

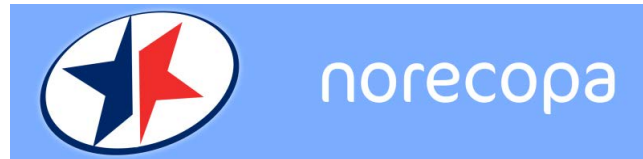
*FELASA Congress
Brussels, 13 - 16 June 2016*

Norecopa: Guidelines, databases and other 3R-resources for animal research

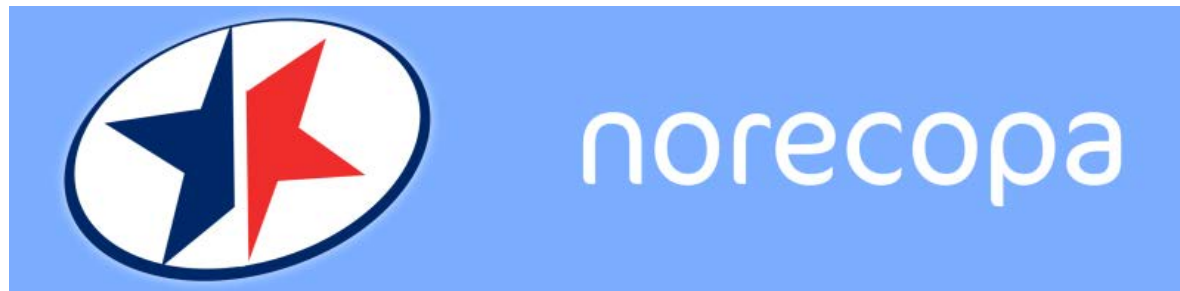
Adrian Smith

adrian.smith@norecopa.no

<http://norecopa.no>



National Consensus Platform for the
Replacement, Reduction and Refinement of
Animal Experiments



a competence centre for the 3RS

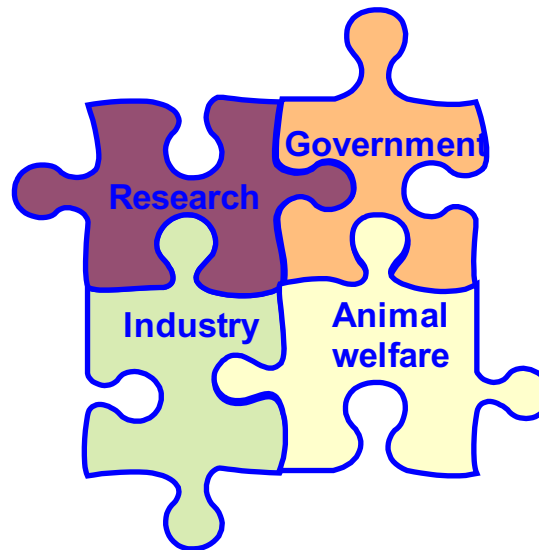
Norecopa is a member of **ecopa**

European Consensus-Platform for Alternatives

www.ecopa.eu



ecopa supports the establishment of National Consensus Platforms (NCPs) where all 4 stakeholders are equally represented:



International consensus meetings

Harmonisation of the Care and Use of:

Fish (2005)

Wildlife (2008)

Fish (2009)

Agricultural animals (2012)

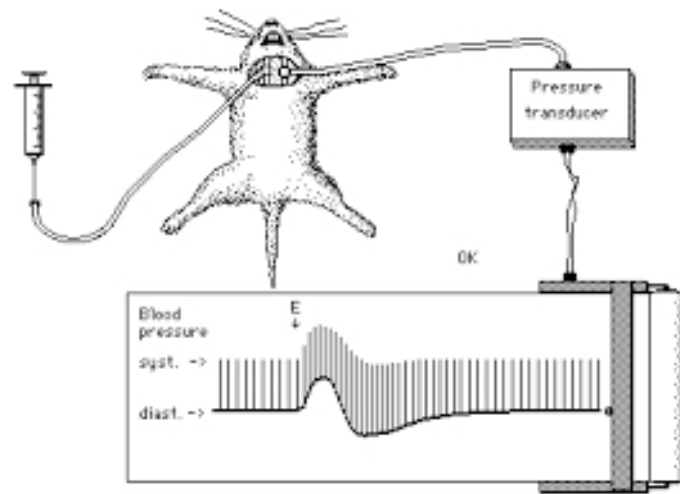
Wildlife (2017)

[*http://norecopa.no/consensus-meetings*](http://norecopa.no/consensus-meetings)

*All presentations and consensus statements are on
the internet: a lasting resource*

norecopa.no/FELASA2016

A brief history



Pharmatutor



1991-96: Development of the NORINA database on Macs, using a simple application. Later sold as a stand-alone, platform-independent version on floppy discs.

1996-2005: Server at the Oslo veterinary school donated by Laboratory Animals Ltd. with a mirror site in Sydney, Australia. All pages written manually in HTML, with separate applications for all the support functions. Frequent crashes!

2005: Content moved to a Microsoft database platform and hosted externally. A separate site built for films and slide shows of procedures on laboratory animals

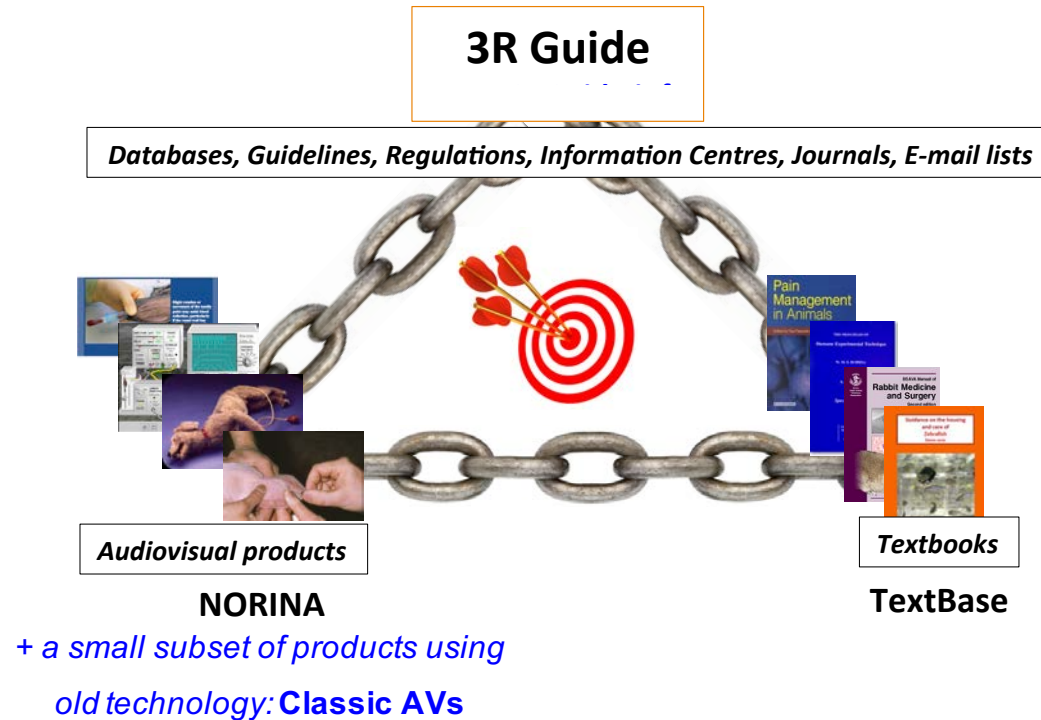
2007: Norecopa founded, with its own website

2015-16: Brand-new website built from scratch, with an intelligent search engine



ECVAM workshop, Neubiberg, Munich, September 1996:
Current status and future developments of databases on alternative methods.

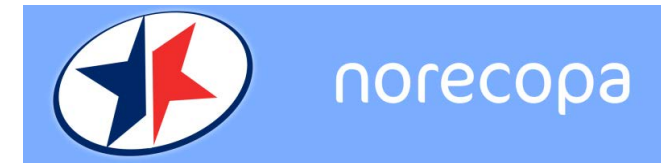
After 25 years, we ended up with 6 resources on different domains using different technologies



+ films and slide shows of common procedures

+ intelligent search engine

A new website designed in 2015, launched 31 May 2016:



- Responsive – works equally well on mobile phones, tablets and desktop computers
- One (intelligent) search engine for everything – no longer a need to know the names of the databases
- Hand-picked material for quality and relevance to Laboratory Animal Science, 3Rs and welfare – based on 30 years of experience and networking in the field
- Designed to be an answer to the conclusions of so many presentations at congresses: “we need more guidelines”!
- Contains a newsfeed from European media (English- and Scandinavian-language articles on lab animal science)
- Films of common procedures
- The site will be made visually more interesting (with more images), but the focus so far has been on searchable and printable content, not entertainment value

Some important technical specifications:

- Zero tolerance of dead links (404-errors)

‘Do I have to make new bookmarks for your webpages?’

No!

- Automatic redirection of

<http://oslovet.veths.no>

<http://oslovet.nvh.no>

and all the individual pages on these old domains

<http://oslovet.norecopa.no>

www.3RGuide.info

- All searches and use of search filters generate unique and individual addresses, so you can document, and repeat, exactly the same search



Your feedback

- ☐ I have found a mistake on the current page
- ☐ I would like to give my opinion about the website
- ☐ I know of a resource which is not cited in 3R Guide
- ☐ I know of a product which is not cited in NORINA
- ☐ I know of a product which is not cited in TextBase
- ☐ I know of a product which is not cited in Classic AVs

Name

Email

Comments

Did you find what you were looking for?

☐ Yes, I found it!

☐ No, I did not!

Did you find what you were looking for?

☐ No, I did not!

What are you looking for?

Please give us your feedback so we can improve the information on the page. Thank you in advance for your help. Please add your email address if you would like a reply.

Submit

Please contact us by email if you have any questions.



norecopa

NORSK ENGLISH

[About Norecopa](#) [Alternatives](#) [Databases & Guidelines](#) [Education & training](#) [Legislation](#) [Meetings](#) [News](#) [Other resources](#) [Species](#) [Feedback](#)

Search all Norecopa's databases and webpages simultaneously:



[Welcome to Norecopa's new website!](#)

[Search engine help file](#)

More about Norecopa's databases: [3R Guide](#) - [NORINA](#) - [TextBase](#) - [Classic AVs](#)

The screenshot shows the Norecopa website header and navigation. The logo, consisting of a stylized star in a circle, is circled in red. To its right is the word "norecopa" in white lowercase letters, also circled in red. Further right are language links "NORSK" and "ENGLISH", with "ENGLISH" circled in red. Below these is a search bar with the text "Search:" and a magnifying glass icon, circled in red. A red line points from this search bar to a larger search box below. The navigation menu includes links: "About Norecopa", "Alternatives", "Databases & Guidelines", "Education & training", "Legislation", "Meetings", "News", "Other resources" (circled in red), "Species", and "Feedback". Below the navigation menu is a list of topic links: "Anaesthesia and analgesia", "Animal facilities", "Animal welfare organisations", "Blood sampling", "Email discussion lists", "Environmental enrichment", "Ethics", "Experimental design and statistical analysis", "Harm-Benefit assessment", "Health monitoring", "Journals", "Organisations", "Severity classification", "Suppliers", and "Systematic reviews". Below this is a blue search box with the text "Search all Norecopa's databases and webpages simultaneously:" and a search input field with the placeholder "Add search term" and a magnifying glass icon. To the right of the search box are social media icons for Facebook, Twitter, Email, and a plus sign, circled in red. The breadcrumb "norecopa.no / Other resources" is visible on the left.

Organisations of relevance to animal research

Organisations within Laboratory Animal Science

[AAALAC International](#) (Association for Assessment and Accreditation of Laboratory Animal Care International)

[AALAS](#) (American Association for Laboratory Animal Science)

[ACLAM](#) (American College of Laboratory Animal Medicine)

[ASLAP](#) (American Society of Laboratory Animal Practitioners)

Red links: external
Blue link: internal

Animals in research:



Fish



Farm animals



Laboratory animals



Wildlife and wild fish



Cephalopods



Other aquatic animals

Norecopa promotes use of "The Three Rs":

Replace

Replacement of animal experiments with alternatives

Reduce

Reduction of the number of animals used in experiments

Refine

Reduction of pain and suffering in animal experiments

Norecopa aims for consensus between the four stakeholders:

Government and Regulatory Authorities - Research and teaching - Industry - Animal protection and welfare

Who are you?

Are you a researcher, student or are you generally interested in animal welfare? Here you will find relevant information to help you achieve your goals.



Science



Education and
training



Animal welfare

Contact oss

+47 41 22 09 49
post@norecopa.no



Norecopa on Facebook

Street address

Ullevålsveien 68
0454 Oslo

Postal address

% Norwegian Veterinary
Institute
P.O. Box 750 Sentrum
N-0106 Oslo, Norway

Org.no. 992 199 199
Bank account: 7694 05 12030
(IBAN: NO51 7694 0512 030)
(payment must be marked
'12025 Norecopa')

Shortcuts

- > Give us some feedback!
- > 2010/63/EU
- > Information material
- > Norecopa's Board
- > Secretariat
- > Sponsors
- > Cookies & Privacy
- > Site map

Resources developed in collaboration with:



Norges miljø- og
biovitenskapelige
universitet



U.S. Department
of Agriculture

Subscribe to our newsletter

Your email address:

Register

- > Browse our latest newsletters

The search engine

The screenshot shows a search engine interface. At the top, there is a search bar containing the text "Guidelines bleeding mice". To the right of the search bar is a blue "Search" button. Below the search bar, there is a "Help" button and a checkbox labeled "Enable synonyms and stemming" which is checked. To the right of the checkbox is a "Reset" button. Below the search bar, the text "Did you mean: guideline breeding mice(4)" is displayed. To the right of this text is a "Category" section with a list of categories and their counts:

- ☐ Agricultural animals (5)
- ☐ Anaesthesia (3)
- ☐ Anaesthesia and analgesia (4)
- ☐ Anatomy (175)
- ☐ Aquatic animals (4)
- ☐ Behaviour (4)
- ☐ Behavioural research (3)
- ☐ Biochemistry (7)
- ☐ Biology (4)
- ☐ Birds (5)
- ☐ Blood sampling (12)
- ☐ Cancer research (3)
- ☐ Design (7)
- ☐ Disease research (3)
- ☐ Dissection (7)
- ☐ Education and training (3)

 Below the "Did you mean" text, there is an "Auto-complete function:" section with a list of suggestions:

- blood
- blood
- blood collection
- blood from
- blood sampling

 Below the auto-complete function, there is a "Synonym list:" section with the text: "Bleeding, bloodsampling, blood sampling, venepuncture, blood collection, phlebotomy".

Categories, types, 3R
relevance and many more

- An index of all the words on all the approx. 6,300 pages
- Fuzzy logic
- Boolean logic
- Wildcards
- Proximity searches
- Truncation



A help file available

Collaboration with US Department of Agriculture

Jerry K-9 CPR Mannikin (Dog)

Record number: 8821 (legacy id: 4905)
Category: [Handling \(TextBase\)](#) - [Medicine](#)
Type: [Simulator](#)

A product line of animal CPR (Cardiopulmonary Resuscitation) training mannequins. Type: Simulator. Category: Handling & Veterinary Medicine.

[Jerry K-9 CPR Mannikin](#) is a full size dog for CPR (Cardiopulmonary Resuscitation) training. Features: Working lungs, artificial pulse, disposable and cleanable parts. Designed to perform CPR compressions, mouth-to-snout resuscitation. Also designed to splint and bandage. In addition, a non-removable, long oblique fracture of the right femoral leg bone can now be added to this mannikin. This will allow students to learn how to set and repair common K-9 fractures. This mannikin simulates a 60-70 lbs dog. Accessories included: Carrying case with kneeling pad, brush, 5 disposable lungs. This mannikin is a simplified version of [Critical Care Jerry](#).



Comments & References: Additional Disposable Lungs for Jerry: 24 disposable lungs: US\$128.00; 72 disposable lungs: US\$380.00. Suitable for training in the veterinary setting, search and rescue, veterinary schools, canine units and for pet owners. This item may be borrowed for up to 6 weeks through the Alternatives Loan System of the International Network for Humane Education (InterNICHE), free of charge, but return postage must be paid by the person who has borrowed the product. Please note that there are practical limitations on where some items can be sent. For more information, please contact loansystem@interniche.org. See also <http://www.interniche.org> for more information.

Item: 101

Price: US\$989.00. Loan Program: Free of charge

Free of charge: Loan Program: Free of charge

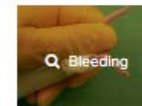
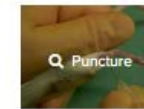
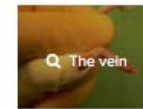
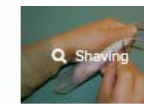
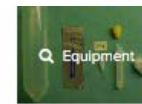
On loan: On loan

Supplier

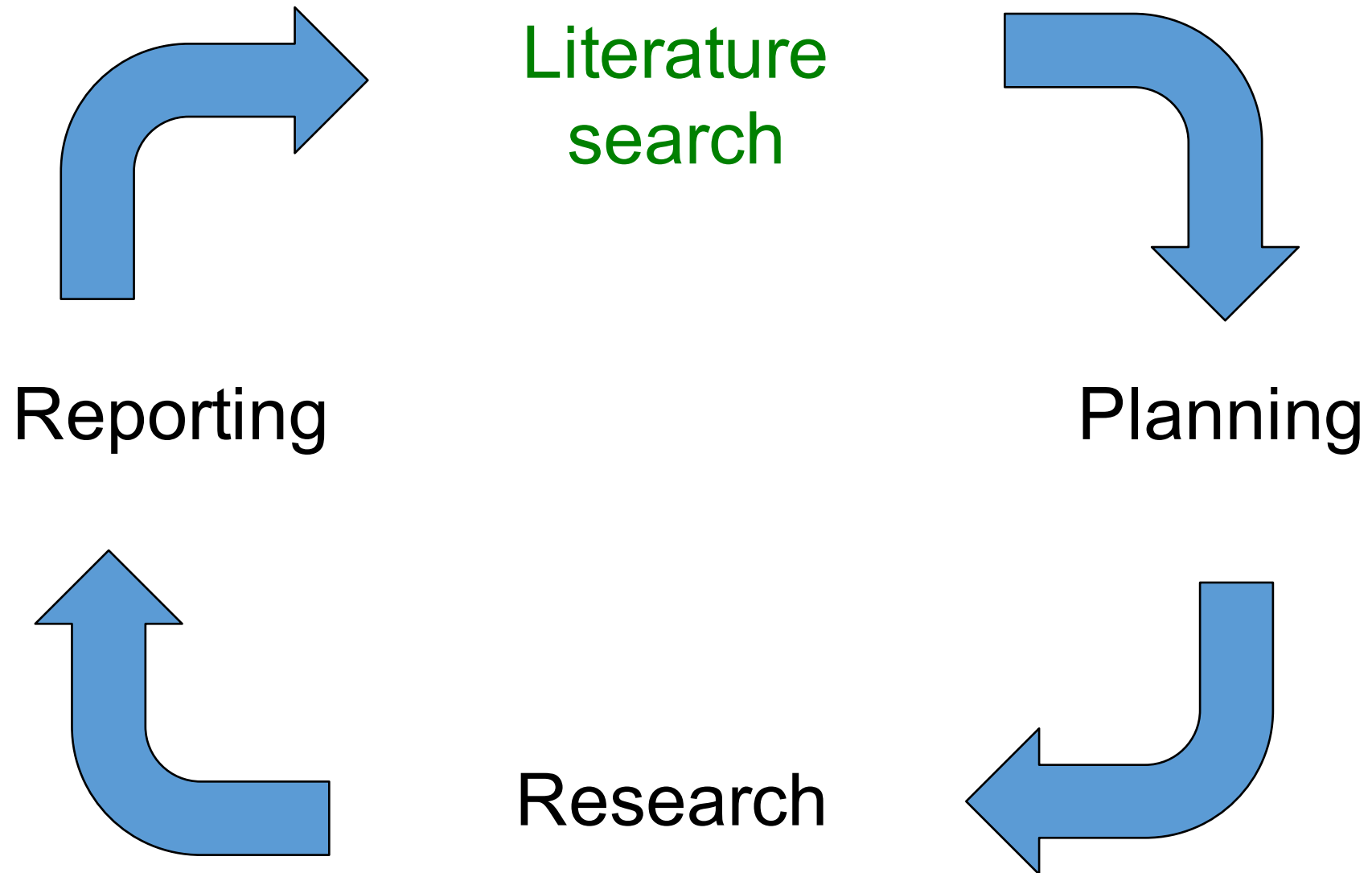
Rescue Critters, LLC

[All articles from Rescue Critters, LLC](#)

- > Address: 15635 Saticoy St. Unit A, Van Nuys, CA 91406, USA
- > Tel: Int-1-818-780-7860

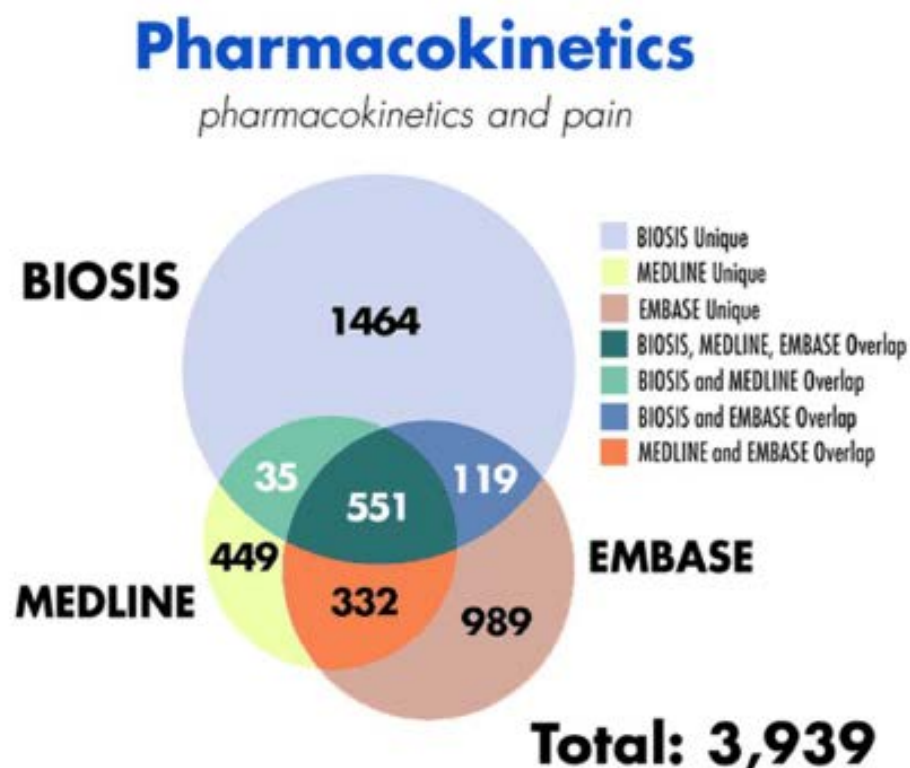


Norecopa's website is designed to aid scientists in finding global 3R resources



Correct literature searches are a vital part of the work to advance the 3Rs

Why Search Multiple Databases?



Without *BIOSIS Previews*, you would be missing
1,464 unique citations.

In addition to hundreds of journal article records,
BIOSIS Unique records contain 415 Meeting records.



Things have got worse rather than better after Google arrived:

You always get some results, even if you type in everything at once.

In many ways the situation was better earlier when searches had to be done manually with the help of a librarian

Action needed:

It is high time that all scientists received mandatory education in literature searching

Scientists should ensure that 3R advances are mentioned in the title or abstract

Alice Tillema, Radboud University:
How to construct a literature search

<http://norecopa.no/how-to-construct-a-literature-search.pdf>

How to construct a literature search

Alice Tillema, Medical Library, Nijmegen

<http://libguides.ru.nl/norecopa>



Radboud University



Radboudumc
university medical center

How many of you conduct searches in PubMed / MEDLINE?

How many of you

- *formulate a specific question and then determine which elements will be your search components (SC)*
- *use Word to make a list of search terms for every SC containing*
 - *MeSH terms*
 - *synonyms*
- *perform searches with separate strings for each SC:*

mice[MeSH] OR mice[tiab] OR mouse[tiab] OR murine[tiab]
- *finally, combine the search strings (AND)*

How many are familiar with SYRCLE's

- *Step by step guide to systematically find all relevant animal studies*
- *Search filters for finding animal studies in PubMed and EMBASE*

Encourage scientists to publish 3R-improvements somewhere where they are visible!



http://www.theodora.com/rodent_laboratory/blood_collection.html



photo: NMBU

SCID-Hu mice immunized with a pneumococcal vaccine produce specific human antibodies and show increased resistance to infection.

Search for 'bleeding mice' on Google and Norecopa.



AllImagesVideos

About 4,760,000 results (0.38s)

[PDF] **Methods of Blood Collection from Mice**
www.osa.sunysb.edu/dlarsen
Collecting blood from mice: a number of efficient methods

[PDF] **Guidelines for Survival Bleeding of Mice and Rats**
[oacu.od.nih.gov/ARAC/docs/Guidelines for Survival Bleeding of Mice and Rats](http://oacu.od.nih.gov/ARAC/docs/Guidelines%20for%20Survival%20Bleeding%20of%20Mice%20and%20Rats.pdf)
investigators and National Institutes of Health

Blood sample collection
www.ncbi.nlm.nih.gov/pmc/articles/PMC2810101/
by S Parasuraman · 2010 · It is important that blood sampling techniques be standardized. This method is recommended.

How to obtain blood samples from mice
<https://www.youtube.com/watch?v=3-46>
Dec 19, 2010 · See more videos on YouTube
Lancet

[PDF] **A rapid, simple, and efficient method for blood collection from mice**
[ceua.ufsc.br/files/2010/06/Methods for obtaining blood from mice](http://ceua.ufsc.br/files/2010/06/Methods%20for%20obtaining%20blood%20from%20mice.pdf)
Methods for obtaining blood from mice that allows investigators to collect blood from mice

Mouse : Decision tree for blood collection
<https://www.nc3rs.org.uk/mouse-decision-tree-for-blood-collection>
How much blood does a mouse weigh? A mouse weighs 20-30g

Search all Norecopa's databases and webpages simultaneously:



Welcome to Norecopa's new website!
[Search engine help file](#)

More about Norecopa's databases: [3R Guide](#) - [NORINA](#) - [TextBase](#) - [Classic AVs](#)

76 results

NIH Animal Research Advisory Committee Guidelines for Survival Bleeding of Mice and Rats
3R Guide/10891
These guidelines have been developed to assist investigators and National Institutes of Health (NIH) Animal Care and Use Committees (ACUC) in their choice and application of survival rodent bleeding techniques.

Blood sampling
Blood sampling is one of the commonest procedures conducted on research animals, but it may cause pain, distress and lasting harm if the technique is poor, or if too much of the circulating blood volume is removed. Videos and slide series showing blood sampling techniques on several common laboratory animal speciesLinks NC3Rs Microsite on blood sampling Films and slide shows on bleeding techniques...

Blood Collection in Mice Using the Saphenous Vein - An Alternative to Retro Orbital Collection
NORINA/8641
These web pages describe a method for blood collection from the saphenous vein of mice, rats, hamsters, gerbils, guinea-pigs, mink and ferrets. Type of record: Web pages. Category: Veterinary Medicine

Search filters

Order by:
Relevance

☒ Enable synonyms and stemming

Browse the databases

- eBooks (6)
- Free (5)
- Held at NMBU Oslo (contact kristine.hansen@nmbu.no) (5)
- Key products (6)
- On loan (2)
- Reviewed

Database

- 3R Guide (6)
- Classic AVs (6)
- Website (6)
- NORINA (35)
- TextBase (23)

Search in the databases

☒ All Text

- Title
- Author
- Publisher

Search all Norecopa's databases and webpages simultaneously:

bleeding mice

[Welcome to Norecopa's new website!](#)

[Search engine help file](#)

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'Bleeding' not mentioned, but identified by the synonym list

Search filters

Order by:

Relevance

☒ Enable synonyms and stemming

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Search in the databases

- ☒ All Text
- Title
- Author
- Publisher

Our vision:

To aid dissemination of 3R resources between the different scientific fields



<https://kmonadollaraday.files.wordpress.com/2011/03/information-silos.jpg>



<http://www.london-gifts.co.uk>

There are lots of platforms...



...but are there enough trains?

**Norecopa aims to be a fast train to
global 3R resources**

Photo: <http://www.bbc.com/news/uk-england-london-35882068>

norecopa.no/website-poster



Norecopa, Norway's 3R centre: norecopa.no



USDA Animal Welfare Information Center
awic.nal.usda.gov

**norecopa.no: a global overview of quality resources within
laboratory animal science and welfare**

Adrian Smith¹, Karina Smith¹, Øyvind Wærenskjold² & Tim Allen³

¹Norecopa, P.O. Box 750 Sentrum, 0106 Oslo, Norway; ²Bitfarm, Vigeveien 15A, 4639 Kristiansand, Norway; ³Animal Welfare Information Center, National Agricultural Library, 10301 Baltimore Avenue, Beltsville, Maryland 20705, USA

Quality resources in Laboratory Animal Science: where do I find them?

Increased focus on **the 3Rs** (*Replacement, Reduction & Refinement*) in Laboratory Animal Science and regulatory demands mean that scientists, committee members and animal house staff need easy access to relevant resources.

Norecopa has built a brand-new website and intelligent search engine which provide a global overview of selected quality resources. The site consists of three major databases and approx. 500 webpages.

✓ *The search engine returns hits from all these resources simultaneously. A large range of filters can be applied to narrow the list of hits. All searches generate unique web addresses (URLs), making it easy to document the searches which have been performed.*

3R Guide database and webpages

Databases, Guidelines, Regulations, Information Centres, Journals, E-mail lists

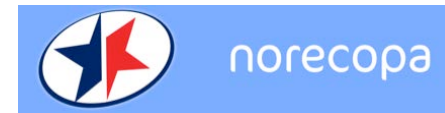


Please contact Adrian Smith (adrian.smith@norecopa.no) for more information.

We gratefully acknowledge the financial support of Dag Stiansen's Foundation, Laboratory Animals Ltd., the Nordic Society against Painful Animal Experiments, Novo Nordisk, the Scottish Accreditation Board and the US Department of Agriculture.

Graphics: colourbox.com

If you think it's expensive to hire
a professional to do the job, wait
until you hire an amateur. – Red Adair



Thanks to our main sponsors:

- Standing Committee on Business Affairs, Norwegian Parliament
- Ministries of Agriculture and Fisheries
- Novo Nordisk
- Nordic Society Against Painful Experiments
- Scottish Accreditation Board
- Dag S. Stiansen Foundation
- Laboratory Animals Ltd.
- Norwegian Research Council

Funding of the NORINA database 1991-2016:

Nordic Society Against Painful Experiments, Dag S. Stiansen Foundation, The Norwegian Research Council, the Norwegian School of Veterinary Science, Laboratory Animals Ltd., RSPCA, UFAW, AstraZeneca, Solvay Pharmaceuticals, the Swedish Fund for Research without Animal Experiments, Norwegian Federation for Animal Protection, Allkopi, The Humane Society of the United States, St. Andrew Animal Fund, Microsurgical Developments Foundation, AAALAC International, LASA, NEAVS, Amersham Health