

# Nordic 3R-Centres:

What can we offer?

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Danish 3R-Center



Replacement

Reduction

Refinement

Political decision to establish 3R-Center in Denmark, June 2013

Collaboration between

- Government
- Pharmaceutical industry
- Animal welfare organisations

The Danish 3R-Center

- Initial board meeting, November 2013
- Board, 7 persons
- Secretariat, 3 persons

Finances

- Ministry of Environment and Food : 200.000 Euro
- Stakeholders: 140.000 Euro

On behalf of the Minister of Environment and Food, the Danish 3R-Center can annually hand out 200.000 Euro as research funds.

# Board 2013 - 2017

Danish 3R-Center



# Strategy of the 3R-Center

Danish 3R-Center



The 3R-Center must collect and disseminate information about the 3Rs

The 3R-Center must initiate research to stimulate the development of alternatives to animal use

The 3R-Center will promote international collaboration within the 3Rs

# Collaborators

Danish 3R-Center



## Nationally

- Animal welfare organisations
- Animal welfare bodies
- Pharmaceutical industry
- Universities
- Danish Ministry of the Environment /PARERE
- The Danish Health and Medicines Authority / EMA

## Internationally

- 3R Research Foundation (Switzerland)
- NC3R (U.K.)
- ZEBET (Germany)
- EURL-ECVAM (EU)
- FICAM (Finland)
- SCAW, SWETOX (Sweden)
- CCAC (Canada)
- RIVM (The Netherlands)



# Symposium

- National Symposium 2014 (Copenhagen)
- International Symposium 2015 (Copenhagen)
- International Symposium 2016 (Copenhagen)
- International Symposium 7<sup>th</sup> and 8<sup>th</sup> November 2017 (Copenhagen)
  - 180 participants
  - Two days
  - Theme: From idea to reality
  - Theme: National- and international speakers
  - Poster session
  - Social arrangement / networking



# 3R-price

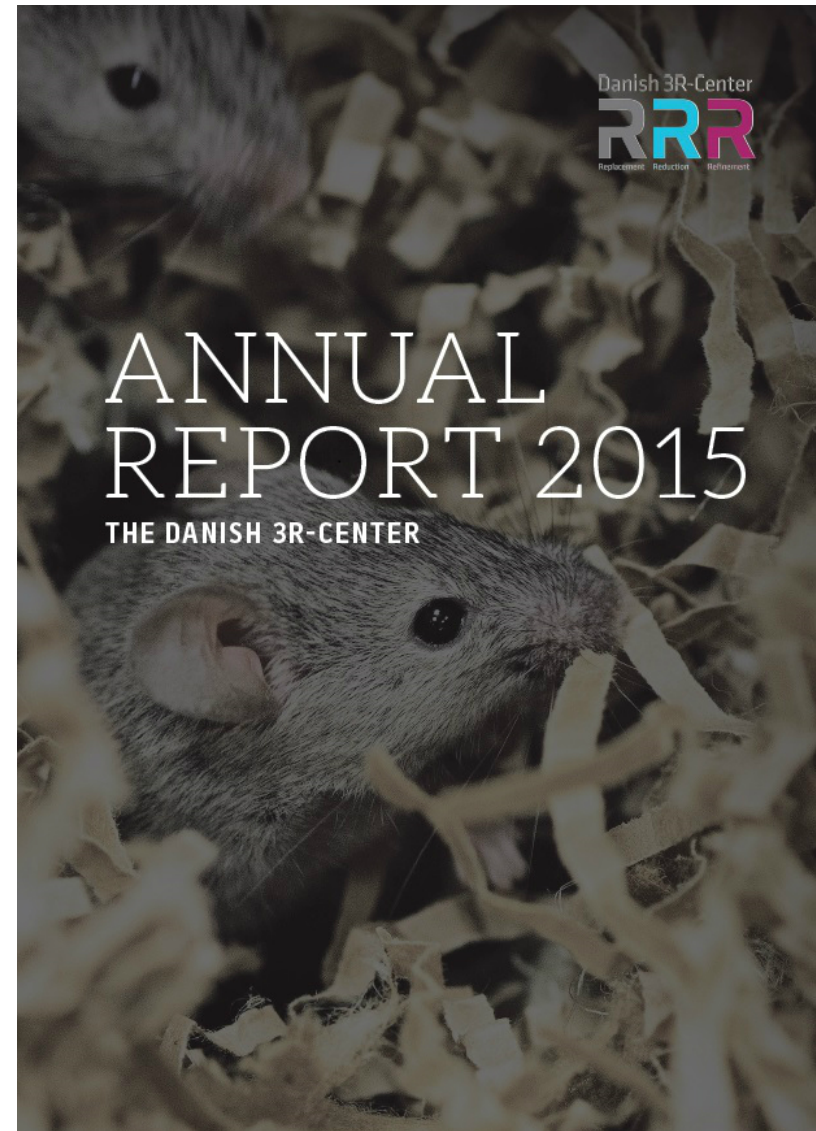
- Open process
- 6-10 suggestions a year
- Decision made by the Board
- 10.000 kr. award



# Annual Report



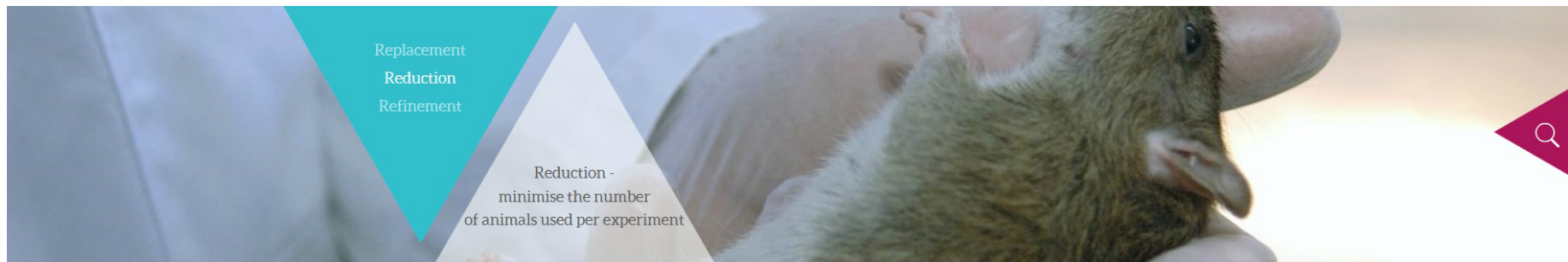
- Danish
- Available online
- Content 2015
  - Presentation of the 3R-center and the Board
  - Supported Research projects 2015
  - Website
  - 3R events
  - International cooperation





# Website (3rcenter.dk)

- News in Danish and English
- Newsletter in Danish and English



## 3R-news from around the world



17. May 2016

### 3R-symposium in Copenhagen

Registration is now open for our annual symposium.

3. May 2016

### In Vitro Testing Industrial Platform

Open meeting in Barcelona June 2, 2016 - Animal free approaches to test chronic exposure to low concentrations

2. May 2016

### Danish 3R-Center supports new projects

The 3R-center has supported three promising 3R-projects.



21. April 2016

### Annual report 2015

We have just published our annual report.

- Research Projects
  - 2014, four projects
  - 2015, three projects
  - 2016, three projects
  - 2017, three projects
  
- International 3R centres
  
- Facts/numbers about laboratory animals from The Animal Experiments Inspectorate (only in Danish)
  
- Educational material (only in Danish)

- Goal of the project: spreading knowledge about the Three R's to high school students
  
- Content:
  1. Quiz 1 (Preunderstanding)
  2. Background article (understanding the basics of animal experimentation and 3Rs)
  3. Film (12 minutes, three Danish 3R research projects)
  4. Resource room (group assignments, detailed and deeper understanding)
  5. Quiz 2 (Self-evaluation)

Additional articles:

- A Refined Approach to Producing Polyclonal Antibodies in Chickens – Completely Replacing All Invasive Elements by Combining Immunizations with Routine Aerosol-based Vaccinations
  
- An in vitro method to predict acute lung toxicity due to pulmonary surfactant inhibition

- 3R-projects supported in 2014

1. Refinement of animal models of pain: Establishment of strategies to alleviate avoidable pain in rat models for pain and inflammation (Refinement)
2. Pathological and immunological consequences of basic experimental animal procedures in mice (Refinement)
3. Reducing the group size in studies of dermatitis by standardization of the gut microbiota (Reduction)
4. Establishment of an In vitro model for diabetic atherosclerosis (Replacement)

- 3R-projects supported in 2015

1. An in vitro method to predict acute lung toxicity due to pulmonary surfactant inhibition (Replacement)
2. A Refined Approach to Producing Polyclonal Antibodies in Chickens – Completely Replacing All Invasive Elements by Combining Immunizations with Routine Aerosol-based Vaccinations (Refinement)
3. An alternative to animal experiments: Development of an in vitro human skin model for evaluation of topical antimicrobial compounds (Replacement)

- 3R-projects supported 2016

1. Development of computer models to predict chemicals interference with thyroid hormones (Replacement)
2. Towards better brain cancer treatment with novel in vitro models and fewer animal experiments (Replacement/Reduction)
3. Use of cell culture technology to minimize the needs for animal trials in development and production of fish vaccines (Replacement/Reduction)

- 3R-projects supported 2017

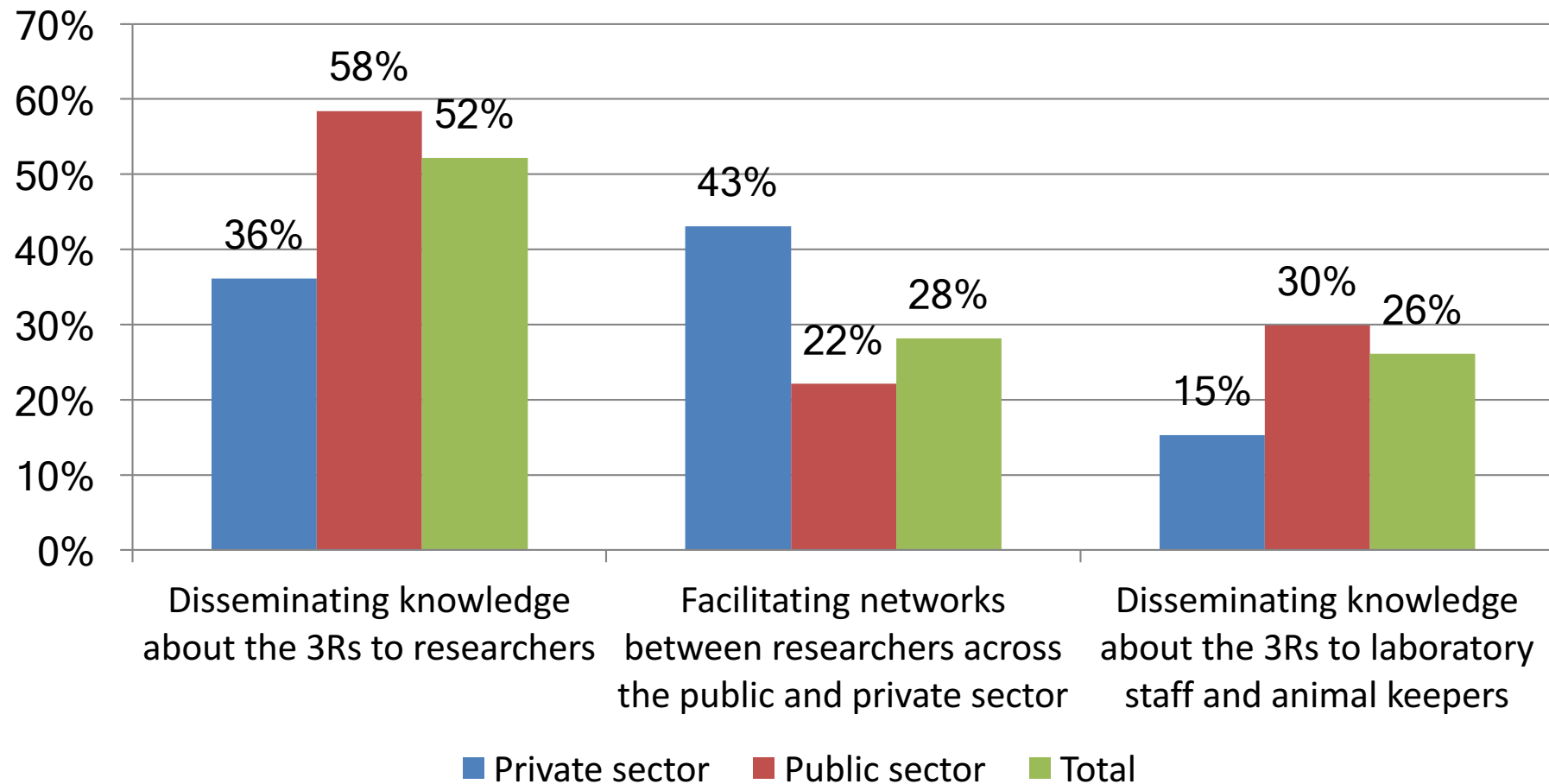
1. Use of Primary Isolates From Human Kidney to Study the Molecular Aspects of Blood Pressure Regulation
2. Developing FACS based in vitro assays to measure antibody mediated protection against infection with intracellular bacteria
3. Implementation of analgesic refinement in rats used as models for arthritis and inflammatory pain

# Prioritised areas of activity of the Danish 3R-Center

N=234



## On which areas should the Danish 3R Center focus its activities?



# Danish 3R Survey - reactions

Focus on contact with researchers

Not inventing the wheel again

Collaboration with the NC3Rs

Push poster and topical material

- ARRIVE Guidelines
- Grimace Scale
- Experimental Design Assistant
- CRACK-IT Solutions

Animal Welfare Bodies

Veterinarians

## Improve your research

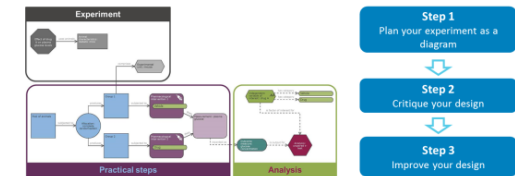
Use these valuable resources from the NC3Rs (UK)

### Prior

#### Experimental Design Assistant (EDA)

Enter your research plan and retrieve valuable critique and useful suggestions to improve the design of your study to maximise output quality, secure valid results and minimise the use and suffering of experimental animals.

See more: <https://eda.nc3rs.org.uk/>



### During

#### Grimace scale posters

The grimace scale posters provide a practical, simple overview of facial expressions seen in animals when they are in pain during a study. They can be used as part of a clinical assessment of post-procedural pain.

Posters are currently available for mice, rats and rabbits.

<http://www.nc3rs.org.uk/grimacescales>



### After

#### ARRIVE guidelines (Animal Research: Reporting of *In Vivo* Experiments)

When it is time to publish, the ARRIVE guidelines provide an extremely helpful tool to ensure your reporting is complete and readily acceptable for publishing.

The ARRIVE guidelines are intended to improve the reporting of research using animals – maximising information published and minimising unnecessary studies.

<https://www.nc3rs.org.uk/arrive-guidelines>

These are just some of the resources available from the UK NC3Rs. To see more visit: [www.nc3rs.org.uk/our-resources](http://www.nc3rs.org.uk/our-resources)

### Impact

#### CRACK-IT Solutions Technology for better science

The CRACK-IT Solutions programme offers you a platform for connections that may facilitate the distribution of your scientific solution that supplies 3Rs benefits to a wide range of experimental animal users.

A technology partnering hub to accelerate the translation of technologies with 3Rs potential ('Solutions') by helping to identify new partners and customers to use, develop and validate the technology.

Funding is available from the NC3Rs for selected new collaborations between Solution providers and collaborators.

<http://nc3rs.org.uk/crack-it-solutions>

# What can we offer?



The international 3R Centres are very diverse

EURL-ECVAM meetings: national centres, science based centres at university level, NGO's.

Some only 1R / some all 3R's. Often only focus on Replacement

New centres: Sweden, Wallonia, Brussels, Canada



# Nordic 3R-Centres



Danish 3R-Center, Norecopa, Swedish 3R Centre

All national centres, organised at government level

All focusing on all 3Rs

Refinement is, and will continue to be, a focus area

# Nordic 3R-Centres vision

- Disseminate and “sell” each others products
  - Norecopa database and website ([norecopa.no](http://norecopa.no))
  - Norecopa PREPARE translation ([norecopa.no/PREPARE](http://norecopa.no/PREPARE))
  - Danish educational program
  - Results of supported research
  - Results of surveys and analyses
  - New Swedish products
  - Products from other centres – e.g. NC3R products

- Collaboration on projects
  - Large research projects
  - Common surveys and analyses
  - Guidelines
  - Common Nordic approach to ethical evaluation
  - Complex products like Experimental Design Assistant and CRACK-IT Solutions
  - ?
  - ?

# Nordic 3R-Centres vision



- Collaboration with all organizations
  - Other 3R-Centers, especially the smaller ones
  - Science based university groups
  - Support the process in Baltic Region

# The Dutch Initiative

- A fixed date - 2025
- Very ambitious
- Will put focus on initiatives – only alternatives
- A Nordic Initiative ????
- What is possible in 2025 – on all 3R's

Thank you



What do you think?