

Royal Society response to the House of Commons Science and Technology Committee inquiry on Government proposals for the regulation of hybrid and chimaera embryos

The creation of hybrid and chimaera embryos is a complex area and each avenue for research is associated with a different level of risk, benefit and ethical issues. It is difficult to generalise about the appropriate regulations that should be applied to the various ways to create embryos containing both human and animal material without considering the exact details of the proposed work, their corresponding benefits and potential uses. This area of science is advancing rapidly and the regulatory framework should ensure that, as appropriately validated scientific developments offering potential benefits emerge they can be responsibly pursued.

The research licence applications considered recently by the Human Fertilisation and Embryology Authority (HFEA) involve the creation of embryos that are neither a true hybrid nor a chimaera. They are made by inserting human nuclear genetic material into denucleated 'empty shells' of animal eggs, with the aim of generating stem cell lines, purely for research purposes. The proposed technique is one of a number of routes being investigated to overcome the shortage of human eggs available for medical research. Whether this technique will prove to be a viable method of generating stem cells and establishing stem cell lines is not clear at present. However, stem cell research is still in its early stages and it is essential that we do not close off this and other avenues for development given the potential benefit of such work.

In January 2007 the HFEA ruled that these licences would not be granted before they undertook a full public consultation. We believe that it is unfortunate that this judgement has been delayed, however the decision to consult widely to reach a consensus on this complex issue is a sensible one. It is vital that the consultation takes account of our current understanding of the science and the potential future benefits. Furthermore, it should also be methodologically rigorous and based on principles of effective public engagement.

The Society has previously urged caution regarding the scientific case for the creation of true human-animal hybrids where human and animal nuclear genetic material is combined (Royal Society 2005) and we still believe that the case for such true hybrids has yet to be made. Chimaeras, which exist in a variety of forms, consist of cells from two or more genetically distinct organisms. When assessing research using chimaeras involving human and animal genetic material, consideration needs to be given to the merit of the scientific evidence and the ethical justification. For example, we support the creation of chimaeras by transplanting human embryonic stem cells into animal embryos which may prove vital for rigorously testing the properties of human embryonic stem cells before contemplating using them therapeutically (Royal Society 2005).

The UK has an international reputation as a leader in stem cell science, and we believe that it is vital that progress in this area continues as it has the potential to limit or even end the suffering of people with conditions such as Alzheimer's, Parkinson's and motor neuron disease. The Society will comment on this issue in greater detail as part of our response to the forthcoming HFEA consultation on human-animal hybrid research.

Reference

Royal Society (2005). *Royal Society's response to the review of the Human Fertilisation and Embryology Act 1990*.

Available online at <http://www.royalsoc.ac.uk/document.asp?tip=0&id=4202>

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