

Scientists appeal to revoke funding ban on embryo research

The congressionally imposed ban on US government funding of embryo research has come under attack from prominent American scientists who believe that lack of federal support prevents many of the nation's talented researchers from participating in one of the most promising avenues of biomedical research. Their unhappiness with the funding prohibition comes specifically in response to recent news that two privately funded teams have developed and grown human stem cells for the first time, one group using embryos as its source.

On December 2nd, the scientists involved in the work—James Thomson, of the University of Wisconsin's primate research center, and John Gearhart, of Johns Hopkins University School of Medicine—and National Institutes of Health Director Harold Varmus took their case to Capitol Hill. Government funding of research using embryos is essential if such work is to continue at a rapid pace, the researchers told members of the Senate Appropriations subcommittee on Labor, Health and Human Services and Education.

The ban was first imposed by Congress in 1995, and was renewed in legislation signed by President Clinton only weeks before the stem cell results were announced. Clinton lifted a ban on federal funding of research using fetal cells in 1993 that was first imposed by Ronald Reagan, but cannot lift the embryo research ban as it was enacted through congressional legislation.

Embryonic stem cells used for experimentation are derived from the blastocyst of embryos produced but not used for *in vitro* fertilization (IVF). They result from the early division of a newly fertilized egg and have the capacity to form any cell or tissue in the body, which is why scientists are attempting to gain control over their development *in vitro*. Although federal funding for Gearhart's work is not prohibited, because his team uses material from pregnancy termination rather than IVF blastocysts, he is keen for the ban to be lifted so the field can progress.

While Varmus was careful to point out that NIH has adhered to the law and will continue to do so, he described the magnitude of the recent breakthrough in unusually enthusiastic terms, implying that federal support could give it an even further boost. "It is not too unrealistic to say that this research has the potential to revolutionize the practice of medicine

and improve the quality and length of life," he said.

Thomson agreed: "How soon such therapies will be developed will depend on whether there is public support of research in this area. Private companies will have an important role in bringing new embryonic stem cell-related therapeutics to the marketplace; however, the current ban ... discourages the majority of the best US researchers from advancing this promising area of medical research."

Even officials from Geron, the private company that funded the recent work, argued that NIH should be involved. Thomas Okarma, Geron's vice president of R&D, said: "Much of this frontier is early, basic research that will otherwise be underfunded by the private sector, thereby delaying and reducing the full impact of this discovery."

Senator Tom Harkin (D-IA), cited the law's specific wording. The term human embryo includes "any organism not protected as a human subject," and Harkin asked Congress to consider whether the cells alone could be defined as "organisms." NIH lawyers are studying the law to find a loophole that will enable researchers to study stem cells and stay within legal boundaries.

The fight has become the latest example of the tension between politics and science, in which researchers resent the interference of politicians, yet remain dependent on their financial generosity.

Congressional sponsors of the ban, which include Jay Dickey, (R-ARK), oppose embryo research because they believe it is the taking of a human life, much like abortion. Dickey said recently, "I feel just as

strongly as I ever did that an embryo is still a life," and has vowed to fight any attempts to reverse the ban. And Henry Waxman (D-CA), who led an unsuccessful congressional fight some years ago to restore federal funding for fetal tissue research, is worried that some Republican leaders may seek

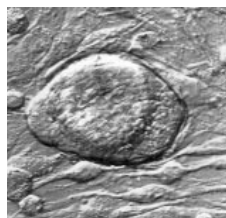
to impose an even broader ban—both public and private, much as they tried but failed to do with human cloning research last year.

The next stage of the debate is likely to revolve around a report on the issue by the National Bioethics Advisory Commission which is expected in spring.

Meanwhile, a joint report by the Human Genetics Advisory Commission and the Human Fertilisation and Embryology Authority in the UK issued on December 8th, reiterates calls for a government ban on human cloning, but suggests an expansion of "the purposes for which embryo research can be carried out under close regulation," given the new advances in stem cell research. The law now permits use of embryos up to 14 days old for fertility research only. The proposal means that embryos could be used for other types of medical research, such as tissue generation. A copy of the report, Cloning Issues in Reproduction, Science and Medicine is available at <http://www.dti.gov.uk/hgac/>

A European Union (EU) ethics advisory group that met six weeks ago also concluded that whereas research on human embryos should be strictly controlled, it should not be banned. The panel said that their decision reflects the diverse attitudes to embryo research within Europe.

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Human pluripotent stem cell colony

Courtesy of Michael Shamblo

AMDeC announces New York Cancer Project

Twenty-five medical schools and academic research centers in New York State are collaborating on a cancer research project under the aegis of a new consortium called the Academic Medicine Development Company (AMDeC). The project is supported by \$6 million funding in its first year and aims to advance epidemiological understanding of genetic and environmental causes of cancer. The work will be carried out in two phases: a pilot study beginning this spring will recruit 5,000 New Yorkers between the ages of 35 and

64 for study over a two-year period. Thereafter, 300,000 people will be monitored and evaluated over a 20-year period.

AMDeC member institutions include Albert Einstein Medical College, Beth Israel Medical Center, Memorial Sloan-Kettering, NYU Medical Center and Rockefeller University. Arnold Levine, president of Rockefeller and head of the AMDeC scientific advisory committee, says the consortium has been formed to "re-invigorate the City's biomedical research institutions."

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