Britain moves toward loosening embryo laws despite objections

Britain's parliament has begun voting on the most controversial and divisive aspects of its new draft laws governing embryology and reproductive medicine. As *Nature Medicine* went to press, politicians in the House of Commons had voted by a 336 to 176 majority to make legal the creation of 'cybrid' embryos—human-like embryos from empty animal eggs. Patient groups and science advocates had campaigned in favor of the technology, arguing that it will potentially lead to breakthroughs in the treatment of diseases such as Parkinson's disease.

Politicians also voted in favor of legalizing the creation of 'true' animal-human hybrid embryos—for study only up to the 14-day stage—by the narrower margin of 286 votes to 223.

The government's Human Fertilisation and Embryology Bill, first introduced in Parliament on 12 May, aims to update UK regulations on a wide range of issues, including *in vitro* fertilization (IVF), embryo screening and basic and applied embryonic stem cell research.

UK Prime Minister Gordon Brown allowed members of his party to vote independently on four key aspects of the bill: the creation of human–animal hybrid embryos, screening of IVF embryos to allow 'savior siblings' whose umbilical cord blood stem cells can be used to treat genetic disease in other children in the same family, whether all-female couples will be granted the right to have children by IVF and whether the legal limit for abortion should be moved up to 20 weeks from the current 24 weeks.

Michael Hopkin

Hybrid debate: Scientists and religious leaders have clashed over multiple aspects of the bill

Only the last of these four measures did not receive approval from the House of Commons.

Despite some religious opposition to the bill, surveys suggest a clear majority among both the public and politicians in favor of most aspects of the legislation, which is expected to reach the Britain's upper parliamentary house for approval in several months' time.

Thus far, the measure that has arguably attracted the most religious opposition is the proposal to allow the creation of hybrid embryos and genetically modified human embryos for research. British embryologists at Newcastle University have already claimed to have created the UK's first 'cybrid' embryos—made by injecting DNA from a nonreproductive human cell into an empty cow egg. Researchers hope this technique will improve access to embryonic stem cell lines by removing the need to rely on the supply of 'spare' embryos from IVF.

Objections to allowing hybrid embryo research overlook the many regulations that researchers will still need to satisfy in order to be granted a license for such work, according to James Lawford-Davies, a lawyer at the London-based firm Clifford Chance specializing in issues surrounding the new bill. "The fact that you recognize something in the bill doesn't mean you can carry it out tomorrow," he says.

What frustrates Lawford-Davies is that in some cases, such as the development of artificial human gametes, the new legislation will make it legal to study them in the lab, but not to bring it to clinical application. He calls the approach "topsy-turvy," adding "I've always found the HFEA to be precautionary to the point of frustration."

Michael Hopkin, London

International effort seeks to identify mutations that drive cancer

If cancer cells are like cars, then it makes sense to know who's at the wheel. That's the view behind a new effort to reveal the 'driver' mutations that trigger cancer and the 'passenger' mutations that enhance tumor growth rates, asserts John McPherson, director of cancer genomics at the Ontario Institute for Cancer Research, in Toronto.

Based at the Ontario Institute, the newly formed International Cancer Genome Consortium (ICGC) was announced on 29 April. Its mission: to catalogue every genetic mutation in 50 different cancers. Each member nation—currently ten and counting—will tackle at least one disease type. "We'll be looking for 500 cases from each cancer for a total of 25,000 samples from the world," McPherson says. "That makes it the largest coordinated effort to date to find the underlying causes of cancer."

To date, perhaps only 50% of cancer mutations have been identified, suggests Brad Ozenberger of the National Human Genome Research Institute, in Bethesda, Maryland. But with new analytical tools, ICGC members hope to discover the rest within the next ten years, he says. "And with that, we'll be able to identify valuable new drug targets," Ozenberger predicts. "But, [just] as important, we'll also be able to divide cancers by their genetic distinctions and use that information to design custom approaches for specific tumors."

Indeed, tumors today are almost all classified by how they look under a microscope, explains Lincoln Stein, director of biocomputing at the Ontario Institute. "This project is going to force us to reorganize our tumor classification system according to affected cancer pathways," says Stein, who will also serve as upcoming curator of the consortium's database. He expects the consortium database will formally launch in the fall, with results from research expected within 12 to 18 months.

The data will be freely available to the global research community, Ozenberger adds. "Technology advances have brought us to a threshold where we can begin looking at cancer comprehensively," he emphasizes. "Now that we have that capability, we have to do this to improve people's health."

Charlie Schmidt, Portland, Maine