

<<实验动物学>>

图书基本信息

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内容概要

实验动物科学是指脊椎动物在医学、教学或药物和毒物实验研究中的应用，研究人员、技术人员、兽医、教师和学生等在从事动物有关的操作和研究中，必须经过严格的学习和培训，以确保实验动物研究和应用在科学和人道的前提下进行。

《实验动物学（英文版）》是广大学生、研究人员、实验动物从业人员和兽医等学习和从事动物科学研究的有用指导材料。

书中在详细介绍动物科学在我国和世界各国的发展历史的同时，对常见实验动物的解剖和生理特点，繁殖和管理方法，大鼠、小鼠、兔、猫、狗、猪、猴和蛙类等医学、药理学和毒理学中的用途都进行了全面论述。

书中还对转基因动物和转基因技术和常用动物实验方法进行了介绍。

附录部分列举了动物实验实例操作规程，动物的生理、生化正常值以及世界范围内与实验动物科学有关的网站，供读者继续学习和查阅。

书籍目录

Chapter 1 Introduction of Laboratory Animal Science
1.1 History of Laboratory Animal Science
1.2 Organizations Associated with Laboratory Animal Science
1.3 Animal Welfare
1.4 Animals Used in Research, Product Safety Testing and Teaching
1.5 Regulations, Policies and Principles Governing the Care and Use of Laboratory Animals
1.6 Facility, Equipment, Housing and Management
1.7 Classifications of Animals According to the Burden of Resident Micro-organisms
Chapter 2 Mice
2.1 Genetics
2.2 Ecological Types
2.3 Uses
2.4 Behavior
2.5 Anatomic and Physiologic Features
2.6 Breeding and Reproduction
2.7 Housing and Environment
2.8 Environmental Enrichment
2.9 Feeding and Watering
2.10 Sanitation
2.11 Techniques
Chapter 3 Rats
3.1 Genetics
3.2 Ecologic Types
3.3 Uses
3.4 Behavior
3.5 Anatomic and Physiologic Features
3.6 Breeding and Reproduction
3.7 Housing and Environment
3.8 Environmental Enrichment
3.9 Feeding and Watering
3.10 Sanitation
3.11 Techniques
Chapter 4 Gerbils
Chapter 5 Hamsters
Chapter 6 Guinea Pigs
Chapter 7 Rabbits
Chapter 8 Cats
Chapter 9 Dogs
Chapter 10 Pigs
Chapter 11 Nonhuman Primates
Chapter 12 Amphibians
Chapter 13 Animal Genetics and Breeding
Chapter 14 Laboratory Techniques
Chapter 15 Research Methodology
Appendix
References

章节摘录

Chapter 15 Research Methodology In the broadest sense , toxicology is the science of poisons and the harmful or noxious effects these substances have on living organisms. In today's scientific community a toxicologist is an individual who is responsible for predicting the toxic or harmful nature of a substance. A toxicologist is responsible for designing experiments that will supply the data necessary to assess the toxicity of materials. These data help toxicologists make predictions about the hazardous nature of materials tested and their potential impact on the environment and on human populations. A toxicologist must be a multifunctional scientist , familiar with pharmacology , biochemistry , pharmacodynamics , physiology , inorganic and organic chemistry , and cellular and molecular biology. Acute toxicity , subchronic , chronic , and reproductive tests , are the principal experiments conducted in a toxicology laboratory. In addition , there are many types of cancers that affect humans and other species. Learning the cause , progression , diagnosis , and treatment for these diseases. Animals are frequently used in such studies , especially where cause , early diagnosis , and untested treatment methods are being evaluated. Animal models of cancer are generally classified as two types , induced disease and spontaneous disease.

15.1 Acute Toxicity Tests In most acute (in this case the term acute refers to short-term) toxicity tests , an animal such as a mouse is given a single dose of a test substance. One measure of acute toxicity is the lethal dose 50 (LD₅₀) . This is defined as the dose of a substance that kills 50 percent of the animals tested. Other acute studies are set up to assess the toxicity of products placed in contact with animal tissue to evaluate local tissue irritation. Examples of such tests are the Draize skin and eye assays. Acute toxicity tests utilizing animals have been criticized , mainly if they are used to evaluate non-pharmaceuticals such as cosmetics and household products. Currently a large number of researches are underway seeking alternatives to the use of the LD₅₀ in animals. Until the non-animal alternative tests have proved reliable , it is most certain that tests using animals will continue to be used as the definitive means of maintaining public safety.

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