Norecopa: A database of global 3R resources for better Science

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Abstract

Norecopa is Norway's National Consensus Platform for the 3Rs (*Replacement, Reduction and Refinement of animal experiments*). Founded in 2007, it has a comprehensive website of global 3R resources: https://norecopa.no

Introduction

Norecopa is an independent member organisation, with a Board representing all four major stakeholders in animal research: regulators, industry, research and animal welfare. Norecopa is a member of *ecopa* (https://www.ecopa.eu), the umbrella organisation for national consensus platforms. Norecopa's Annual Meeting is its highest organ. Norecopa receives core funding for its Secretariat from two Norwegian Ministries.

Materials and Methods

Norecopa's current website, launched in 2016, contains a collection of (at present) 8 datasets with 3R resources, as well as several hundred webpages. Several of these have been in existence since the early 1990s, when members of Norecopa's staff worked for the Norwegian School of Veterinary Medicine, and others have been produced by the EU Commission's Joint Research Centre (JRC). The contents of the site are updated many times each week. The task of identifying broken internal or external links is automated. The site also features an intelligent search engine, which uses a synonym list created especially for Norecopa. All the approx. 8,500 pages on the website are searched simultaneously by the search engine. Users can then apply a large range of filters to optimise their search results.

The datasets embedded in the website include: i) 3R Guide - an overview of approx. 400 guidelines for animal research and testing, collected in collaboration with AWIC (Animal Welfare Information Center) at the National Agriculture Library, USA; ii) NORINA - an overview of approx. 2,500 audiovisual alternatives and supple-

ments to the use of animals in education and training, at all levels from school dissections, through preclinical undergraduate classes, to courses in Laboratory Animal Science for scientists, technicians and other animal care staff; iii) TextBase - a collection of information on approx. 1,500 textbooks and other literature of relevance to Laboratory Animal Science and Welfare; iv) An EU dataset of advanced non-animal models for basic and applied research into respiratory diseases.

In 2018, Norecopa published the PREPARE guidelines for planning animal experiments, in collaboration with UK specialists. PREPARE consists of a two-page checklist (see Figure 1), currently available in 25 languages, and a website where each of the topics on the checklist is explained in detail, with links to quality references from international centres and from the scientific literature (https://norecopa.no/PREPARE).

The PREPARE website is updated many times a week, as new resources are published.

Three more recent additions to the website can also be mentioned: i) Norecopa hosts the website of the International Culture of Care Network (https://norecopa.no/coc). The Network aims to help animal facilities improve their standards of animal welfare, scientific quality, care of the staff and transparency for the stakeholders. The site contains a Quick Start Guide and links to a large number of additional
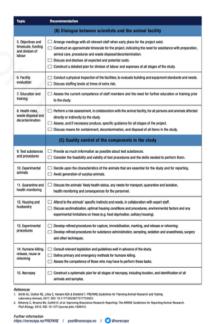
Figure 1. The PREPARE checklist. Reprinted with permission from Laboratory Animals, published in Smith et al. (2018). Available in 25 languages at https://norecopa.no/PREPARE/prepare-checklist

Figure 2. Norecopa's interactive map of 3R Centres and networks within Laboratory Animal Science and alternatives: https://norecopa.no/global3r

resources; ii) Norecopa has launched a Refinement Wiki (https://norecopa.no/wiki), where scientists or animal care staff can publish large or small changes they have made to protocols which improve the quality of animal care, research and testing. The Wiki is designed to be a "halfway house" between full scientific publications and the discussions which take place on electronic forums (where important information is often not permanently recorded); iii) Norecopa has produced an interactive global map of 3R centres and networks (https://norecopa.no/global3r). The map makes it easier to identify centres or activities in a given country, and it contains links to more information about each item.

Discussion and Conclusions

Norecopa aims to provide a global overview of quality guidelines and other resources about Laboratory Animal Science and alternatives, not only for scientists but also for regulators, animal care staff and the general public.

References

1. Norecopa. Available at: https://norecopa.no
2. Smith AJ, Clutton RE, Lilley E, et al. PREPARE: guidelines for planning animal research and testing. Lab Anim 2018;52:135-41.