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# Patients Do Not Need Congressman Langevin's Clone-to-Kill Bill

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COMMENTARY

# Patients do not need Congressman Langevin's clone-to-kill bill

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Last year, on March 9, 2009, President Obama signed Executive Order 13505 that liberalized the Federal government's funding of human embryonic stem cells. It allowed scientists to obtain funding from the National Institutes of Health in Washington, DC, to experiment with new stem cell lines derived from the destruction of so-called "leftover" human embryos.

The executive order was and remains, not only immoral and unjust, but also scientifically unnecessary.

This year, on March 9, 2010, Congressman James R. Langevin of Rhode Island, along with nine other U.S. representatives, introduced the Stem Cell Research Advancement Act (H.R. 4808) in the House of Representatives to amend the Public Health Service Act to provide for human destructive embryo research. If signed into law, the bill would not only codify President Obama's Executive Order 13505, but would also permit scientists to clone human embryos as long as the embryo is destroyed and not allowed to survive! Representative Langevin's proposed legislation, H.R. 4808, is a clone-to-kill bill.

The proposed legislation permits cloning-to-kill by redefining the scientific definition of human cloning. According to Langevin's bill, "[t]he term 'human cloning' means the implantation of the product of transferring the nuclear material of a human somatic cell into an egg cell from which the nuclear material has been removed or rendered inert into a uterus or the functional equivalent of a uterus.'' In contrast, the scientific consensus defines cloning as the creation and not the implantation of a cloned embryo. By manipulating the definition of cloning, Representative Langevin and his congressional colleagues want to reward scientists who would derive stem cells from the cloning and killing of human embryos, by giving them federal monies to fund their research with these embryonic stem cell lines. This bill would lead to the creation and the destruction of innocent human beings, and thus, like the President's executive order, is immoral and unjust.

Significantly, patients do not need Langevin's clone-to-kill bill. In the past year, scientists have continued to perfect the nuclear reprogramming technology that will allow doctors to obtain patient-specific stem cells from adult human cells without the need for either human eggs or human embryos. These reprogrammed patient-specific stem cells, called induced pluripotent stem (iPS) cells, are comparable to embryonic stem (ES) cells. They are also cheaper and easier to make than the stem cells derived from destructive human embryo research. In fact, they are so cheap and so easy to work with, that our undergraduate biology majors here at Providence College could readily learn how to work with iPS cells! Moreover, though several studies had suggested that iPS cells may be subtlety different from and therefore less efficient than ES cells, the Hochedlinger Laboratory at the Harvard Stem Cell Institute has recently

reported that they have identified the key genetic difference between these two kinds of stem cells. Their discovery suggests that scientists will be able to significantly improve the quality of iPS cells by further manipulating their genes.

In time, physicians will be able to use iPS cells to generate replacement cells for patients suffering from a variety of chronic diseases including Type I Juvenile Diabetes, Lou Gehrig's Disease, and Parkinson's Disease. One seminal proof-of-principle study has already shown that iPS cells can be used to cure sickle cell anemia in a humanized mouse model. Several months ago, for the first time, a research team from Spain created iPS cells that could be used to cure patients with a rare genetic disorder called Fanconi Anemia. In time, iPS cells may also be able to help patients with spinal cord injury to recover lost functioning. Finally, iPS cells are already being used for disease modeling and drug discovery. All of this, I want to stress, is already happening now, and will happen without Congressman's Langevin's clone-to-kill bill.

In sum, there is much promise and excitement in nuclear reprogramming (iPS) technology. Thus, it is not surprising that Ian Wilmut, creator of Dolly the cloned sheep, has rejected cloning and has focused his current research efforts, not on cloned embryonic stem cells, but on iPS cells. Again, for the same reason, it is not surprising that the California Institute for Regenerative Medicine (CIRM) – a state agency expressly created to encourage embryonic stem cell research – last year gave 10 of its 14 major research grants, not to fund ES cell work, but to advance adult stem cell and iPS work instead. Professor Wilmut and CIRM affirm what Congressman Langevin and his colleagues deny, that adult stem cells and iPS cells, and not cloned embryonic stem cells, are the hope of the future.

Congressman Langevin is a self-identified pro-life Democrat who is a member of the Bi-Partisan Congressional Pro-Life Caucus. By abandoning his support for this unjust, immoral, and unnecessary clone-to-kill bill, he can prove that he is not only pro-life but also pro-patient as well.

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