

Science, Ethics and Policy Challenges of Pluripotent Stem Cell-Derived Gametes

Meeting Overview

Recent research suggests that it may be possible to derive gametes from a variety of pluripotent stem cell (PSC) sources. While preliminary, these important findings may open doors to new discoveries in both basic and applied research. Significant hurdles stand in the path of the widespread application of this technology. However, anticipating that these hurdles can be overcome, the ability to create PSC-derived gametes raises a number of very challenging ethical and policy issues ranging from safety concerns to considerations of reproductive liberty to the implications of human germ-line genetic modification.

The impetus for this project was the conviction of the Hinxtion Group members present at the 2006 meeting that international efforts are necessary to address new issues in stem cell science in order to help ensure that the science proceeds in an ethically acceptable fashion, and to reduce the likelihood that diversity in international response will result in obstacles to ethically and scientifically defensible research. To fulfill this mandate, we propose to utilize the successful model of the first Hinxtion Group meeting, bringing together topical experts and policymakers for collaborative, pragmatic discourse on the timely and provocative issues raised by the ability to derive human gametes from PSC lines. The group will continue to be led by the original US-UK Hinxtion Group steering committee, and will include international experts from the fields of stem cell science, bioethics, reproductive medicine, regenerative medicine and law. We will convene this group for a three-day meeting to engage in international and interdisciplinary examination of the ethical and policy challenges raised by the prospect of deriving human gametes from PSC lines.

The specific objectives of the project are to:

- 1) Create a road map for the benefit of policymakers and the public, providing best estimates of projected time horizons and relevant contextual information for likely scientific and clinical applications related to PSC-derived gametes;
- 2) Provide thorough, informed, forward-looking analyses of the challenges to societal regulation of the research and applications related to PSC-derived gametes (e.g., in the areas of somatic cell nuclear transfer research, assisted reproductive technology research and practice, and germ line modification); and
- 3) Provide guidance regarding appropriate oversight and ethically acceptable modes of pursuing this research, thereby reducing the likelihood that diversity in international response will result in obstacles to ethically and scientifically defensible research similar to those raised by existing differences in national policies governing stem cell research and nuclear transfer.

To the extent that it is possible for the group to reach consensus, the principle product of this project will be a statement outlining appropriate oversight and ethically acceptable modes of pursuing this scientific research. The consensus statement will be freely and widely disseminated and publicized with press conferences and briefings held in, at least, the US and the UK. In addition, scholarly articles will be submitted for publication in the bioethical, philosophical, and/or scientific literature and presented at scientific and philosophical meetings. The papers will be posted, for public access, on at least the Hinxtion Group website (hinxtiongroup.org) and the Berman Institute of Bioethics (Bioethicsinstitute.org) website. We will distribute reprints of our papers internationally to key stakeholders. Finally, the Hinxtion Group website will be updated to provide full coverage of this meeting, including elements such as electronic copies of the briefing materials distributed to working group members and a regularly updated presentation of related news stories.