



Annual Report on hESC Research

Pursuant to Section 38(d) of Article III of the Missouri Constitution

Name of institution, hospital, other entity, or other person which conducted human embryonic stem cell research in the State of Missouri during the prior calendar year, 2018:

The Curators of the University of Missouri

Nature of the human embryonic stem cells used in, and the purpose of, the research:

Title: Pluripotent stem cells: modeling syncytiotrophoblast and pathogenesis.

This project will identify the general parameters of TB formation in the BMP-hESC model and establish a standard set of conditions that will allow comparisons to be made across individual ESC and iPSC lines. These studies will improve our understanding of early placental morphogenesis and pathogenesis and may allow the development of early pregnancy screening processes for the prediction of late onset pregnancy disorders (e.g. PE). Analysis of cell fusion as it occurs in BMP-hESC/iPSC, with an emphasis on the roles of transcription factors, such as GCM1 & GATA2, fusogenic proteins such syncytin-1 & -2 (ERVW1, ERVFRD-1, respectively) and a presently little understood HERV envelope gene product (ERV-Fb1) that inhibits cell-cell fusion. Re-creation of STB from infants born to control mothers and mothers with PE by generating iPSC from discarded umbilical cord, converting these pluripotent cells to STB and other lineages by the BMP4 approach, and comparing the process of STB differentiation in iPSC lines from PE and control pregnancies. The cell lines are WA01, also known as H1, and WA09, also known as H9.

Title: Pluripotent human stem cells as models for normal and diseased trophoblast.

This project is designed to establish a new model for studying extravillous trophoblast (EVT), a placental cell type that invades the wall of the womb during the first trimester of pregnancy and whose failure to invade properly can lead to serious consequences for mother and child, including a condition called pre-eclampsia. The cell lines are a male line, hESC H1 (WAO1), and two Female lines, H7 (WA07) and H9 (WA09).

Manner in which the public may obtain copies of or otherwise gain access to this report:

On the web: research.missouri.edu/policies/files/hescreport18.pdf

Written request sent to: MU Office of Research
Attn: hESC Report
310 Jesse Hall
Columbia, MO 65211

By signing below, the reporting entity or person certifies that the research was conducted in compliance with the requirements of subdivision (6) of subsection 2 of section 38(d) of Article III of the Missouri Constitution.

Mark A. McSteele

Vice Chancellor for Research and Economic
Development
University of Missouri

12/2/19

Date



John R. Ashcroft
SECRETARY OF STATE
STATE OF MISSOURI

CAPITOL OFFICE
ROOM 208
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JAMES C. KIRKPATRICK
STATE INFORMATION CENTER
(573) 751-4936

Stem Cell Research Annual Form

Name of institution, hospital, other entity, or other person conducting human embryonic stem cell research in the State of Missouri during the prior calendar year:

How the public may obtain copies of or otherwise gain access to its annual report:

Signed:

Mark A. McIntosh Mark A. McIntosh VCR 12/2/19
Authorized Signature Printed Name Title Date

Please mail this completed form to:

Office of Secretary of State
ATTN: Executive Deputy Secretary of State
600 West Main St., PO Box 1767
Jefferson City, MO 65102-1767

Missouri Constitution Article III, Section 38(d)

Each institution, hospital, other entity, or other person conducting human embryonic stem cell research in the state shall (i) prepare an annual report stating the nature of the human embryonic stem cells used in, and the purpose of, the research conducted during the prior calendar year, and certifying compliance with subdivision (6) of subsection 2 of this section; and (ii) no later than June 30 of the subsequent year, make such report available to the public and inform the Secretary of State how the public may obtain copies of or otherwise gain access to the report.

JAMES C. KIRKPATRICK STATE INFORMATION CENTER
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