Improving Animal Welfare in Regulatory Testing

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Introduction
Regulatory testing ensures that consumer products entering the marketplace are either safe for use or are appropriately labeled to convey the risk of their use. However, this safety testing requires the use of a large number of animals, and can cause them considerable pain and distress. While the Canadian public expects government to protect them from unsafe products, the public supports animal use in science only when mechanisms are in place to minimize pain and distress (Canadian Public Health Association, 2001; IPusz, 2002).

The CCAC is the national organization that acts on behalf of the people of Canada to set and maintain standards for the care and use of animals in science (www.ccac.ca). In June 2001, the CCAC, in partnership with the International Council for Laboratory Animal Science (ICLAS), held an international symposium in Quebec City, entitled Regulatory Testing and Animal Welfare, to discuss ways of improving the care and use of animals used for regulatory testing (Griffin et al., 2002). Outcomes from the symposium were published as proceedings in the US National Academies of Science Institute for Laboratory Animal Research (ILAR) Journal: Recommendations on implementation of the Three Rs emerged in seven distinct areas: acute local skin and eye toxicity testing; acute systemic toxicity testing; subchronic/chronic toxicity and carcinogen testing; safety evaluation using non-rodent species; animal care in regulatory toxicology; the safety and potency evaluations of biologicals; and animal care committees and animal use oversight.

As a follow-up to the ICLAS/CCAC International Symposium, the CCAC offered its second fellowship in animal policy development in the area of regulatory testing. The two-year fellowship project is designed to examine the extent to which the Symposium recommendations are being implemented, both in Canada and internationally. This poster summarizes the key recommendations made concerning animal care for regulatory testing and examines the challenges and opportunities for their implementation.

ICLAS/CCAC Symposium Recommendations
The following recommendations that emerged from the ICLAS/CCAC International Symposium on Regulatory Testing and Animal Welfare concerning animal care are presented alongside the associated challenges and opportunities, as observed from contract research organizations (CROs) in Canada and abroad.

Do not house social animals singly.

Challenges
- Social housing requires that study designs and schedules be adapted in terms of: numbers of animals used per group and per sex; selection of animals for the recovery phase of a study; sample collection; and recording of clinical signs as suspected or observed (e.g., vomit found in a cage would be a suspected clinical sign for each animal).
- Pair-housing is inappropriate in infusion studies in nonhuman primates (NHPs) where the animals are tethered and have an implanted catheter.

Opportunities
- To reduce the uncertainty of suspected clinical signs, animals can be separated, for example only when mechanisms are in place to minimize pain and distress (Canadian Public Health Association, 2001; IPusz, 2002).
- Where validated materials used for enrichment can be ingested by the animals, they are accompanied by certification that they are non-toxic and will not interfere with the results of testing.

Conclusion
Progress has been made in Canada and abroad to implement the recommendations from the ICLAS/CCAC International Symposium on Regulatory Testing and Animal Welfare in the area of housing and husbandry. Further advancement has been made in socially housing animals used for regulatory testing and providing environmental enrichment. However, further effort is needed to reach the “best practice” standard, for example, Canada and the US currently lag behind the European Union in switching from wire-bottom to solid-bottom cages.

Acknowledgment
The authors wish to thank Emily Verhiden for her considerable assistance in the preparation of this poster.

References

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- where there are active metabolites in feces, rodents may increase their exposure to a test compound if housed in a solid-bottom cage; and
- in cases where solid bottom cages are not well ventilated, nose lesions have been observed due to the build up of dust and ammonia levels.

Opportunities
- Solid-bottom cages are the standard in the EU.

Despite scientifically-based arguments to continue housing rodents on wire-bottom cages for toxicology studies, rat prior solid-bottom cages and exhibit lower stress-related behaviors than when housed in wire-bottom cages (Rock et al., 1997).

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