



American Society for Biochemistry and Molecular Biology

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## **ASBMB CALLS FOR POLICIES TO MAXIMIZE THE POTENTIAL OF HUMAN EMBRYONIC STEM CELL RESEARCH**

**ISSUE:** The federal government must do more to increase researchers' access to human embryonic stem cell lines for the purpose of developing therapies to improve the quality of life and well-being of Americans.

**BACKGROUND:** One of the greatest challenges currently facing society is finding ways to alleviate the burden imposed by the plethora of debilitating chronic and hereditary diseases that affect millions of patients nationwide. As has been the case throughout history, those who are suffering look to science for hope. However, centuries of clinical observation and intervention have been maddeningly inefficient and ineffective in developing treatments and cures, often leaving patients incapable of leading normal, productive lives. Fortunately, the 21<sup>st</sup> century offers a new way forward: human embryonic stem cells represent a laboratory-based system that potentially can be used to model afflictions ranging from diabetes to Parkinson's disease, allowing for rapid analysis of disease symptoms and development of efficient treatments and cures. At both the scientific and political levels, the American Society for Biochemistry and Molecular Biology continues to be an enthusiastic advocate for embryonic stem cell research.

Slightly more than a decade after they were first isolated, the promise of embryonic stem cells is now being delivered upon. With their potential to develop into every adult tissue type, embryonic stem cells have been used by researchers to treat and cure a variety of ailments in the laboratory<sup>1</sup>. Based on these results, scientists now have begun clinical trials using embryonic stem cells to treat spinal cord injuries and macular degeneration. Future trials are also in the works, aimed at amyotrophic lateral sclerosis (Lou Gehrig's Disease), diabetes, and heart and liver diseases. With such possibilities, it is not surprising that a recent poll found that almost 70% of Americans approve of embryonic stem cell research<sup>2</sup>, a definitive statement of public support. Such widespread appeal also permeates the government, as a bipartisan congressional effort has twice in the past decade approved legislation that would have expanded federal funding for embryonic stem cell research. Although those efforts ultimately were turned back by presidential veto, they paved the way for President Obama to issue an

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<sup>1</sup> <http://stemcells.nih.gov/research/scilit/highlights/>

<sup>2</sup> *Research!America*



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executive order in 2009 that expanded the number of NIH-approved stem cell lines eligible for federal funding, a move applauded by ASBMB and the scientific community as a whole.

Despite these gains, declining funding, ambiguous legislation and the constant specter of judicial challenges have left this promising line of research in peril, slowing progress and delaying the development of sorely needed cures and treatments. American research on embryonic stem cells has thus been forced to operate under a fragmented regulatory landscape governing the derivation and use of human embryonic stem cells. Lacking a cogent, unified federal policy, the current situation has resulted in a discouraging and obstructionist research environment that has dissuaded many scientists from entering the field, while driving others to work abroad. Moreover, as these issues impede researchers in the United States, scientists in foreign countries are swiftly moving past them. Indeed, some of the most significant recent advancements in the field have occurred abroad: Japanese researchers, led by the U.S.-trained Shinya Yamanaka, developed the technology to create induced pluripotent stem cells using mouse cells, before American researchers belatedly applied to the same techniques to generate human induced pluripotent stem cells.

**RECOMMENDATION:** To allow American researchers to maximize the potential of embryonic stem cells, ASBMB strongly supports:

- a) Passage of federal legislation that codifies into law the existing National Institutes of Health Guidelines on Human Stem Cell Research. By promoting scientific advancement while respecting ethical concerns, these standards provide both researchers and lawmakers a clearly defined template regulating stem cell research;
- b) Congressional passage of legislation obviating the Dickey-Wicker amendment. This onerous law, which prohibits federal funding for any research “in which a human embryo or embryos are destroyed,” places ambiguous and unreasonable restrictions on human embryonic stem cell research, stifling progress and delaying the development of cures and treatments.

By taking these steps, the government will demonstrate its dedication to biomedical research for the sake of improving human health and will allow science to fulfill its promises to millions of hopeful patients.