Australian Association for Humane Research Inc.

30 September 2005

Secretariat
Animal Welfare Committee
NHMRC (MDP 33)
GPO Box 9848
Canberra
ACT 2601

Dear Sir,

Guidelines for the creation, breeding, care and use of genetically modified and cloned animals for scientific purposes.

Thank you for the invitation to comment on the above draft document.

As you will probably be aware, the Australian Association for Humane Research Inc. is an abolitionist organization. Whilst we oppose all use of non-human animals in research on both ethical and scientific grounds, the genetic modification of animals is considered by us to be the worst abuse.

The procedures that genetically modified animals must endure are above and beyond that of other experimental animals, as they are subjected to both the modification process (and resultant effects) as well as the actual procedures relevant to the research to which have been assigned. This being considered, the production of guidelines for the creation, breeding, care and use of genetically modified and cloned animals is sanctioning the use of animals, goes against the 3Rs Principles and is a clear indication that the NHMRC has no commitment to either replacing animals, or toward humane and scientifically valid medical research.

Preamble.
We acknowledge that genetic modification occurs naturally and is indeed the basis for natural selection and, in turn, evolution, however the intervention of humans in the process comes at great cost. The following concerns have been cited by Christiansen and Sando[1]

- Reproductive techniques such as superovulation, insemination and embryo transfer can cause stress.
- Production of large offspring causing difficult births.
- Increased incidence of genetic anomalies.

[1] Christiansen, S.B. , & Sando, P. (2000). Bioethics:limits to the interference with life. *Animal Reproduction Science*, 60-61. 15-29.

- Clones are often behaviourally retarded and experience joint problems.
- Insertion of foreign DNA can lead to unpredictable responses from totally unrelated genes.
- Manipulation of genes may prevent the expression of stress responses.
- Engineering a loss of genetic diversity may make animals less resistant to newer diseases.

Of course we understand the great importance of studying genetics and consider that this is one of the key areas that should be pursued to truly understand the nature of human disease, however it is essential that these studies are of human genetics. It is on the genetic and molecular level that species vary, and indeed this is precisely what makes each species unique, but if this is the level at which variances occur that it would be logical to study human disease in humans and not in other species. We consider it to be negligent to extrapolate from a rat to a human for example; two totally different species with a totally different genetic make-up.

We therefore encourage further development into the emerging branches of genomics: proteomics, nanotechnology and pharmacogenomics, but only when they are directly applicable to the human species.

Regulation of the use of genetically modified or cloned animals.
One of the main uses of genetically modified and cloned animals is for "increasing productivity of farm animals."
The genetic modification of animals is even more unjustified when it is for the purpose of increasing productivity of farmed animals. The animals currently used for food and fibre already produce to their capacity, and current intensive housing facilities fall very short of fulfilling adequate welfare standards. The manipulation of these animals to produce an even higher yield is merely a further assault on their already exploited bodies.

Ethical and welfare issues related to the production and use of genetically modified and cloned animals.
This section mentions the acceptance of genetic engineering. Community acceptance of genetic modification, and indeed animal research in general, is unfortunately based on the false impression that non-human animals serve as relevant models for human disease. The general population is largely unaware of the dangerous repercussions that have occurred from reliance on animal research and therefore base their acceptance on media reports and false claims by researchers and pharmaceutical companies that animal tests give promise to miracle cures. In reality however, the extrapolation of results from one species to another cannot be relied upon. Community acceptance of any practice therefore cannot be used as justification if the community does not have an adequate understanding of the issue or the ramifications.

This section also suggests that genetically modified animals may lead to improved models for disease and thus a lower number of animals required. Again this claim is unfounded, as regardless of any genetic modification, there still remains species variation; meaning innumerable genetic factors that will affect any outcome. Furthermore, a disease that is being researched does not appear in its natural state but instead is artificially induced in the research animal. This can result in the same symptoms being expressed but the underlying illness is not the same as in its human form. Treatments then try to cure the symptoms of the falsified illness but is not

addressing nor curing the real problem, which may have been caused, or further affected, by social and environmental factors rather than biological factors alone.

We consider that a full review on the use of animals in medical research is long overdue, and should be conducted immediately, so that the public can learn for themselves the true damage, rather than benefit, that it causes to human health. We must dispel the myth that it is a "necessary evil" and finally acknowledge that it is simply dangerous science.

Guidelines:

5.1 (i) Tail biopsy of mice.

We were most disappointed to learn that tail biopsies are considered an acceptable method for the verification of DNA transmission – particularly without the use of anaesthesia in younger mice. Despite being performed prior to ossification, where bone has yet to fully form, the tail would still contain cartilage, blood vessels, nervous tissue and skin and therefore be subject to pain. Such a procedure could be compared with cutting a human ear without anaesthesia.

We note that collection of retro-orbital blood is discouraged but still allowed “if no other means is practicable”. This practice is abhorrent and should not be permitted under any circumstances. We question just what exactly would be a situation where there was “no other means practicable”?

Analysis of saliva or hair is the only method of DNA verification that may be considered humane and even then, if not performed correctly, can still result in undue stress to the animals.

5.1 (iii) Toe clipping of rodents.

This method of identification is also crude and unnecessary. There must certainly be more humane and permanent methods of identifying individual animals.

Conclusion

While we understand the NHMRC feels a need to develop guidelines to control the genetic modification of animals, we feel that they should be discouraging the use of non-human animals and instead promote more scientifically-valid research; i.e. that which is based on the human condition rather than on an inaccurate model which only mimics the symptoms of a human disease or condition. There are many emerging technologies that address human health directly and these are the only way to proceed if improved health and medical progress is truly the aim.

Yours sincerely,

Helen Rosser
Chief Executive Officer
Australian Association for Humane Research Inc.