

**NAS EMERGING SCIENCE WORKSHOP  
STEM CELL MODELS FOR ENVIRONMENTAL HEALTH  
JUNE 3-4, 2010**

SUGGESTED READING

**Session 1: The Basic Biology of Stem Cells**

Doi et al. Differential methylation of tissue- and cancer-specific CpG island shores distinguishes human induced pluripotent stem cells, embryonic stem cells and fibroblasts. *Nat Genet.* 2009 Dec;41(12):1350-3. Epub 2009 Nov 1.

<http://www.nature.com/ng/journal/v41/n12/abs/ng.471.html>

Ezashi T et al. Derivation of induced pluripotent stem cells from pig somatic cells. *Proc Natl Acad Sci U S A.* 2009 Jul 7;106(27):10993-8. Epub 2009 Jun 18.

<http://www.pnas.org/content/early/2009/06/18/0905284106.abstract>

Ezashi T, Das P, and Roberts RM. Low O<sub>2</sub> tensions and the prevention of differentiation of hES cells. *Proc Natl Acad Sci U S A.* 2005 Mar 29;102(13):4783-8. Epub 2005 Mar 16.

<http://www.pnas.org/content/102/13/4783.full>

Feng et al. Hemangioblastic derivatives from human induced pluripotent stem cells exhibit limited expansion and early senescence. *Stem Cells.* 2010 Apr;28(4):704-12.

<http://www3.interscience.wiley.com/journal/123283181/abstract>

Lebkowski JS. Interview: Discussions on the development of human embryonic stem cell-based therapies. *Regen Med.* 2009 Sep;4(5):659-61.

<http://www.futuremedicine.com/doi/abs/10.2217/rme.09.49>

Park IH et al. Disease-specific induced pluripotent stem cells. *Cell.* 2008 Sep 5;134(5):877-86. Epub 2008 Aug 7.

[http://www.cell.com/abstract/S0092-8674\(08\)01001-5](http://www.cell.com/abstract/S0092-8674(08)01001-5)

Telugu BP, Ezashi T, and Roberts RM.

The promise of stem cell research in pigs and other ungulate species. *Stem Cell Rev.* 2010 Mar;6(1):31-41.

<http://www.springerlink.com/content/f066382pu65m8218/>

Trounson, A.

The production and directed differentiation of human embryonic stem cells.

Endocrine Reviews 27 (2): 208-219

<http://edrv.endojournals.org/cgi/content/abstract/27/2/208>

Yu and Thomson. Pluripotent Stem Cell Lines. 2008. Genes Dev. 2008 22:1987-1997.

<http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2735345/>

### **Session 3: Stem Cell Models for Assessing the Effect of Environmental Chemicals**

Breier JM et al. Neurotoxicol Teratol. 2010 Jan-Feb;32(1):4-15. Epub 2009 Jun 24. Review.

Neural progenitor cells as models for high-throughput screens of developmental neurotoxicity: state of the science.

<http://www.ncbi.nlm.nih.gov/pubmed/19559083>

Breier JM et al. Development of a high-throughput screening assay for chemical effects on proliferation and viability of immortalized human neural progenitor cells.

Toxicol Sci. 2008 Sep;105(1):119-33. Epub 2008 Jun 11.

<http://toxsci.oxfordjournals.org/cgi/content/short/105/1/119>

CIRM Workshop Summary. Stem Cells in Predictive Toxicology. July 2008

[http://www.cirm.ca.gov/pub/pdf/CIRM\\_Predictive\\_Tox.pdf](http://www.cirm.ca.gov/pub/pdf/CIRM_Predictive_Tox.pdf)

Harrill JA et al. Quantitative assessment of neurite outgrowth in human embryonic stem cell-derived hN2 cells using automated high-content image analysis. Neurotoxicology. 2010 Jun;31(3):277-90. Epub 2010 Feb 25.

<http://www.ncbi.nlm.nih.gov/pubmed/20188755>

Kouros-Mehr H et al. GATA-3 links tumor differentiation and dissemination in a luminal breast cancer model. Cancer Cell. 2008 Feb;13(2):141-52.

<http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2262951/?tool=pubmed>

Lu P and Werb Z. Patterning mechanisms of branched organs. Science. 2008 Dec 5;322(5907):1506-9. Review.

<http://www.sciencemag.org/cgi/content/full/322/5907/1506>

Radio NM et al. Assessment of chemical effects on neurite outgrowth in PC12 cells using high content screening. Toxicol Sci. 2008 Sep;105(1):106-18. Epub 2008 Jun 6.

<http://toxsci.oxfordjournals.org/cgi/content/short/105/1/106>

Sneddon JB and Werb Z. Location, location, location: the cancer stem cell niche.

Cell Stem Cell. 2007 Dec 13;1(6):607-11. Review.

<http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2571117/?tool=pubmed>

#### **Session 4**

Trosko JE. Role of diet and nutrition on the alteration of the quality and quantity of stem cells in human aging and the diseases of aging. *Curr Pharm Des.* 2008;14(26):2707-18. Review.

<http://www.ncbi.nlm.nih.gov/pubmed/19948204>

Trosko and Chang. Factors to consider in the use of stem cells for pharmaceutical drug development and for chemical safety assessment. *Toxicology.* 2010 Mar 30;270(1):18-34. Epub 2009 Dec 3. Review.

<http://www.ncbi.nlm.nih.gov/pubmed/18991690>

#### **Additional Material:**

Dolgin E. Gene flaw found in induced stem cells. *Nature.* 2010 Apr 1;464(7289):663.

<http://www.nature.com/news/2010/100331/full/464663a.html>

Judson RS et al. In vitro screening of environmental chemicals for targeted testing prioritization: the ToxCast project. *Environ Health Perspect.* 2010 Apr;118(4):485-92

<http://ehp03.niehs.nih.gov/article/action?articleURI=info%3Adoi/10.1289/ehp.0901392>

Vogel G. Stem cells. Reprogrammed cells come up short, for now. *Science.* 2010 Mar 5;327(5970):1191.

<http://www.sciencemag.org/cgi/content/short/327/5970/1191>

#### **Stem Cell Resources**

NIH stem cells Web page

<http://stemcells.nih.gov>

2008 Amendments to the National Academies' Guidelines for Human Embryonic Stem Cell Research

[http://www.nap.edu/catalog.php?record\\_id=12260](http://www.nap.edu/catalog.php?record_id=12260)

NAS Understanding Stem Cells booklet (2006)

<http://dels.nas.edu/Materials/Booklets/Understanding-Stem-Cells2>

Please note this booklet does not include information on iPS cells.