

Replacement
Database on alternatives on the internet-Zebet-The ZEBET database is mainly designed to support the examination of the imperative nature of animal experiments by providing information on possible alternative methods.
The EURL ECVAM DataBase service on ALternative Methods (DB-ALM)-The DB-ALM is a public, factual database service that provides evaluated information on development and applications of advanced and alternative methods to animal experimentation in biomedical sciences and toxicology, both in research and for regulatory purposes.
EURL ECVAM QSAR Model Inventory of the Commission’s Joint Research Centre (JRC)-In the regulatory assessment of chemicals (e.g. under REACH), (Q)SAR models are playing an increasingly important role in predicting properties for hazard and risk assessment. This implies both a need to be able to identify relevant (Q)SARs and to use them to derive estimates and/or have access to their pre-calculated estimates. To help meet these needs, we are developing an database of (Q)SAR models (i.e. an inventory of information on the models). The JRC QSAR Model Database is freely accessible from this website.
NORINA (A Norwegian Inventory of Audiovisuals)-NORINA (A Norwegian Inventory of Alternatives) is an English-language database containing information on over 3,500 audiovisual aids that may be used as alternatives or supplements to the use of animals in education and training, including dissection alternatives, at all levels from Junior School to University. The information in the database has been collected from 1991 onwards.
European consensus-platform for alternatives (ECOPA)-The primary aim of ecopa is to promote "the three Rs" (Replacement, Reduction and Refinement) in the use of animals in research, testing, education and training in Europe. ecopa strives for consensus between all four stakeholders in attempting to achieve its goals:
Fund for the Replacement of Animals in Medical Experiments (FRAME)-Alternatives lab-The FRAME lab uses cells derived from human tissues to produce biologically relevant in vitro models of human organs, which behave and respond in the way they would in the body. Rather than growing cells as a single layer on plastic surfaces, we use three dimensional scaffolds and introduce flow into our systems to replicate the environment found in living humans. Current cell models include: human liver, skeletal muscle, adipose tissue and skin.
Alternatives-NIH-USA-ICCVAM-US site with explanations and sources of alternatives
Alternatives test methods table-Canadian 3Rs microsite-The Alternative Test Methods Table is a resource for investigators and regulators on the validation and regulatory status of alternatives to animal-based regulatory test methods.
It includes only those methods which have at least reached the stage of being considered for a validation study (i.e. method development, pre-validation, and method/protocol standardization are complete).
InVitroJobs-Internet platform for animal free research-German site
Grants and funding for non-animal research-separate page from theGerman site above
Frame alternatives projects
The 10Rs Strategy-Sabre research uk strategy-RESPOND - REPLICATE - REGISTER - REPORT - RECORD - REVIEW - REGULATE - REAPPRAISE - RATIONALISE - REINVENT - REPRESENT +
Anzccart-Resource bank alternatives This section contains a selection of resources highlighting the alternatives to using animals in research, testing and teaching.
de fr en print view
3R-INFO-BULLETIN Swiss 3Rs
American Fund for Alternatives to animal research (AFAAR)-AFAAR first helped make history by funding a landmark alternative to the infamous Draize rabbit eye test, later adopted by some major product and cosmetics companies. Over the years, AFAAR has funded alternatives worldwide, including more than 200 human tissue culture tests to replace toxicity and other testing on animals
Mandatory Alternatives Petition (US)-The Mandatory Alternatives Petition seeks to change the way drug testing is done in laboratories before drugs are tested on people. The MAP asks the U.S. FDA to mandate the use of scientifically proven drug testing methods that replace the use of animals.
Ethical Science Education (Library of alternatives for dissection)-US-Founded in 1895, the New England Anti-Vivisection Society (NEAVS) is a Boston-based, national animal advocacy organization dedicated to ending the use of animals in research, testing, and science education. Through research, outreach, education, legislation, and policy change, NEAVS advocates for replacing animals with modern alternatives that are ethically, humanely, and scientifically superior.
Research Animal resources (US)-Appendix A of the Animal Usage Form asks for the methods used to search for alternatives to procedures that may cause more than slight pain or distress to animals. Examples of these methods would be a literature search (indexes searched and keywords used should be listed), consultation with peers in the field, and consultation with the National Agricultural Library's Animal Welfare Information Center (described below) or the Johns Hopkins Center for Alternatives to Animal Testing (see below). [Guidance document from USDA on alternatives searches]
RSPCA-Useful alternative approaches •the use of isolated cells and tissues •using computers and mathematics to model biological processes and predict the effects of chemicals and drugs •designing ways of doing experiments safely in human volunteers •using simple organisms, such as bacteria, to study basic biological processes •exploring new advanced technologies such as robotics, molecular techniques, tissue engineering and 'organs-on-microchips' •not doing the experiment at all is one option - we encourage greater consideration of whether animal use could be avoided through more critical ethical review.
About Animal Testing Alternatives-Below are our articles on the subject of Alternatives. If you can't see what you are looking for our other categories are displayed on the left under 'Our Quick Links'
A non-animal technologies roadmap for the UK This roadmap, vision and strategy for non-animal technologies in the UK has been drawn up by Innovate UK, the National Centre for the Replacement Refinement and Reduction of Animals in Research, the Biotechnology and Biological Sciences Research Council, the Defence, Science and Technology Laboratory, the Engineering and Physical Sciences Research Council and the Medical Research Council, and has been published on their behalf by Innovate UK. It is intended to guide the efforts of all those working in this area. The issues outlined and the recommendations have come out of extensive discussions between the six organisations that are endorsing the roadmap and with many other key stakeholders. The participation and endorsement by the six organisations reflects their continuing interest in non-animal technologies, but should not be construed as a commitment to ensuring its delivery.

Refinement
Guidelines for the care and use of animals in research and teaching-Norecopa has therefore constructed four databases, which together with all the text on this website can be searched simultaneously using the search field at the top of every page
Norecopa films and videos animal procedures and handling
Classic Audiovisual database-Norina-The Classic AVs database complements NORINA by providing information on audiovisual products produced some years ago, using technology which has been surpassed by modern digital techniques. We offer this collection for those who wish to continue to use classic technology.
FRAME carries out both lab-based and office-based research. Click on the links for more information.
Frame training schools
Procedures with Care Website-This website provides a series of resources to support the adoption of best practice for commonly used procedures in animal research.
Care and Techniques-Canadian 3Rs microsite-The third 'R', Refinement, is essential to consider for people who are caring for animals used in science and/or carrying out scientific procedures on animals.
Species specific resources- Canadian 3Rs microsite-Many of the resources cited on this microsite are specific to certain types of animals. To assist in finding these resources the Animal Index groups Three Rs resources by category and/or species of animal.
NZ Resource bank- Pain Management-Information on how to better manage pain in research animals
NZ Resource bank- anaesthesia information-The following articles have been selected by panel members of ANZCCART to help researchers and AEC members improve their understanding of anaesthesia in research animals
Refinement of blood sampling-NC3Rs-Blood sampling can be stressful for laboratory animals because of the handling, restraint, anaesthesia or discomfort associated with a particular technique
Handling and restraint-NC3Rs- Good training in non-aversive handling has benefits for the animal, for the handler and for the reliability of data gained in experiments.
Humane endpoints-NC3Rs-There are several stages to consider when planning and carrying out studies involving animals to establish, implement and refine humane endpoints.
Welfare assessment-NC3Rs-The term 'welfare assessment' applies not only to monitoring animals for signs of pain, suffering and distress associated with procedures, but also to the routine assessment of all animals to check for any health or welfare problems
Euthanasia-NC3Rs-The careful selection of the method by which animals are killed is imperative to ensure that the animals are given the most humane death possible.
Analgesia and pain assessment-NC3Rs-Considerable progress has been made over the last decade in preventing or alleviating pain. In particular, there is now considerable opportunity to minimise or eliminate pain following surgical procedures. A wide range of analgesics are available, so it would seem a simple process to administer one of these agents to prevent or alleviate postoperative pain.
Laboratory animal anaesthesia for minor procedures-EU Module 20 video
Grimace scales-Research by Dr Jeffrey Mogil and colleagues, McGill University, has demonstrated that changes in facial expression provide a reliable and rapid means of assessing pain in mice, rabbits and rats. 'Grimace scales' have been developed for these species, based on changes in a number of 'facial action units', such as narrowing of the eyes (orbital tightening) or changes in the position and shape of the whiskers.
LAS Training e-learning-The website LAS interactive (LAS = Laboratory Animal Science) contains a wide range of information on animals in research and on scientific methods in animal experiments. The platform brings together the free information portal-vtk online was developed at the Philipps University of Marburg
3Rs Info Bulletin-Switzerland
RSPCA Joint working group on Refinement-The JWGR organises working groups with experts from industry, academia and animal welfare to prepare reports on a variety of specific topics. They set out recommendations for good practice and define practical ways of reducing suffering associated with husbandry and procedures.
RSPCA Reduce Suffering-Welfare assessment tool-The suffering that animals experience when they are used in research and testing is a very serious concern. We believe that every possible step must be taken to reduce animal suffering to an absolute minimum, for as long as animal use continues.
RSPCA Refining Rabbit Welfare-In 2008, the UFAW/RSPCA Rabbit Behaviour and Welfare Group produced a resource that sets out practical guidance on fulfilling the basic needs of the rabbit.
RSPCA Housing and Care Resources-A resource from the research animals department on how housing and care can be refined to reduce suffering and improve welfare of animal species
RSPCA Telemetry Resources
RSPCA Rodent Welfare Group-A key aim of the Group is to encourage people to take account of the whole lifetime experience of laboratory rodents, ensuring that every potential impact on their wellbeing has been reviewed and refined
A group of passionate enrichment advocates from academia and industry are the spark for this effort to ignite and excite the laboratory animal community from top to bottom. Lots of people talk about environmental enrichment. We want to document what people are doing to foster lab environments that foster species-typical behaviors environmental enrichment.
Assessing the Health and Welfare of laboratory Animals
3Rs Swiss Foundation

Reduction
Strategic planning chart for reducing animals-Frame
ARRIVE Guidelines-Our ARRIVE (Animal Research: Reporting of In Vivo Experiments) guidelines are intended to improve the reporting of research using animals – maximising information published and minimising unnecessary studies.
The ARRIVE guidelines, originally published in PLOS Biology, were developed in consultation with the scientific community as part of an NC3Rs initiative to improve the standard of reporting of research using animals
Searching for 3Rs Information - Published Literature Sources The I3R group produced the first edition of this document in January 2001 to assist researchers and information professionals in the pharmaceutical industry to retrieve relevant information on animal alternatives and the 3Rs. The document has been updated (July 2002) following discussions with biomedical database producers to improve the source material (journal coverage) and search capabilities for 3Rs information in their databases.
3Rs Reduction-Festing site-FourMice This site provides an interactive short course on experimental design for research scientists working with laboratory animals. The aim is to reduce the number of animals which are used, improve the quality of the science and save time, money and other scientific resources. Ethical review committees, IACUCs and Ph.D. supervisors might like to ask scientists starting work with animals to visit the site, work through it sequentially, and certify (using the form provided) that they have done so before starting their experiments.
Collaborative approach to metanalysis-CAMARADES (Collaborative Approach to Meta-Analysis and Review of Animal Data from Experimental Studies) provides a supporting framework for groups involved in the systematic review and meta-analysis of data from experimental animal studies
Systematic Review Facility-What is SyRF? SyRF is a fully integrated online platform for performing systematic reviews of preclinical studies. SyRF provides: - Educational resources on how to conduct and report a systematic review - Secure screening database, data repository and analysis applications - Guidance on any aspect of preclinical systematic review and meta-analysis
Isogenic Strains-Isogenic strains (inbred strains and F1 hybrids) are like immortal clones of genetically identical individuals. The same genotype can be reproduced indefinitely. They have already made a substantial contribution to biomedical research.
SABRE-Systematic Review-Evidence from animal research is considered by researchers to be of the lowest quality in medical research. It is therefore placed at the bottom of the hierarchy on the 'quality of evidence' pyramid because it is equivalent to 'expert opinion' or 'background information', which may or may not translate higher up the scale of evidence. The best information is currently considered to be from well conducted systematic reviews and meta-analyses.
New tools for the generation of peptide- and antibody-based ligands in vitro: Reduction of antibody production in experimental animals
RSPCA-‘Research integrity’ is an overarching term relating to the standards to which research is done. It requires every individual to acknowledge their responsibilities as well as being accountable for adhering to legal and ethical principles, and achieving high standards in all aspects of research practice, including planning, conduct, analysis and dissemination.