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OFFICE OF THE VICE PRESIDENT – RESEARCH AND INNOVATION

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Submitted via: https://osp.od.nih.gov/comment-form-reducing-reliance-on-human-embryonic-stem-cells-in-nih-supported-research/

April 21, 2026

NIH Office of Science Policy
6705 Rockledge Drive, Suite 630
Bethesda, MD 20892

RE: UC Response to NIH Pause on New Submissions to the NIH Human Embryonic Stem Cell Registry and Request for Information on Reducing Reliance on Human Embryonic Stem Cells in NIH-Supported Research (NOT-OD-26-031)

To Whom It May Concern:

I write on behalf of the University of California (UC) system in response to the NIH Pause on New Submissions to the NIH Human Embryonic Stem Cell Registry and Request for Information on Reducing Reliance on Human Embryonic Stem Cells (hESC) in NIH-Supported Research issued on January 23, 2026.

The UC system is comprised of ten campuses, six academic health centers, an Agriculture and Natural Resources division, and three affiliated U.S. Department of Energy national laboratories. Our researchers have been central contributors to the development of stem cell science for more than 40 years, including in the derivation, characterization, banking, and clinical translation of hESC lines, as well as in the training of the next generation of stem cell scientists and physician-investigators.

While UC recognizes that NIH requested input on four specific questions in the RFI, we respectfully submit the following comments to provide NIH broader considerations as it reassesses the utility of hESCs in biomedical research. UC's comments are provided below.

1. **Response to the Request for Information on Reducing Reliance on Human Embryonic Stem Cells in NIH-Supported Research**

Human embryonic stem cells (hESCs) remain essential to research because they are the most reliable and well-understood type of pluripotent stem cell. They provide a stable and consistent model for studying how human cells grow and specialize. Scientists use them as a reference point to evaluate newer stem cells and biotechnologies, including induced pluripotent stem cells (iPSCs). While these newer approaches are promising, they can vary in quality and stability and are often

compared to established hESC lines to ensure they perform as expected. In research areas such as early human development, reproductive health, and understanding certain diseases, hESCs continue to provide insights that other cell types cannot yet fully replicate.

hESCs have also played a leading role in the clinical advancement of stem cell-based therapies. Many early-stage clinical efforts have relied on hESC-derived products because they are well-characterized and supported by decades of research. This accumulated experience, including manufacturing methods, safety testing, and regulatory pathways, has created a strong foundation for translating stem cell science into patient treatments. Prematurely moving away from hESCs would likely slow this progress by requiring the field to rebuild that foundation using less mature technologies.

In addition, federal investment has supported the development of carefully tested hESC lines, standardized laboratory methods, and shared research infrastructure. These resources underpin ongoing studies and emerging therapies for conditions such as Parkinson's disease and diabetes. Reducing reliance on these established cell lines would not simply shift research to alternatives; it would disrupt active work, delay therapeutic development, and risk losing the knowledge and infrastructure built through decades of public investment.

While we do not support reducing reliance on hESCs in NIH-supported research at this time, if NIH determines that a future transition is warranted, we urge that such a transition be evidence-based and adequately resourced. We recommend that NIH:

- **Invest substantially in improving alternative models**, including research focused on genomic stability, epigenetic resetting, and reproducible differentiation.
- **Develop clear scientific benchmarks for equivalency**, using existing hESC lines as reference standards during any transition period.
- **Create a phased transition plan,** allowing ongoing projects and clinical translation efforts to proceed without disruption.
- **Sustain funding for workforce development and training**, ensuring that expertise in pluripotent stem cell biology is not lost during policy shifts.

Absent these measures, a rapid reduction in hESC use could take important tools away from the research community and diminish the return on decades of NIH-supported research.

2. **Response to the Pause on New Submissions to the NIH Human Embryonic Stem Cell Registry**

The NIH Human Embryonic Stem Cell Registry (Registry) plays a critical role in ensuring that federally funded hESC research uses cell lines that meet established ethical and scientific standards. Over the past two decades, widely adopted differentiation protocols, genomic reference datasets, and validated reagents have been built around Registry-approved lines. By enabling researchers nationwide to use the same well-characterized materials, the Registry strengthens reproducibility, data comparability, and scientific rigor, and advances federal priorities on transparency and gold standard science, such as required in the Executive Order on Restoring Gold Standard Science.

A pause on new submissions would hinder scientific progress and clinical translation. Deriving, characterizing, and banking new lines, particularly those suitable for clinical-grade (GMP) production, is time- and resource-intensive. As stem cell-based therapies advance toward broader clinical use, demand for genetically stable, well-documented lines will increase. Preventing the addition of new hESC lines could constrain future therapeutic options and limit the ability of researchers to improve standards of quality and reproducibility over time.

Accordingly, we respectfully request that NIH continue to permit the submission and inclusion of new hESC lines to the NIH Human Embryonic Stem Cell Registry until a clear, scientifically validated, and adequately resourced pathway for alternative models is established.

Thank you for the opportunity to comment. We appreciate NIH's engagement with the research community on these complex issues and would welcome continued dialogue as the agency considers next steps related to the NIH Human Embryonic Stem Cell Registry and the future of hESC research in NIH-supported programs.

If you have any questions regarding these comments or would like additional information, please contact Agnes.Balla@ucop.edu and Timothy.Miller@ucop.edu.

Sincerely,

Deborah Motton, Ph.D.
Executive Director
Research Policy Analysis & Coordination
University of California, Office of the President