Laboratory Animal Welfare and the Three Rs in Korea

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Ten years ago, Korea could be viewed as a “paradise for animal experimenters”; but this situation has changed in favour of the animals, as a result of tireless efforts.

Animal welfare activities

In Korea, there was no legislation governing animal use in scientific research, testing and education until 2007. This situation could be seen as a “paradise for animal experimenters”, in that they had a free rein to carry out experiments whenever and however they chose. In view of this poor situation, animal activists protested for improvements to be made toward the implementation of appropriate regulations. Furthermore, since 1999, many scientists and veterinarians had been constantly trying to push for laws concerning the conduct of animal experiments through the Korean Association for Laboratory Animal Science (KALAS). KALAS was established in March 1985, and currently has over 4700 members. The association has played a central part in the improvement of animal welfare with respect to the use and care of experimental animals. In 1999, KALAS started the certification of professional laboratory animal technicians. There are two grades of certification: Korean Laboratory Animal Technologist (KLATg) and Korean Laboratory Animal Technician (KLAT). About 2300 KLATs have been certified by KALAS, and are working in the field of research, testing and education. The KLAT certification course for animal welfare emphasises both written and practical examinations. Therefore, a KLAT plays a major role in animal welfare, as a watchdog in the field of animal experiments in Korea.

On the other hand, since 1999, some major research institutes and universities have been accredited by the Association for Assessment and Accreditation of Laboratory Animal Care (AAALAC) International. This accreditation has gained popularity in Asia, and thus has increased the interest in, and concern for, animal welfare in Korea. In Korea, there was not only legislation, but also a guide for animal welfare. However, the Guide for the Care and Use of Laboratory Animals (the Guide), published by the Institute for Laboratory Animal Research (ILAR), a component of the US National Research Council (NRC), is commonly used. The Korean 7th edition of the Guide was published in 1999, and has been used nationwide. In 2008, we also published the Korean edition of another NRC Guide, Occupational Health and Safety in the Care and Use of Research Animals.

From 2009, the Working Group for the Guidelines of Animal Experiments had been working toward the publication of another national guideline, but this national guideline has not yet been published. The Working Group was supported by the Department of Animal Protection, the Korean Animal and Plant Quarantine Agency (KAPQA), and the Korean College of Laboratory Animal Medicine (KCLAM), which was founded in 2006. The KCLAM was included in the International American College of Laboratory Animal Medicine (IACLAM), along with the American College of Laboratory Animal Medicine (ACLAM), the European College of Laboratory Animal Medicine (ECLAM), and the Japanese College of Laboratory Animal Medicine (JCLAM). The 8th edition of the Guide introduces KCLAM as a member of the Institutional Animal Care and Use Committees (IACUC). Currently, KCLAM has over 180 members and 33 certified diplomates. It is expected to become a central organisation for animal welfare in the field of biomedical science in Korea, as a result of the studies being performed in large facilities, with organisations such as KALAS as a leading group.

In addition, the Korean Society for Alternatives to Animal Experiments (KSAAE) was founded with the support of the National Institute of Toxicological Research (NITR) in 2007, and has been promoting alternative toxicological study methods for the evaluation of food additives and drugs. These alternative studies are funded by the Korean Food and Drug Administration (KFDA). The Korean Centre for the Validation of Alternative Methods (KoCVAM) was founded by the National Institute of Food and Drug Safety Evaluation (NIFDSE) in November 2009.

In 2008, the Institute for the 3Rs (I3Rs) was established at the College of Veterinary Medicine, Konkuk University, Seoul, with support from the Royal Society for the Prevention of Cruelty to Animals (RSPCA), UK. It aims to apply the Three Rs principles where animals are used in the field of science, especially veterinary medical education and training. International symposia on alternatives to animal experiments were held in Seoul, jointly organised by the I3Rs and KALAS, in November 2008 and in August 2010. As was mentioned above, the interest in alternatives and the Three Rs principles is increasing rapidly in Korea. This awakening against the abuse of experimental animals may be attributed to some reports, which showed...
that about three million animals were used in 2005; however, this number was not officially verified. According to the official report of the Department of Animal Protection (KAPQA), the precise total number of animals used was 1,834,285 in 2012 (unpublished report).

In 2010, the I3Rs signed a memorandum of understanding with the Animal Welfare Information Centre (AWIC), the United States Department of Agriculture (USDA) and AnimalLearn, USA, to promote co-operation in the exchange of 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 (the Three Rs) in veterinary and medical education. In 2011, the I3Rs also made a contract with KAPQA to promote the Three Rs and to build up the Korea National Information Centre for the 3Rs (KNIC3Rs). In addition, the I3Rs held a Workshop on Advanced Concepts in Animal Welfare for Veterinary Teaching in Korea, based on the Concept of Animal Welfare (an animal welfare syllabus), for 18 professors from eight colleges of veterinary medicine. This initiative, in August 2012, was the second trial in Asia after the Philippines, and was supported by WSPA, UK.

The Korean Association for Laboratory Animals (KAFLA) was founded in 2010, and is based on the Laboratory Animal Act, in force since March 2009. KAFLA plays an important role in animal welfare, and its mission is to guarantee animal welfare through the assessment and accreditation of general animal facilities, to provide the best facilities for both academic institutions and commercial breeders.

**Legislation for animal welfare**

Korea recently implemented laws following the Three Rs principles of Russell and Burch, and initiated requirements for protocol review by an ethical committee prior to the performance of animal experiments. In 2008, a major revision of the Korean Animal Protection Act (APA) was introduced, which was consistent with the Three Rs concept of Replacement, Reduction and Refinement. This legislation followed a 4-year period with provision for consultation and public debate. The 5th revision of the APA specifies and promotes animal welfare — for example, it a) describes a system for an Animal Protection Inspector; b) places the duty of care and responsibility on companion animal owners; c) implements a licence and registration system for animal dealers, breeders, funeral services and companion animal owners; d) sets regulations on animal transport; e) requires the application of the Three Rs principles for animal use in experiments; and f) requires the mandatory establishment of an IACUC within all institutions that use animals in research, testing or education. Each IACUC should comprise 3-15 mem-

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*The mutual agreement for the establishment of Korea National Information Centre for the 3Rs (KNIC3Rs).*

From left to right: Jong Hyun Han, Head of Animal Protection & Welfare Team, Animal and Plant Quarantine Agency (APQA); Prof. Jin Soo Han, Director of the Institute for the 3Rs, Konkuk University (I3Rs); Dr Yi-Seok Joo, the Director General of Animal Disease Control Department, APQA; Prof. Byung In Choe and Dr Gwi Hyang Lee, both from the Nicholas Cardinal Cheong Graduate School for Life, The Catholic University of Korea.
bers, over one-third of which are not from the institute concerned. It must also include a doctor of veterinary medicine and an animal welfare specialist recommended by a non-governmental animal protection organisation.

The APA was completely revised in 2011 and its provisions, as well as the fines and penalties for violations, were greatly increased. Assessment and accreditation of Animal Welfare Husbandry, such as the Freedom Food of the RSPCA, were started in 2012. However, there have recently been increasing requests for further revision of the APA, and an ad hoc committee comprising four members, the National Assembly, the Green Party Korea, Korea Animal Rights Advocates (KARA), and the Solicitors for Life network, has already begun working toward its revision. First of all, the name has been changed to the Animal Welfare Act (AWA). Moreover, the committee members are focusing on a ban on animal testing for cosmetics. The final revision is expected to be completed, and the law amended, by the end of 2013.

Another new law, the Laboratory Animal Act (LAA), came into force in March 2009. Together, these two new laws have strengthened the responsibilities of the government and local authorities on matters relating to animal protection and humane animal use. A specific authority is responsible for enforcing each law. While the APA is regulated by the Ministry of Agriculture, Food and Rural Affairs, the LAA is overseen by the Ministry of Food and Drug Safety. These new laws have been developed and implemented with mutual assistance from KALAS for 10 years, and have provided an important framework for regulating the use of animals in science.

Both the APA and the LAA have clearly-stated standards relating to the role of the IACUC within institutions that use animals. However, having two laws can cause confusion, owing to the duplication of certain clauses, administrative oversight, and the imposition of separate requirements for the operation and review process for institute members, committee members, and researchers. The IACUC Guideline is a single set of standard guidelines, reporting requirements and practical training methods. This was published in 2012, to promote consistent interpretation and implementation of the law and to facilitate compliance; however, confusion still often remains.

Recently, in Korea, an annual reporting system was implemented to facilitate the collection of animal experiment statistics by the IACUCs. A total of 163 institutions had registered their IACUCs to the governing authority by December 2008, and this number almost doubled to 325 institutions by the end of 2011. The total number of animal protocols reviewed by IACUCs was 16,739, and the ratio of approval was 87%. In addition, KAFLA will implement the accreditation and monitoring system for animal use in the field of research and testing from 2013, which may promote rapid improvements in animal welfare in Korea.

Ten years ago, we self-mockingly called Korea a “paradise for animal experimenters.” However, we have driven the animal welfare movement forward and have worked hard to continuously promote the Three Rs philosophy. All of these efforts have resulted in the establishment of various legislation and the implementation of a fledgling nationwide IACUC system, but the struggle to become an advanced country in terms of animal welfare will never end in Korea.

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