



Development of a 3Rs Platform in Korea: Korea National Information Center for the 3Rs

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Summary

Our research in Korea from 2008 to 2010 indicated that the need for development and implementation of well-proven alternatives to animals in education is clearly recognized by a majority of veterinary professors and students. At this early stage, alternatives to the use of laboratory animals often are viewed as supplementary educational teaching aids rather than as replacements for animals. We are developing a 3Rs platform in Korea with the goal of exchanging knowledge and sharing examples of best practice to help replace laboratory animal use in education and training. As the first step, we established the Korea National Information Center for the 3Rs (KNIC3Rs) in collaboration with government, academia, and animal welfare organizations, including national and international experts, to enhance humane science and animal welfare in Korea.

Keywords: 3Rs platform, animal alternatives, animal welfare, ethics, Korea

1 Introduction

This year marks the 250th world anniversary of veterinary education. Veterinary science was introduced into the Korean curriculum in 1906, and currently there are ten veterinary medical schools in Korea. The Three Rs principles of Russell and Burch have now been guiding animal use for more than 50 years. Two new Korean laws legislating animal welfare and the humane use of animals in science came into effect in 2008 and 2009. Both laws, the Animal Protection Law and the Laboratory Animal Law, impose the Three Rs principles of “Replace, Reduce, and Refine” on procedures using animals and require an ethical committee review prior to conducting animal experiments in research, testing, and education. Legislation is proving to be a somewhat effective means of overcoming barriers to the acceptance of animal-free alternatives. However, despite the recent legislation in Korea, resources and information on the 3Rs are inadequate to comply with the requirements (Lee et al., 2010).

In many countries, scientists and educators planning research that will involve the use of animals are required by law to examine the possibilities for replacement, reduction, and refinement (Smith and Allen, 2005). A tremendous amount of information is available from international websites, but it is often very difficult to obtain the specific information desired (Crawford and Allen, 2008). There are sufficient alternatives available at relatively low cost and with proven educational efficacy to allow the vast majority of students who study biomedical science courses to qualify without using animal experiments (Gruber and Dewhurst, 2004).

The joint project of the Royal Society for the Prevention of Cruelty to Animals, UK, and the College of Veterinary Medicine, Konkuk University, Korea, has set up systematic procedures to promote awareness of moral and ethical issues based on sound science. The objectives of this 2008-2010 study were: 1) to estimate the numbers of animals used and the extent of use of Three Rs alternatives in Korean veterinary education, 2) to assess attitudes of the Korean veterinary professors and students towards animal use and alternatives in their laboratory classes, and 3) using pre- and post-surveys, to assess attitudes of veterinary professors and students on the trials of the Three Rs alternatives that have been applied in veterinary laboratory teaching at Konkuk University, Korea (Lee et al., paper submitted).

Teachers and students are not well-informed about animal alternative programs for laboratory practices. For a teacher with a busy teaching schedule and a traditional curriculum already in place, the prospect of adopting new and unfamiliar materials can be daunting – especially with a language barrier. At this stage, alternatives to the use of laboratory animals often are viewed as supplementary educational teaching aids, rather than as replacements for animals. Informing both the teaching and the student communities about animal-free teaching methods will be vital to the replacement of exercises harmful to animals in education. Our research discovered that the need for development and implementation of well-proven alternatives to animals in education is clearly recognized by a majority of the veterinary professors and students. In addition, providing easy, “customer friendly” ways to investigate and obtain alternatives – and to make them available to teachers – will expand the repertoire of



teaching methods and encourage a growing number of teachers to implement alternatives. Outreach based on global experience obviously is crucial (Lee et al., paper submitted).

As the first step, we are developing the 3Rs platform website in Korea to provide user-friendly alternative teaching resources funded by the Alternatives Research & Development Foundation (ARDF), USA. Our initial approach to this project was to expand our current website¹ to nationwide service. With the Institute's limited budget, staff, and space, however, it was not feasible to meet the demand of national requests. Therefore, in collaboration with national and global experts we have agreed to build the website as a national platform system and to establish the Korea National Information Center for the 3Rs (KNIC3Rs).

2 Korea National Information Center for the 3Rs

The Korea National Information Center for the 3Rs (hereafter referred to as KNIC3Rs²) is a national network library for the humane use of animals in education and training, established in collaboration with the Institute for the 3Rs of Konkuk University, the Department of Institutional Review Ethics of the Catholic University of Korea, and the Animal, Plant and Fisheries Quarantine and Inspection Agency under the Ministry for Food, Agriculture, Forestry and Fisheries, Republic of Korea, effective from August 2011.

Goal of the KNIC3Rs

The goal of the KNIC3Rs is to enhance humane science and animal welfare in Korea and to promote a humane approach in science featuring the use of alternatives. The KNIC3Rs is

actively engaged in the production and dissemination of information products to encourage the use of methods that reduce or replace animal use or that minimize pain and distress to those animals that are used in research, testing, and teaching. We aim to provide information, resources, and practical guidelines on the 3Rs principles of Russell and Burch for the use of educators, students, researchers, and scientists.

The objectives of the KNIC3Rs are:

- to develop a web-based platform for sharing information and exchanging ideas emphasizing refinement, reduction, and the replacement of animals in science education and training.
- to provide services and support for educators, students, and researchers to improve searches for the Three Rs.
- to share information, ideas, skills, and techniques related to alternative methods and instructional best practices for educators, students, researchers, and scientists.
- to support the effective use of multi-media audiovisual aids that may be used as alternatives or supplements to the use of animals in teaching and training, and to provide practical guidelines for incorporating multi-media into instruction.
- to raise awareness of the need for respect for animals used in education and training.
- to assist educators and students to find the most effective non-animal methods to teach and study science.

Collaborating partners

The participants intend to cooperate in the exchange of humane science and animal welfare information resources to foster the humane care and use of animals used in research, testing, and teaching and to provide information on the use of alternative methods (3Rs) in education and training (Tab. 1).

Tab. 1: The list of collaborating partners who have engaged in the framework of the KNIC3Rs

Organization		Department	Country
Korea National Information Center for the 3Rs (KNIC3Rs)	Animal, Plant and Fisheries Quarantine and Inspection Agency	Animal Welfare Division	South Korea
	The Catholic University of Korea	Department of Institutional Review Ethics	
	Konkuk University	Institute for the 3Rs	
The American Anti-Vivisection Society		Animalearn	United States of America
Johns Hopkins University		Center for Alternatives to Animal Testing	
United States Department of Agriculture		Animal Welfare Information Center	
University of Edinburgh		The Jeanne Marchig International Center for Animal Welfare Education, The Royal (Dick) School of Veterinary Studies	United Kingdom
Royal Society for the Prevention of Cruelty to Animals		External Affairs Department	

¹ Institute for the 3Rs Library: <http://threers.konkuk.ac.kr/>

² <http://3r.animal.go.kr>



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International

Limitations and challenges

- Lack of professional trainers and experts
- Lack of guidance and training to assist in the practical application of the 3Rs
- Lack of interest within academia
- Lack of scholarship funding for young scientists to foster objectives
- No budget, space, or staff for the government body yet
- No department or scholarly degree in this discipline offered in academia
- No database search engine available in Korea

The way forward

- KNIC3Rs is planning to organize an educational workshop to offer training and an international joint symposium in August 2012 in Korea entitled: “Reducing the use of animals in research and education through better experimental design.”
- We are expanding the partnership to additional national and international organizations.
- We are searching for leveraging funds to provide standard training from international experts, such as is offered in Utrecht, The Netherlands, and to achieve better coordination with partners from the national and international organizations.

3 Conclusions

There is a tremendous amount of information available from international websites and sufficient alternatives available at relatively low cost and with proven educational effi-

cacy; however, it is very difficult to obtain these resources and the specific information desired in Korea due to: 1) a non-English speaking environment, 2) no respective education or training, 3) no local system of government oversight. Training in proper searching techniques and user-friendly systems on the practical application for the 3Rs are vital to comply with the requirements of the Animal Protection Act and other regulations. The website of the KNIC3Rs will assist scientists and laypeople in locating information on the 3Rs. Furthermore, guidelines for the care and use of animals in research and alternatives to the use of animals in teaching and training will be provided to promote laboratory animal welfare in Korea.

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