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## Human-animal embryos get go-ahead

- Ministers yield to pressure on stem cell research
- Scientists fear draft bill still does not go far enough

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Plans to outlaw the creation of "human-animal" embryos are set to be scrapped by ministers amid fears that an outright ban would hamper work on incurable diseases and damage British science.

The move represents a major climbdown from the government's earlier position seeking a blanket ban on any research involving the hybrid embryos.

Scientists want to fuse human cells with animal eggs to create mixed-species embryos because, as they grow, they will produce precious stem cells which may give valuable insight into intractable medical conditions such as Alzheimer's and motor neurone disease.

Using animal eggs, scientists can overcome the severe shortage of human eggs to create embryos for stem cell research. Interspecies embryos would be made by plucking a cell from a patient and inserting it into an empty cow or rabbit egg. An electric shock makes the two cells fuse and form an embryo, which is 99.9% human and 0.1% animal.

Embryonic stem cells extracted from the embryo could then be grown into nerves and other tissues, giving scientists insight into how the disease develops. The embryos must be destroyed no later than 14 days old and cannot be implanted.

The issue has become highly emotive and divisive since the government adopted a stance in a white paper last December, paving the way for new fertility legislation, but standing in the way of experiments using embryos made from animal eggs and human cells.

The government came under fire for its opposition to the research, and faced a revolt from scientists. They were backed by Sir David King, the government's chief science adviser, and Britain's two biggest funders of medical science, the Medical Research Council and the Wellcome Trust. Now, the draft bill published yesterday signals a government climbdown to permit research - but to the fury of some scientists who say does not go far enough.

For the first time, ministers have said they are in favour of legislation which would allow scientists to create "interspecies" embryos .

But while the intention is set out alongside the bill, crucially, it is not contained in the draft legislation itself. Scientists are concerned that the government may still not deliver the legal approval for the research in an area which can attract public unease about the ethics of experimenting across species boundaries. The draft human tissue and embryos bill will be discussed by parliament after a committee looking at the legislation reports on July 25. It has been asked to rule on whether the embryo research should be covered by legislation in the bill, or whether regulations must be passed to allow the future fertility watchdog, the Regulatory Authority for Tissue and Embryos, to issue licences.

Two teams of scientists, based at King's College London and Newcastle University, have applied to the Human Fertilisation and Embryology Authority for licences to create embryos by injecting human cells in empty eggs from rabbits or cows. But their work is being held up because the HFEA has deferred its decision until it completes a public consultation in July.

Yesterday's proposals were met with dismay by some scientists who accused government of being "short-sighted" and erecting "needless barriers" to research. Many believe the field of stem cell science is moving so fast that laws governing the research will quickly become obsolete.

"As the bill stands, our work would be banned," said Stephen Minger, who leads the stem cell team at King's College London. "To put up needless barriers that are constantly going to be pushed against is short-sighted. This

is not what parliament should be doing. This is why you have independent regulatory bodies."

Public health minister Caroline Flint said: "Our aim in drafting this bill is to deliver a legislative framework that will allow legitimate medical and scientific uses of human reproductive technologies to continue to flourish in this country, while giving the public confidence in how they are being used and developed."

Ms Flint denied that the government had staged a climbdown, but added. "I suppose it's the difference between saying 'No, but' instead of 'yes, but'."

## **FAQ Embryo science**

### **What are interspecies embryos?**

Embryos made by mixing cells from different species. A human chimera is an embryo that contains cells from an animal. A hybrid embryo is one that is made by fertilising an animal egg with human sperm or vice-versa. A cytoplasmic hybrid or "cybrid" is an embryo made by injecting a human cell into an empty animal egg.

### **What does the draft bill ban?**

As worded, it bans all interspecies embryos, but states that the government intends to exempt cybrids, human embryos with animal DNA and human chimeras. All must be destroyed after 14 days and it is forbidden to implant them into a womb. The bill explicitly outlaws hybrids.

### **Why do scientists want these embryos?**

Embryos contain stem cells which can grow into any of the tissues in the body. Scientists can use them to study genetic diseases and ultimately hope they will be able to use the cells to grow replacement tissues and organs.

### **Are they banned elsewhere?**

They are banned in France, Germany, Italy and Australia, whose parliament last year outlawed the creation of all kinds of hybrid and chimera embryos.

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