Harvard University
Embryonic Stem Cell Research Oversight (ESCRO) Committee

Policy

Title: Scope of ESCRO Review ("ESCRO Scope")

Control #	Version	Written by	Approved by	Approval date
P-005	v.2.0	ESCRO P&P Subcomm.	ESCRO Committee	3/10/2009, posted 10/30/09, effective 5/1/2010

1.0 Summary

This policy describes the types of activities that are within the ESCRO's purview.

1.1 Applies to

- ESCRO Administrator/ESCRO Committee
- All Covered Persons

1.2 Related Documents

- Protocol Review SOP
- Banking SOP

2.0 Definitions

2.1 Human Pluripotent Stem Cells (hPSC): human stem cells that can develop into cells of all three germ layers (endoderm, ectoderm, mesoderm). hPSC include human embryonic stem cells (hESC) and induced pluripotent stem (iPS) cells.

2.2 Human Embryonic Stem Cells (hESC): a subset of human pluripotent stem cells derived from pre-implantation embryos

2.3 Non-embryonic hPSC: the subset of human pluripotent stem cells that are not hESC, e.g., iPS cells

2.4 Cybrid: in this document, a cell with a human nucleus and the cytoplasm of another species

The ESCRO's scope is defined by the materials used (Covered Materials) and what is done with the materials (Covered Activities). Details follow:

3.0 Covered Materials

The ESCRO's primary focus is on **embryos** and **human embryonic stem cells** (hESC), a subset of human pluripotent stem cells (hPSC); however, because non-embryonic hPSC behave in much the same way as hESC, the ESCRO also covers certain activities with **non-embryonic hPSC**. In addition, until the effects of using neural stem cells in the central nervous system (CNS) have become clear, in some cases the ESCRO will also oversee the use of **human neural stem cells**.

Finally, the ESCRO also has oversight of some activities with **gametes**. Further detail of activities with these materials is below.

Covered Materials do not include materials that have been provided to another institution under a duly executed MTA.

4.0 Covered Activities

Details of the activities the ESCRO oversees are as follows.

4.1 General

4.1.1 Any activity in which the **identity** of the donors of embryos, blastocysts, gametes, somatic cells or other tissues from which **hESC** were or may be derived is readily ascertainable or might become known to a Covered Person

4.2 Creation of gametes or embryos

4.2.1 Any *in vitro* activity performed with the intention of experimentally creating a **human gamete** by any means and from any source (e.g., from hPSC, from somatic and other non-pluripotent cells, etc.)

4.2.2 Any activity performed with the intention of experimentally creating a **human or cybrid embryo** by any means, including, but not limited to parthenogenesis, androgenesis, or nuclear/chromosome transfer

Culture of intact embryos may not extend beyond 14 days or until formation of the primitive streak begins, whichever occurs first.

Creation of an embryo by fertilization solely to donate to research is prohibited.

Transfer into a human or non-human uterus of experimentally created human or cybrid embryos made using nuclear transfer, parthenogenesis, or androgenesis is prohibited.

4.2.3 Any activity that inadvertently produces a **human gamete or human or cybrid embryo** needs to be reported to the ESCRO immediately

4.3 Derivation of lines

4.3.1 Derivation of new lines from pre-implantation human **embryos**

Culture of intact embryos may not extend beyond 14 days or until formation of the primitive streak begins, whichever occurs first.

4.3.2 Derivation of new pluripotent lines using **existing hESC lines**

The lines described above must also be registered upon successful derivation.

4.4 Use of lines

4.4.1 *In vivo*

4.4.1.1 Introduction of **hPSC** into any **non-human animal** at any stage of **prenatal development**

This includes hPSC from any source, including but not limited to hESC, those derived from human somatic cells, amniotic fluid, or fetal tissue.

Introduction of human pluripotent cells into human or non-human primate blastocysts is prohibited.

4.4.1.2 Introduction of **hPSC or human neural stem cells** into the **central nervous system** of any **non-human animal** (pre- or postnatal)

This includes neural stem cells from any source, including but not limited to hESC, non-embryonic hPSC, fetal tissue, adult somatic cells and other non-embryonic sources.

4.4.1.3 Any activity in which there is a significant possibility that **hPSC** introduced into pre- or postnatal **animals** could give rise to **gametes**

4.4.1.4 Introduction of **hPSC** into **humans**

4.4.1.5 Any **chimera** work with **hESC** lines that does not fall into any other Covered activity

4.4.2 *In vitro*

4.4.2.1 *In vitro* use of **hESC** lines that does not fall into any other Covered activity

Use of lines is automatically registered by the ESCRO Office upon protocol approval.

5.0 Prohibited Activities

5.1 Human reproductive cloning

5.2 Creation of an embryo by the method of **fertilization** solely to donate to research

5.3 ***In vitro* culture** of any intact human embryo, regardless of method of creation, for longer than **14 days** or until formation of the **primitive streak** begins, whichever occurs first

5.4 **Transfer** into a human or non-human **uterus** of experimentally created human or cybrid embryos made using nuclear transfer, parthenogenesis, or androgenesis
5.5 Introduction of **hPSC** or **non-human embryonic stem cells** into **human blastocysts**
5.6 Introduction of **hESC** into **non-human primate blastocysts/embryos**
5.7 Introduction of **non-embryonic hPSC** into **non-human primate blastocysts/ embryos,** pending further research that will clarify the potential of such introduced cells to contribute to neural tissue or to the germ line
5.8 **Breeding** of animals into which hPSC have been introduced; the full Committee will consider exceptions to this rule with a strong scientific rationale for breeding.

6.0 Activities Not Subject to ESCRO Oversight

6.1 Derivation of lines from non-embryonic sources
6.2 Teratoma formation to test for pluripotency
6.3 *In vitro* activities that use non-embryonic hPSC and do not otherwise fall into a category requiring review
6.4 Human/non-human chimera work that uses non-embryonic hPSC and does not otherwise fall into a category requiring review

7.0 Examination of Provenance

7.1 Lines requiring examination by the full ESCRO

7.1.1 Any non-NIH hESC line derived outside of Harvard University
7.1.2 Due to ethical concerns about the process for obtaining the embryos used to derive the BresaGen hESC lines listed on the NIH registry, any request to use these lines will be reviewed by the full committee on a case-by-case basis and must be supported with a strong scientific rationale for their use.

7.2 Lines eligible for administrative ESCRO examination

The following types of lines can undergo administrative examination of provenance (examination by the ESCRO Administrator):

7.2.1 Any hESC line derived within Harvard University
7.2.2 Any hESC line included on the NIH registry, except those described above

Except for those lines described above, subsequent examination of provenance is not required if line has already been accepted by the Harvard University ESCRO.

8.0 Banking

Refer to the University's Banking SOP.

Revision History

Date	Purpose	Supersedes
	Clarified scope; updated to reflect 2008 NAS amendments	v. 1.0