary Function and Injury Evaluation of Skeletal Muscle Function and Injury Evaluation of Bone Function and Injury Vitamins Development of Biomarkers Statistical Methods The Clinical Chemistry of Laboratory Animals, Third Edition is intended as a reference for use by veterinary students, clinical veterinarians, veterinary toxicologists, veterinary clinical pathologists, and laboratory animal veterinarians to aid in study design, collection of samples, and interpretation of clinical chemistry data for laboratory species.



The Lab Rat Chronicles-Kelly Lambert 2011-06-07 Discover What Rodents Know About the Good Life What can the common laboratory rat tell us about being human? According to behavioral neuroscientist Kelly Lambert, a whole lot. Her twenty- five-year career conducting experiments that involve rats has led her to a surprising conclusion: Through their adaptive strategies and good habits, these unassuming little animals can teach us some essential lessons about how we, as humans, can lead successful lives. From emotional resilience and a strong work ethic to effective parenting and staying healthy, the lab rat is an unlikely but powerful role model for us all. This is a surprising and engaging guided tour into the sophisticated mental, emotional, and behavioral worlds of these frequently maligned and often misunderstood little creatures.



Nutrient Requirements of Laboratory Animals, National Research Council 1995-02-01 In the years since the third edition of this indispensable reference was published, a great deal has been learned about the nutritional requirements of common laboratory species: rat, mouse, guinea pig, hamster, gerbil, and vole. The Fourth Revised Edition presents the current expert understanding of the lipid, carbohydrate, protein, mineral, vitamin, and other nutritional needs of these animals. The extensive use of tables provides easy access to a wealth of comprehensive data and resource information. The volume also provides an expanded background discussion of general dietary considerations. In addition to a more user-friendly organization, new features in this edition include: A significantly expanded section on dietary requirements for rats, reporting substantial new findings. A new section on nutrients that are not required but that may produce beneficial results. New information on growth and reproductive performance among the most commonly used strains of rats and mice and on several hamster species. An expanded discussion of diet formulation and preparation—including sample diets of both purified and natural ingredients. New information on mineral deficiency and toxicity, including warning signs. This authoritative resource will be important to researchers, laboratory technicians, and manufacturers of laboratory animal feed.

Laboratory Mouse and Laboratory Rat Procedural Techniques-John J. Bogdanske 2021-02-25 Despite the fact that the majority of research animals are rodents, the trainers at the Research Animal Resources Center at the University of Wisconsin-Madison found training material on the proper handling of mice and rats in biomedical research to be limited. So, they developed videos, narratives, pictures, and text to teach common handling, inje



Laboratory Animal Medicine-Margi Sirois 2005 This combination text and lab manual provides clinically relevant coverage of laboratory animal medicine and procedures. It covers a variety of species, including rats, mice, guinea pigs, hamsters, rabbits, gerbils, ferrets, nonhuman primates, and in a separate chapter, nontraditional lab animals, such as swine, chinchillas, armadillos, reptiles, amphibians, bats, farm animals, and dogs and cats. Coverage of each species is presented in a consistent format that includes taxonomy, anatomy and physiology, uses in biomedical research, reproduction, behavior, husbandry, restraint and handling, identification methods, injection techniques, medication administration and anesthesia, blood collection, common diseases, and euthanasia. Other key topics include the laboratory setting, regulatory guidelines, and ethical considerations. The lab manual portion of the book features a variety of exercises and observation sheets. Comprehensive coverage of a variety of topics such as animal species, the laboratory setting, regulatory guidelines, and ethical considerations prepares readers for a career in laboratory animal medicine Familiarizes readers with the handling, behavior, nutrition, and lab and treatment procedures for a large variety of common and nontraditional laboratory animals The consistent organization of each species chapter makes it easy for readers to quickly identify similarities and differences among various laboratory animals Laboratory exercises are included in a perforated section at the end of the book, allowing users to apply their knowledge and develop job skills Features a wealth of user-friendly features such as a two-color design, learning objectives, key points, and review questions Provides detailed information on specific legal and ethical requirements of lab animal care and use, including the ethics of pain management Convenient boxes and tables provide quick access to important anatomic and physiologic data for each species Discusses specific uses of each species in biomedical research, providing readers with a perspective on animal use that allows them to explain the benefits of animal use as required by veterinary technology program accreditation procedures



Dirty Rats?-Darrin Lunde 2015-02-10 Nobody likes a rat. And we’re not talking about a snitch here. We’re talking about those disgusting bald-tailed rodents that scurry around alleys and in the subway. But, hold on . . . are rats really so bad? There are hundreds of rat species all around the world that defy common stereotypes. Rats help predators survive, allow plants to spread their seeds, and even contribute to medical research that helps humans stay healthy. Simple, clear text introduces many of the rats that crawl on the earth today, where they live, what they eat, and how they survive. Next time you see a rat, take a second look.

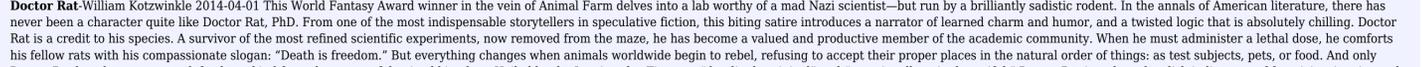


Research Regulatory Compliance-Mark A. Suckow 2015-06-14 Research Regulatory Compliance offers the latest information on regulations and compliance in the laboratory. With the increasing complexity of regulations and need for institutional infrastructure to deal with compliance of animal use issues, as well as a requirement surrounding human subjects, this publication provides reputable guidance and information. The book is extremely helpful as a resource for researchers, administrators, and technicians in the laboratory, and is also a great asset for faculty or new researchers coming in to the laboratory environment. It will help prepare users for the deluge of regulatory and compliance issues they will face while conducting their scientific programs. The book is edited and authored by known leaders in the field of compliance and regulations, and contains extensive research on the topics. It represents the new standard for information in every laboratory. Provides a “one-stop” , go-to resource for the many regulatory and compliance issues that affect laboratory study and research models Extremely helpful as a resource for researchers, administrators, and technicians in the laboratory, and also a great asset for faculty or new researchers coming in to the laboratory environment Focuses on United States regulations, covering both animal models and human subjects Written and edited by known leaders in the field of regulatory compliance who bring many years of collective experience to the book

The Behavior of the Laboratory Rat-Ian Q. Whishaw 2004-09-02 Both seasoned and beginning investigators will be amazed at the range and complexity of rat behavior as described in the 43 chapters of this volume. The behavioral descriptions are closely tied to the laboratory methods from which they were derived, thus allowing the investigator to exploit both the behavior and the methods for their own research. It will also serve as an indispensable reference for other neuroscientists, psychologist, pharmacologists, geneticists, molecular biologists, zoologists, and their students and trainees.

Animal Models in Toxicology-Shayne C. Gad 2006-10-30 Reflecting more than a decade's worth of changes, Animal Models in Toxicology, Second Edition is a practical guide to the common statistical problems encountered in toxicology and the methodologies that are available to solve them. The book presents a historical review of the use of animal models and an overview of broad considerations of the

Doctor Rat-William Kotzwinkle 2014-04-01 This World Fantasy Award winner in the vein of Animal Farm delves into a lab worthy of a mad Nazi scientist—but run by a brilliantly sadistic rodent. In the annals of American literature, there has never been a character quite like Doctor Rat, PhD. From one of the most indispensable storytellers in speculative fiction, this biting satire introduces a narrator of learned charm and humor, and a twisted logic that is absolutely chilling. Doctor Rat is a credit to his species. A survivor of the most refined scientific experiments, now removed from the maze, he has become a valued and productive member of the academic community. When he must administer a lethal dose, he comforts his fellow rats with his compassionate slogan: “Death is freedom.” But everything changes when animals worldwide begin to rebel, refusing to accept their proper places in the natural order of things: as test subjects, pets, or food. And only Doctor Rat has the courage to defend mankind from the ungrateful animal kingdom. Hailed by the Los Angeles Times as “dazzlingly original” and “occasionally quite beautiful,” Doctor Rat is a sly and stylish indictment of fanaticism in mice and men. “A truly imaginative impresario . . . [Doctor Rat] teases your conscience with educated wit and versatile improvisation, not to mention the casual flick of the tail about to be cut off.” —Kirkus Reviews



Pathology of Laboratory Rodents and Rabbits-Stephen W. Barthold 2016-01-04 Now in its fourth edition, Pathology of Laboratory Rodents and Rabbits has become a standard text for veterinary pathologists, laboratory animal veterinarians, students, and others interested in these species. • The standard reference on the pathogenesis and cardinal diagnostic features of diseases of mice, rats, hamsters, gerbils, guinea pigs, and rabbits • Expanded coverage of rabbit disease, normal anatomic features, and biology • Over 450 color photographs illustrating gross and microscopic pathology • Companion website offering images from the text in PowerPoint

The Biology of the Guinea Pig-Joseph E. Wagner 2014-04-25 The Biology of the Guinea Pig focuses on the use of the guinea pig as a substrate in research. This book provides a comprehensive coverage of material related to applied care and management of guinea pigs and their diseases. Topics on guinea pig behavior, genetics, specific pathogen-free technique, biomet hodology, and colony husbandry are also covered. This text likewise deals with the noninduced diseases of guinea pigs and use of the guinea pig in nutrition research, otologic research, toxicology, and teratology. This publication is beneficial to the general scientific community that includes investigators using or considering the use of guinea pigs in research, veterinarians, students of veterinary medicine, professionals concerned with the care and management of guinea pigs, commercial producers of guinea pigs, and cavy fanciers.

Guidelines for the Care and Use of Mammals in Neuroscience and Behavioral Research-National Research Council 2003-08-22 Expanding on the National Research Council’s Guide for the Care and Use of Laboratory Animals, this book deals specifically with mammals in neuroscience and behavioral research laboratories. It offers flexible guidelines for the care of these animals, and guidance on adapting these guidelines to various situations without hindering the research process. Guidelines for the Care and Use of Mammals in Neuroscience and Behavioral Research offers a more in-depth treatment of concerns specific to these disciplines than any previous guide on animal care and use. It treats on such important subjects as: The important role that the researcher and veterinarian play in developing animal protocols. Methods for assessing and ensuring an animal’s well-being. General animal-care elements as they apply to neuroscience and behavioral research, and common animal welfare challenges this research can pose. The use of professional judgment and careful interpretation of regulations and guidelines to develop performance standards ensuring animal well-being and high-quality research. Guidelines for the Care and Use of Mammals in Neuroscience and Behavioral Research treats the development and evaluation of animal-use protocols as a decision-making process, not just a decision. To this end, it presents the most current, in-depth information about the best practices for animal care and use, as they pertain to the intricacies of neuroscience and behavioral research.

The Minipig in Biomedical Research-Peter A. McNulty 2011-12-19 The Minipig in Biomedical Research is a comprehensive resource for research scientists on the potential and use of the minipig in basic and applied biomedical research, and the development of drugs and chemicals. Written by acknowledged experts in the field, and drawing on the authors’ global contacts and experience with regulatory authorities and the pharmaceutical and other industries, this accessible

manual ranges widely over the biological, scientific, and practical uses of the minipig in the laboratory. Its coverage extends from the minipig's origins, anatomy, genetics, immunology, and physiology to its welfare, health, and husbandry; practical dosing and examination procedures; surgical techniques; and all areas of toxicity testing and the uses of the minipig as a disease model. Regulatory aspects of its use are considered. The reader will find an extensive amount of theoretical and practical information in the pharmacology; ADME and toxicology chapters which will help scientists and managers when deciding which species to use in basic research; drug discovery and pharmacology; and toxicology studies of chemicals, biotechnology products and devices. The book discusses regulatory uses of minipigs in the evaluation of human and veterinary pharmaceuticals, medical devices, and other classes of xenobiotics. It describes features of normal health, normal laboratory values, and common diseases. It also carefully elucidates ethical and legal considerations in their supply, housing, and transport. The result is an all-inclusive and up to date manual about the experimental uses of the minipig that describes 'How to' and 'Why' and 'What to expect in the normal', combining enthusiasm and experience with critical assessment of its values and potential problems.

Use of Laboratory Animals in Biomedical and Behavioral Research-National Research Council 1988-02-01 Scientific experiments using animals have contributed significantly to the improvement of human health. Animal experiments were crucial to the conquest of polio, for example, and they will undoubtedly be one of the keystones in AIDS research. However, some persons believe that the cost to the animals is often high. Authored by a committee of experts from various fields, this book discusses the benefits that have resulted from animal research, the scope of animal research today, the concerns of advocates of animal welfare, and the prospects for finding alternatives to animal use. The authors conclude with specific recommendations for more consistent government action.

National Library of Medicine Audiovisuals Catalog-National Library of Medicine (U.S.) 1987

The Play of Daniel Keyes' Flowers for Algernon-Bert Coules 1993 The Heinemann Plays series offers contemporary drama and classic plays in durable classroom editions. Many have large casts and an equal mix of boy and girl parts. This play is a dramatization of Daniel Keyes's story about a retarded adult who desperately wants to be able to read and write.

Lab Rats-Dan Lyons 2018-10-23 "A fascinating, thought-provoking, hilarious, and sometimes harrowing account of current work culture."--Gretchen Rubin, #1 New York Times bestselling author of The Happiness Project Why do so many people hate their jobs? Lab Rats is a groundbreaking, examination of how the half-baked ideas of Silicon Valley and its "new oligarchs" have changed the way we work, damaged our brains, and left us poorer and insecure. After publishing Disrupted, his bestselling memoir of his disastrous experience working for a young tech company, Dan Lyons watched, astonished, as hundreds of readers wrote to him with their own harrowing stories of discrimination on the job, fear-mongering managers, and companies denigrating employees in pursuit of quick profit. The problems he had identified in the start-up world, Lyons realized, are infecting virtually every kind of job in America--at a time when companies are giving more lip service than ever about happy employees. What happened to work? Who is responsible? And does any company have a model for doing it right? As Lyons ventured across America in pursuit of answers, he came to identify "Four Factors," a series of ideas that have broken the social contract that once existed between companies and their employees. These new, often dystopian notions about work have made millions subject to constant change, dehumanizing

technologies, and even health risks. A few companies, however, get it right. With Lab Rats, Lyons makes a passionate plea for business leaders to understand this dangerous transformation and offers a way out--"an approach to work and business that puts people first, profitably serves customers, and makes the world a little bit better in the process" (Tom Peters, New York Times bestselling author of In Search of Excellence).

Stereotaxic Neurosurgery in Laboratory Rodent-Barbara Ferry 2014-04-22 Stereotaxic neurosurgery in rodents is used by a variety of people working at research laboratories (research staff, technicians, students at animal facilities...). The present handbook presents all the steps necessary to complete a stereotaxic neurosurgery protocol in accordance with current animal welfare guidelines. This book will guide surgeons step by step, from anesthesia to the post-surgery recovery procedures, including asepsis of the surgical tools and surgical zone, analgesia, correctly identifying the reference points on the skull and brain targets, etc. In keeping with the current international trends, the authors above all focus on the following points: the consideration of pain and how to best treat it depending on the type of surgery; and ensuring asepsis. This book will serve as an important reference work and valuable guidebook for the scientific community.

The Laboratory Rat-Patrick Sharp 2012-12-11 Rats have long been recognized as a valuable biomedical research model, notably in the investigation of aging, toxicology, addiction, and common human diseases such as diabetes and hypertension. In many instances, individuals conducting such research studies are charged with important responsibilities, including animal facility management, animal h

Handbook of Models for Human Aging-P. Michael Conn 2011-04-28 The Handbook of Models for Human Aging is designed as the only comprehensive work available that covers the diversity of aging models currently available. For each animal model, it presents key aspects of biology, nutrition, factors affecting life span, methods of age determination, use in research, and disadvantages/advantes of use. Chapters on comparative models take a broad sweep of age-related diseases, from Alzheimer's to joint disease, cataracts, cancer, and obesity. In addition, there is an historical overview and discussion of model availability, key methods, and ethical issues. Utilizes a multidisciplinary approach Shows tricks and approaches not available in primary publications First volume of its kind to combine both methods of study for human aging and animal models Over 200 illustrations

The China Study-T. Colin Campbell 2006 A guide that cuts through the haze of misinformation and delivers an insightful message to anyone living with or at risk from the following: cancer, diabetes, heart disease, obesity, Alzheimer's disease and/or osteoporosis. Dr Campbell illuminates the connection between nutrition and these often fatal diseases and reveals the natural human diet. He also examines the source of nutritional confusion produced by powerful lobbies, government entities and opportunist scientists. Part medical thriller, part governmental exposé.