Curriculum Vitae
Xianmin Zeng

Work Address

Buck Institute for Research on Aging
8001 Redwood Boulevard
Novato, CA 94945, USA
Tel: 415-209-2211
Email: xzeng@buckinstitute.org

Education

1997	M. Sc, Molecular Biology, Technical University of Denmark
	M. Sc, Chemical Engineering, Technical University of Denmark
2000	Ph.D., Molecular Biology, Technical University of Denmark

Positions

2000-2002	Postdoctoral fellowship, National Institute of Aging
2002-2005	Postdoctoral fellowship, National Institute on Drug Abuse
2005-2008	Assistant Professor, Buck Institute for Age Research
2007-2014	Director, CIRM Shared Research Laboratory for Stem Cells & Aging, Buck Institute
2009-2017	Associate Professor, Buck Institute for Age Research
2015-2017	Chief Scientific Officer, Axol Bioscience Ltd, Cambridge, UK
2017-Present	Professor, Buck Institute for Age Research
2017-Present	Ajuncant Professor, Davis School of Gerontology, University of Southern California
2010-Present	Founder and Chief Exercutive Officer, XCell Science, Inc
2011-Present	Founder and Chief Exercutive Officer, NxCell, Inc

Honors

1997	Best graduating Student at the Department of Microbiology, Technical University of Denmark.
1997	Ph.D fellowship, Technical University of Denmark.
1998	The Plasmid Foundation Award, Denmark.
2000	Intramural Research Training Award, National Institutes of Aging.
2002	Intramural Research Training Award, National Institutes on Drug Abuse.
2005	LL Hillblom Foundation Award

Professional Societies

American Association for the Advancement of Science
Society for Neuroscience
International Society for Stem Cell Research
International Society for Cell Therapy

Participation in Grant Review Panels

2010 NIH PACT peer review panel
2010-2015 Connecticut SCR Peer Review Committee
2013- NIH SBIR review panels, multiple study sections
Ad Hoc review for >30 other funding agencies.

Participation in Journal review

Editorial Board member: Scientific Reports, Neuroscience, Current Stem Cell Research & Therapy, etc
Ad Hoc Journal Review for >30 journals including Nature, Cell Stem Cell, Journal of Neuroscience

Grant Awards

1R56AG057620-01 (Zeng, Kennedy, MPI): 9/1/17-8/31/18
NIA/NIH
Effect of ApoE isoforms on Alzheimer's disease and Aging using isogenic human ApoE iPSC model
Genetic variants in the apolipoprotein E (ApoE) locus are associated with Alzheimer's disease (AD) where ApoE4 is the largest risk factor with neurodegenerative effect while ApoE2 exhibits neuroprotection, however, how ApoE isoforms predispose to AD, or protect against it, is incompletely understood. By combining induced pluripotent stem cells (iPSC) and precise gene editing technology, it is now feasible to generate otherwise isogenic iPSC lines with ApoE alleles. In this proposal, we will assess cellular phenotypes associated with AD in neural cells derived from isogenic iPSC lines with combinations of ApoE alleles, and seek to modify the severity of cellular phenotypes associated with neurodegeneration by altering physiologic features of aging. Completion of this study will provide a comprehensive analysis of the effects of two known major risk factors for AD, aging and ApoE genotype. In turn, this will provide insight into potential mechanisms underlying the protecting effects of ApoE2, as well as the underlying reasons why ApoE4 increases disease risk.

2R44ES023522-02 (Zeng, PI): 9/13/13-2/28/18
NIH/NIEHS
Developing a neurotoxicity tool kit
We and others have provided proof-of-concept for iPSC-based neurotoxicity assays, several issues however need to be addressed before such assays can be used routinely to test neurotoxicity and/or to replace the expensive and time-consuming in vivo animal tests. For example, there is a lack of neural reporters in referenced lines of both genders, which will be invaluable for further assay development and refinement. There is also a lack of datasets that can serve as baseline for toxicity assays, and a reference response to a reference set of compounds that can be used to calibrate the response of future lines and compare with the rodent data. The objective of this grant is to develop a neurotoxicity tool kit that addresses these issues.
Total cost: $1,476,634

1R43ES023522-01 (Zeng, PI): 9/13/13-8/31/14
NIH/NIEHS
Novel Assays for Screening the Effects of Chemical Toxicants on Cell Differentiated from iPSC

The goal is to develop a screening platform using induced pluriopotent stem cell (iPSC)-derived neural stem cells (NSCs) and iPSC-derived primary dopaminergic (DA) neurons in a 96-well format for measuring neurotoxic and neuroprotective effects of various agents.
Total cost: $224,994

CL1-00501-1 (Zeng, Program Director): 7/1/08 – 11/30/14
California Institute for Regenerative Medicine (CIRM)
Shared Research Laboratory and Stem Cells Techniques Course
The goal of this grant is to provide over twenty investigators at the home institute and neighboring institutions with the ability to culture, differentiate, and genetically manipulate hESCs – including clinical-grade hESC lines – to develop diagnostic and therapeutic tools.
Total cost: $4,100,000

TR2-01856 (Zeng, PI): 6/1/11-8/31/14
California Institute for Regenerative Medicine (CIRM)
Banking transplant ready dopaminergic neurons using a scalable process
The overall goal of this proposal is to develop a hESC-based therapeutic candidate (dopaminergic neurons) by developing enabling reagents/tools/processes that will allow us to translate our efforts into clinical use. We have used PD as a model but throughout the application have focused on generalized enabling tools. The tools, reagents and processes we will develop in this project will allow us to move towards translational therapy and establish processes that could be applied to future IND-enabling projects. In addition, the processes we will develop would be of benefit to the CIRM community.
Total cost: $6,016,624

TG2-01155 (Zeng, Program Director): 7/1/10 – 2/28/14
California Institute for Regenerative Medicine (CIRM)
CIRM Research Training Program in Stem Cells and Aging
We propose to sponsor a CIRM Research Training Program in stem cell and regenerative medicine, which will provide six postdoctoral Ph.D. or M.D. (Type III) trainees per year with state-of-the-art stem cell-related research experience and coursework in a rich scientific environment. The goal is to prepare trainees for productive, independent research careers in stem cell and regenerative medicine, with an emphasis on training individuals from scientifically and demographically diverse backgrounds. Consistent with our mission, the program will focus on stem cells in aging and age-related disease, with particular concentration in neurodegenerative disorders.
Total cost: $1,571,229

N/A (Zeng): 7/1/06 – 6/30/09
Role: PI
The roles of Nurr1 and Pitx3 in dopaminergic differentiation of hESCs
Larry L. Hillblom Foundation Start-Up
Direct cost: $93,636/year

DT1-00688-1 (Zeng): 7/1/08 – 3/31/09
Role: PI
Develop a cell replacement therapy for Parkinson's disease using human embryonic stem cells
CIRM Disease team planning award

Direct cost: $50,000

N/A (Buck Institute): $20.5 million
CIRM facilities grant
Dr. Zeng conceived a scientific program (Stem Cells and Aging) with 23 projects that include efforts from every laboratory at the Buck Institute for the scientific portion of the application, and did the bulk of the writing.

Patents

- Method for Generating Multiple Cellular Products from Single Pluripotent Cell Source". Serial No. 62/641,570. Filing Date: March 12, 2018. Inventors: Xianmin Zeng and Mahendra Rao
- Methods and Compositions for Rapid Generation of Single and Multiplexed Reporters in Cells. Inventor: Xianmin Zeng and Mahendra Rao, was filed in Dec 2014.
- ENGINEERING MESENCHYMAL STEM CELLS USING HOMOLOGOUS RECOMBINATION. Inventor: Xianmin Zeng and Mahendra Rao, was filed in Nov 2014.
- Targeted Neuronal And Glial Human Embryonic Stem Cell Line. Inventor: Xianmin Zeng and Ying Liu, was filed in April 07, and was converted to US provisional application, Serial No. 12/056,823 on 3/27/08.
- High throughput drug screening using human pluripotent stem cells and their differentiated neural derivatives. Inventor: Xianmin Zeng, was filed on 9/04/09 as a US provisional application, Application No. 61/240,097.

Invited Speaker:

1. SOT 2018, March 2018. San Antonio, US
2. National University if Singapore, Feb 2018, Singapore
3. Chilean Society of Neuroscience, Oct 2017, Chiloe, Chile
4. International Symposium on Stem Cell Aging and Regenerative Engineering, Sept 2017, Brisbane, Australia
5. The 3rd International anti-aging health industry development forum, Aug 2017, Chengdu, China
6. The 10th World Congress of Alternative medicine, Aug 2017, Seattle, US
7. Comparative Biology of Tissue Repair, Regeneration, and Aging, MDI Biological Laboratory, Maine, USA
8. Stem Cell in Drug Discovery and Toxicity Screening, July, 2017, Boston, US
9. ASGCT, May 2017, Washington DC, US
10. McGill University, March 2017, Montreal, Canada
11. Inauguration of GERO, Dec 2016. Santiago, Chile
12. National Neurology congress, Oct 2016. Mar del Plate, Argentina
13. PROPAG-AGEING, 1st Anneal meeting. Oct 2016. Florence, Italy
14. Northeast Ohio Medical University, Sept 2016, Rootstown, OH
15. University of Maryland School of Medicine, Sept 2016, Baltimore, MD
16. 10th KSSCR annual meeting, Aug 2016. Seoul, Korea
17. University of Bologna, July 2016. Bologna, Italy
18. Lecture at GSK. April 2016. Cambridge, UK
19. ASPET 2016, April 2016. San Diego, USA
20. ES Symposium, Mar 2016. Tokyo, Japan
21. SOT 2016, Mar 2016. New Orleans, USA

22. Lecture at FujiFilm, Mar 2016. Tokyo, Japan
23. Symposium on Aging, Feb 2016. Cha University, Seoul,
24. 10th World Stem Cell Summit. Dec 2015. Atlanta, GA, USA
25. Tenth NYSCF Annual Translational Stem Cell Conference. Nov 2015. NY.
26. First China Aging Symposium. Oct 2015. Emei, China
27. Molecular Mechanisms in Tissue Degeneration and Regeneration. Oct 2015. Bonus Aires, Argentina
28. Genetic and Molecular Pathways in Human Aging and Longevity, NIA symposium. Aug 2015. Bethesda, MD.
29. ISSCR. June 2015. Stockholm, Sweden
30. Danish Stem Cell Research Society (DASCS) annual meeting. June 2015. Vejle, Denmark.
31. Stem cell in drug discovery. May 2015. Cambridge, UK
32. Stem cell research in a neurotranslational perspective, Danish Society for Neuroscience. May 2015. Nyborg, Denmark
33. Stem Cell Therapy-2015. March 2015. Chicago USA.
34. 12th IDDST, Nov 2014, Suzhou, China
35. Meeting on Stem Cell Differentiation Assays for HTS and Toxicology Studies. June 2014. NIEHS/NIH. RTP, NC
36. Seminar at University of Southern Denmark. May 2014. Odense, Denmark
37. 9th World Stem Cell Summit. Dec 2013. San Diego, CA, USA
38. NCATS/NIEHS/NIH CRM REGENERATIVE MEDICINE, INTERACTIONS WITH INDUSTRY MEETING. Aug 2013. Bethesda, MD
39. Seminar at Van Andel Institute. May 2013. Grand Rapid, MI.
40. First USC/Buck Symposium on the Biology of Aging, April 2013. Los Angeles, CA
41. Seminar at Scripps. Jan 24, 2013. La Jolla, CA.
42. 3rd International Translational Regenerative Medicine Center (ITRC). Jan 17, 2013. Pasadena, CA
43. 8th World Stem Cell Summit. Dec 2012. West Palm Beach, FL, USA
44. University of Texas. Aug 2012, Houston.
45. SLAS Asia. June 2012. Shanghai, China
46. Sino-US Stem cell symposia. June 2012. Shanghai, China
47. "Stem Cell Biology 2012: Basic Science and Translational Advances" for the Experimental Biology meeting, April 21 – 25, 2012 in San Diego, California.
48. NINDS iPSC consortia meeting. March 2012. Washington DC,
49. LabLinks Symposium. Cell Press. March 2012. San Francisco, CA
50. Seminar at NCATS, NIH. March 2012. Rockville, MD
51. Buck Stem Cell Symposium. March 2012. Novato, CA
52. International Translational Regenerative Medicine Center (ITRC), Inaugural Symposium. Feb 2012. Pasadena, CA
53. Seminar at Sigma Aldrich. Feb 2012. Saint Louis, MO
54. Seminar at New York Stem Cell Foundation. Jan 2012. New York.
55. The 4th Guangzhou International Conference on Stem Cell Biology and Regenerative Medicine. Dec 2011. Guangzhou, China
56. Seminar at Sacramento State University. Oct 2011, Sacramento, CA
57. The 4th Annual Maryland Stem Cell Research symposium. Oct 2011. Maryland, USA
58. World Stem Cell Summit. Oct 2011. Pasadena, CA, USA
59. The 4th Annual Maryland Stem Cell Research Symposium. Oct 2011. Baltimore, MD, USA
60. Odense University. Aug 2011. Odense, Denmark
61. The 9th Annual ISSCR meeting. June 2011. Toronto, Canada
62. Stem Cells for Drug Developers Summit. April 2011. Boston

63. Johns Hopkins University, March 2011. Baltimore, MD, USA
64. Cambridge Healthtech Institute's Sixth Annual *Stem Cells* meeting, Molecular Medicine Tri-Conference. Feb 2011, San Francisco
65. Beckman Research Institute, City of Hope. Feb 2011. Duarte, CA, USA
66. Cha University. Jan 2011. Seoul, Korea.
67. The Croucher Advanced Study Institute, Hong Kong University. Jan 2011. Hong Kong.
68. BIT Life Sciences' 3rd Annual Congress of Regenerative Medicine & Stem Cell. Dec 2010. Shanghai, China
69. CHI's Stem Cells in Drug Discovery & Development meeting. Nov 2010. San Diego, CA
70. Institute for Stem Cell Biology & Regenerative Medicine, Stanford University School of Medicine. Sept 2010. Palo Alto, CA, USA
71. 8th Annual ISSCR meeting. June 2010. San Francisco, USA
72. Lund University. May 2010. Lund, Sweden.
73. 2nd International Conference on Stem Cell Engineering Conference. May, 2010. Boston, USA
74. University of California, Davis. Mar 2010. Davis, CA. USA
75. University of Texas Health Center. Oct 2009. San Antonia, TX, USA
76. Innovation and translational stem cell therapy for diabetes and neurological diseases. City of Hope and Consulate General of Sweden. Sept 2009. Duarte, CA, USA
77. The Parkinson's Institute. Sept 2009. Sunnyvale, CA, USA
78. Karolinska Institute. March 2009. Stockholm, Sweden
79. Beckman Research Institute, City of Hope. Jan 2009. Duarte, CA, USA
80. California Institute of Regenerative Medicine GMP Workshop. Nov 2008. San Francisco, USA
81. 1st Stem cell symposia at the Bay. Organizer. Aug 2008. Novato, CA, USA
82. Danish Stem Cell Symposia. June 2008. Odense, Denmark
83. The promise of stem cells in human health. Feb 2008. Dominican University, San Rafael, CA, USA.
84. Winter Conference on Brain Research. Jan 2008. Snow Bird, UT, USA
85. IDDST. Nov 2007. Xi'an, China
86. Winter Conference on Brain Research. Session Chair. Feb 2007. Aspen, CO, USA
87. GTCBIO's Modern Drug Discovery and Development Summit. 2006. Philadelphia, USA
88. First Genome Dynamics in Neuroscience Meeting. May 2006. Oslo, Norway.
89. Bay Area Stem Cell Symposium. Oct 2005. Berkeley, CA.
90. National Institute on Drug Abuse, Jan 2005. Baltimore, USA
91. National Institute of Aging, Aug 2004. Baltimore, USA
92. Stem Cell Symposia, Nov 2003. Johns Hopkins University, Baltimore, USA, 2002
93. Immunology Conference. May 2001. Johns Hopkins University, Baltimore, MD, 2001.
94. Keystone symposium, B cell Immunobiology and Disease. April 2001. Snowbird, UT, USA

Committees

Chair, SCRO, Buck Institute, 2012-present

Member, IACUC, Buck Institute, 2009-2017

Member, Junior Faculty Recruitment Committee, 2009-2010

Member, Stem Cell Faculty Search Committee, Buck Institute, 2010-2012

Teaching

NIH/John Hopkins University: Human embryonic stem cell culture. Two 1-week hands-on courses/year Instructor. 2003-2005

Buck Institute:	Human pluripotent stem cell techniques. Four 1-week courses/year. Director. 2006-present

Student/Postdoc supervised: >50

Publications (in reverse chronological order)

1. Rao, MS, Pei, Y, Garcia, TY, Chew, S, Kasai, T, Hisai, T, Taniguchi, H, Takebe, T, Lamba, DA, and Zeng, X. 2018. Making multiple therapeutic cell products from a cGMP-compliant iPSC line. Cytotherapy. In Press
2. Zhu J, Reynolds J, Garcia T, Cifuentes H, Chew S, Zeng X, Lamba DA. Generation of Transplantable Retinal Photoreceptors from a Current Good Manufacturing Practice-Manufactured Human Induced Pluripotent Stem Cell Line. Stem Cells Transl Med. 2018 Feb;7(2):210-219. doi: 10.1002/sctm.17-0205. Epub 2017 Dec 21. PMID: 29266841
3. Baghbaderani BA, Syama A, Sivapatham R, Pei Y, Mukherjee O, Fellner T, **Zeng X**, Rao MS. Detailed Characterization of Human Induced Pluripotent Stem Cells Manufactured for Therapeutic Applications. Stem Cell Rev. 2016 Aug;12(4):394-420. doi: 10.1007/s12015-016-9662-8 PMID: 27283945
4. Momcilovic O, Sivapatham R, Oron TR, Meyer M, Mooney S, Rao MS, **Zeng X**. Derivation, Characterization, and Neural Differentiation of Integration-Free Induced Pluripotent Stem Cell Lines from Parkinson's Disease Patients Carrying SNCA, LRRK2, PARK2, and GBA Mutations. PLoS One. 2016 May 18;11(5):e0154890. doi: 10.1371/journal.pone.0154890. eCollection 2016. PMID:27191603
5. Zdravkovic T, Nazor KL, Larocque N, Gormley M, Donne M, Hunkapillar N, Giritharan G, Bernstein HS, Wei G, Hebrok M, **Zeng X**, Genbacev O, Mattis A, McMaster MT, Krtolica A, Valbuena D, Simón C, Laurent LC, Loring JF, Fisher SJ. Human stem cells from single blastomeres reveal pathways of Embryonic or trophoblast fate specification. Development. 2015 Oct 19. pii: dev.122846. [Epub ahead of print]. PMID: 26483210
6. Baghbaderani, BA, Tian, X, Neo, BH, Burkall, A, Dimezzo, T, Sierra, G, Zeng, X, Warren, K, Kovarcik, DP, Fellner, T, and Rao, MS. Human induced Pluripotent Stem Cells manufactured under cGMP are available for pre-Clinical and Clinical Applications. Stem Cell Reports. 2015 Sep 23. pii: S2213-6711(15)00249-0. doi: 10.1016/j.stemcr.2015.08.015. [Epub ahead of print] PMID:26411904
7. Pei, Y, Peng, J, Behl, M, Sipes, NS, Shockley, KR, Rao, MS, Tice RR, and Zeng, X. Comparative Neurotoxicity Screening in Human iPSC-derived Neural Stem Cells, Neurons, and Astrocytes. 2015. Brain Res. 2015 Aug 5. pii: S0006-8993(15)00593-4. doi: 10.1016/j.brainres.2015.07.048. [Epub ahead of print] PMID: 26254731
8. Wenker SD, Leal MC, Farías MI, **Zeng X**, Pitossi FJ. Cell therapy for Parkinson's disease: Functional role of the host immune response on survival and differentiation of dopaminergic neuroblasts. Brain Res. 2015 Aug 1. pii: S0006-8993(15)00589-2. doi: 10.1016/j.brainres.2015.06.054. [Epub ahead of print]. PMID: 26239914
9. Awad, O, Sarkar, C, Panicker, LM, Miller, D, Zeng, X, Sgambato, JA, Lipinski, MM, and Feldman, RA. Altered TFEB-mediated lysosomal biogenesis in Gaucher disease iPSCs-derived neuronal cells. 2015. Hum Mol Genet. 2015 Jul 28. pii: ddv297. [Epub ahead of print] PMID:26220978

10. Holmgren G, Ghosheh N, **Zeng X**, Bogestål Y, Sartipy P, Synnergren J. Identification of stable reference genes in differentiating human pluripotent stem cells. Physiol Genomics. 2015 Apr 7: physiolgenomics.00130.2014. doi: 10.1152/physiolgenomics.00130.2014. [Epub ahead of print] PMID: 25852171
11. Shaltouki, A, Sivapatham, R, Pei Y, Gerencser, AA, Momcilovic, O, Rao, MS, and Zeng, X. Mitochondrial alterations by PARKIN in dopaminergic neurons using PARK2 patient-specific and PARK2 knock-out isogenic iPSC lines. Stem Cell Reports. 2015. 2015 Apr 2. pii: S2213-6711(15)00075-2. doi: 10.1016/j.stemcr.2015.02.019. [Epub ahead of print] PMID: 25843045
12. Hunsberger J, Efthymiou AG, Malik N, Behl M, Mead IL, **Zeng X**, Simeonov A, Rao M. Induced pluripotent stem cell models to enable in vitro models for screening in the CNS. Stem Cells Dev. 2015 Mar 20. [Epub ahead of print]. PMID: 25794298. [PubMed - as supplied by publisher]
13. Pei, Y, Sierra, G, Sivapatham, R, Swistowski, A, Rao, RM, and Zeng, X. A platform for rapid generation of single and multiplexed reporters in human iPSC lines. Sci Rep. 2015 Mar 17;5:9205. doi: 10.1038/srep09205. PMID: 25777362 [PubMed - in process]
14. Sivapatham R, and Zeng, X. Generation and characterization of patient-specific induced pluripotent stem cell for disease modeling. Methods Mol Biol. 2014 Dec 18. [Epub ahead of print]. PMID:25520284 [PubMed - as supplied by publisher]
15. Melo-Braga MN, Meyer M, **Zeng X**, Larsen MR. Characterization of human neural differentiation from pluripotent stem cells using proteomics/PTMomics - current state-of-the-art and challenges. Proteomics. 2014 Nov 24. doi: 10.1002/pmic.201400388. [Epub ahead of print]
16. **Zeng X**, Hunsberger JG, Simeonov A, Malik N, Pei Y, and Rao R. Modeling CNS diseases using iPSC. Stem Cells Transl Med. 2014 Nov 3. pii: sctm.2014-0102. [Epub ahead of print]
17. Silvestrini MT, Yin D, Martin AJ, Coppes VG, Mann P, Larson PS, Starr PA, **Zeng X**, Gupta N, Panter SS, Desai TA, Lim DA. Interventional Magnetic Resonance Imaging-Guided Cell Transplantation into the Brain with Radially Branched Deployment. Mol Ther. 2015 Jan;23(1):119-29. doi: 10.1038/mt.2014.155.
18. Peng, J., Liu, Q., Rao, MS., and Zeng, X. Survival and engraftment of dopaminergic neurons manufactured by a GMP-compatible process. Cytotherapy. 2014 Sep;16(9):1305-12.
19. Liu, Q., Swistowski, A., and Zeng, X. Human Neural Crest Stem Cells Derived from Human Pluripotent Stem Cells. Methods Mol Biol. 2014;1210:79-90. doi: 10.1007/978-1-4939-1435-7_7.
20. Swistowski, A., and Zeng, X. "Directed differentiation of Human NSC/NPC into Dopaminergic Neurons" Chapter 9 in “Neural Stem Cells Assays”. 2014.
21. Shaltouki, A., and Zeng, X. Efficient differentiation of Astrocytes from Human Pluripotent Stem Cells in Defined Conditions. Chapter 11 in “Neural Stem Cells Assays”. 2014.
22. Melo-Braga MN, Schulz M, Liu Q, Swistowski A, Palmisano G, Engholm-Keller K, Jakobsen LA, **Zeng X**, Larsen MR. Comprehensive quantitative comparison of the membrane proteome, phosphoproteome and sialiome of human embryonic and neural stem cells. Mol Cell Proteomics. 2013 Oct 30. [Epub ahead of print] PMID: 24173317 [PubMed - as supplied by publisher]
23. Momčilović, O., Qiuyue Liu, Q., Swistowski, A., Russo-Tait, T., Zhao, Y., Rao, MS., and Zeng, X. Genome Wide Profiling of Dopaminergic Neurons Derived from Human Embryonic and Induced Pluripotent Stem Cells. Stem Cells Dev. 2014 Feb 15;23(4):406-20. doi: 10.1089/scd.2013.0412. Epub 2013 Nov 7.

24. Efthymiou, A., Shaltouki, A., Jha, B., Heman-Ackah, S., Swistowski, A., **Zeng X**., Rao, M., and Malik, N. Functional Screening Assays with Neurons and Astrocytes Generated from Pluripotent Stem Cell-Derived Neural Stem Cells. J Biomol Screen J Biomol Screen. 2013 Sep 9. [Epub ahead of print] PMID: 24019252
25. Yan, Y., Shin, S., Jha, B., Liu, Q., Sheng, J., Li, F., Zhan, M., Davis, J., Bharti, KB Zeng, X., Rao, M., Malik, N., and Vemuri, MC. Efficient and Rapid Derivation of Primitive Neural Stem Cells and Generation of Brain Subtype Neurons from Human Pluripotent Stem Cells. Stem Cells Transl Med. 2013 Oct 10. [Epub ahead of print] PMID:24113065 [PubMed - as supplied by publisher] .
26. Ren, YJ., Zhang. S., Mi, R., Liu, Q., Zeng, X., Rao, M., Hoke, A., and Mao, HQ. Enhanced Differentiation of Human Neural Crest Stem Cells Towards Schwann Cell Lineage by Aligned Electrospun Fiber Matrix. 2013. Acta Biomater. 2013 Apr 26. doi:pii: S1742-7061(13)00215-8. 10.1016/j.actbio.2013.04.034. [Epub ahead of print] PMID: 23628775 [PubMed - as supplied by publisher]
27. Haines, B., Mao, X., Xie, L., Spusta, S., Zeng, X., Jin, K., and Greenberg, DA. Neuroglobin expression in neurogenesis. Neurosci Lett. 2013 May 2. doi:pii: S0304-3940(13)00398-4. 10.1016/j.neulet.2013.04.039. [Epub ahead of print] PMID:23643985 [PubMed - as supplied by publisher]
28. Liu, Q., Pedersen, OZ., Peng, J., Couture, LA., Rao, MS., and Zeng, X. Optimizing dopaminergic differentiation of pluripotent stem cells for the manufacture of dopaminergic neurons for transplantation. Cytotherapy. 2013 Aug;15(8):999-1010. doi: 10.1016/j.jcyt.2013.03.006. Epub 2013 May 7.
29. Zeng, X., and Couture, L. Pluripotent stem cells for Parkinson's disease: progress and challenges. Stem Cell Res Ther. 2013 Apr 15;4(2):25. [Epub ahead of print] PMID: 23672848. [PubMed - as supplied by publisher]
30. Shaltouki, A., Peng, J., Liu, Q., Rao, MS., and Zeng, X. Efficient generation of astrocytes from human pluripotent stem cells in defined conditions. Stem Cells. 2013 May;31(5):941-52. doi: 10.1002/stem.1334. PMID: 23341249
31. Peng, P., Liu, Q, Rao, MS., and Zeng, X. Using human pluripotent stem cell derived dopaminergic neurons to evaluate candidate Parkinson's disease therapeutic agents in MPP+ and rotenone models. J Biomol Screen. 2013 Jun;18(5):522-33. doi: 10.1177/1087057112474468. Epub 2013 Jan 30.
32. Zou Y, Zhang N, Ellerby LM, Davalos AR, **Zeng X**, Campisi J, Desprez PY. Responses of human embryonic stem cells and their differentiated progeny to ionizing radiation. Biochem Biophys Res Commun. 2012 Sep 14;426(1):100-5. doi: 10.1016/j.bbrc.2012.08.043.
33. Momcilovic, O., Montoya-Sack, J. and and Zeng, X. Dopaminergic differentiation using pluripotent stem cells. J Cell Biochem. 2012 Jul 13. doi: 10.1002/jcb.24251.
34. Swistowski, A, and Zeng, X. Scalable Production of Transplantable Dopaminergic Neurons from hESCs and iPSCs in Xeno-Free Conditions. Curr Protoc Stem Cell Biol. 2012 Aug;Chapter 2:Unit2D.12.
35. Liu, Q, Spusta, SC, Mi, R, Lassiter, RN, Stark, MS, Höke, A, Rao, MS, and Zeng, X. Human neural crest stem cells derived from hESC and iPSC: Induction, maintenance and differentiation into functional Schwann cells. Stem Cells Transl Med. 2012 Apr;1(4):266-78.

36. Luo, L, Gopalakrishna-Pillai, S, Nay, SL, Park, S, Bates, SE, Zeng, X, Iverson, LE, O'Connor, TR.DNA Repair in Human Pluripotent Stem Cells is Distinct from that in Non-pluripotent Human Cells. PLoS One. 2012;7(3):e30541.
37. Momcilovic, O., and Zeng, X. Neural and dopaminergic differentiation of human pluripotent stem cells. Neural Development and Stem Cells, 3rd Edition. Humana Press. 2012. Chapter 14, p265-288.
38. Liu, Q, Pedersen, O, and Zeng, X. Dopaminergic neuronal differentiation of human embryonic stem cells. Human Stem Cell Manual: A Laboratory Guide, 2nd Edition. Academic Press. 2012. Chapter 25, p385-398.
39. Peng, J. and Zeng, X. The role of iPSCs in regenerative medicine: neurodegenerative diseases. Stem Cell Research & Therapy. 2011, 2:32 (28 July 2011).
40. MacArthur, C, Xue, H, Van Hoof, D, Lieu, PT, Dudas, M, Fontes, A, Swistowski, A, Touboul, T, Seerke, R, Laurent, LC, Loring, JF, German, MS, Zeng, X, Rao, MS, Lakshmipathy, U, Chesnut, JD, and Liu, Y. Chromatin Insulator Elements Block Transgene Silencing in Engineered hESC Lines at a Defined Chromosome 13 Locus. Stem Cells Dev. 2012 Jan 20;21(2):191-205.
41. Zhang, J, Rao, RV, Spilman, P, Mangada, J, Xie, L, Vitelli, C, Gorostiza, OF, Madden, DT, Zeng, X, Jin, K, Bredesen, DE, and Galvan, V. Endogenously EGFP-Labeled Mouse Embryonic Stem Cells. Aging and Disease. 2011 February, 2(1): 1-17.
42. Birket, BJ, Orr, AL, Gerencser, AA, Madden, D, Vitelli, C, Swistowski, A, Brand, MD, and Zeng, X. A reduction in ATP demand and mitochondrial activity with neural differentiation of human embryonic stem cells. J Cell Sci. 2011 Feb 1;124(Pt 3):348-58.
43. Swistowski, A, Peng, J, Liu, Q, Mali, P, Rao, MS, Cheng, L, and Zeng, X. Efficient generation of functional dopaminergic neurons from human induced pluripotent stem cells under defined conditions. Stem Cells. 2010 Oct;28(10):1893-904.
44. Swistowska, AM, da Cruz, AB, Han, Y, Swistowski, A, Liu, Y, Shin, S, Zhan, M, Rao, MS, and Zeng, X. Stage-specific role for Shh in dopaminergic differentiation of human embryonic stem cells induced by stromal cells. Stem Cells Dev. 2010 Jan;19(1):71-82.
45. Han, Y, Miller, A, Mangada, J, Liu, Y, Swistowski, A, Zhan, M, Rao, MS, and Zeng, X. Identification by automated screening of a small molecule that selectively eliminates neural stem cells derived from hESCs and not dopaminergic neurons. PLoS One. 2009 Sep 23;4(9):e7155.
46. Swistowski, A., Peng, J, Han, Y, Swistowska, AM, Rao, MS, and Zeng, X. Xeno-free Defined Conditions for Culture of Human Embryonic Stem Cells, Neural Stem Cells and Dopaminergic Neurons Derived From Them. PLoS One. 2009 Jul 14;4(7):e6233.
47. Roskum, J, Swistowski, A, Zeng, X, and Lim, DA. Future Directions: Use of intraoperative MRI for cell based therapy of Parkinson's disease. Neurosurg Clin N Am. 2009 Apr;20(2):211-8.
48. Xue, H, Wu, S, Papadeas, S, Spusta, S, Swistowska, A, MacArthur, C, Mattson, MP, Maragakis, NJ, Capecchi, M, Rao, MS, Zeng, X and Liu, Y. A targeted neuroglial reporter line generated by homologous recombination in human embryonic stem cells. 2009. Stem Cells. 2009 Aug;27(8):1836-46.
49. Maynard S, Swistowska AM, Lee JW, Liu Y, Liu ST, DA Cruz A, Rao M, de Souza-Pinto N, **Zeng X**, Bohr VA. Human Embryonic Stem Cells have Enhanced Repair of Multiple Forms of DNA Damage. Stem Cells. 2008 Sep;26(9):2266-74.

50. Zeng, X., and Rao, MS. Controlled genetic modification of stem cells for developing drug discovery tools and novel therapeutic applications. Curr Opin Mol Ther. 2008 Jun;10(3):207-13.
51. Freed, WJ, Chen, J, Bäckman, C, Schwartz, CM, Vazin, T, Cai, J, Spivak, CE, Lupica, C, Rao, MS, and Zeng, X. Gene Expression Profile of Neuronal Progenitor Cells Derived from hESC: Activation of Chromosome 11p15.5 and Comparison to Human Dopaminergic Neurons. PLoS ONE. 2008 Jan 9;3(1):e1422.
52. Schulz, TC, Swistowska, AM, Liu, Y, Swistowski, A, Palmarini, G, Brimble, S, Sherrer, E, Robins, AJ, Rao, MS, and Zeng, X. A Large-scale Proteomic Analysis of Human Embryonic Stem Cells. BMC Genomics. 2007 Dec 27;8:478.
53. Zeng, X. Human embryonic stem cells: Mechanisms to escape replicative senescence? Stem Cell Rev. 2007 Dec;3(4):270-9.
54. Khanna, A., Swistowska, A., Rao, MS, Zeng, X. Generation and transplantation of dopaminergic neurons derived from embryonic stem cells. 2007. Current Stem Cell Research & Therapy. 2007,2, 139-147.
55. Zeng, X., and Rao, MS. Human embryonic stem cells: Long term stability, absence of senescence and potential cell sources for neural replacement. Neuroscience. 2007 Apr 14;145(4):1348-58.
56. Freed, WJ., Sanchez, JF., Lee, CT., Vazin T., Amable, R., Schoen, C., Rao, M., and Zeng, X. Human Embryonic Stem Cells, Dopaminergic Neurons, and Pathways for Developing a Parkinson's Disease Therapy. Chapter 30 in "Cellular Transplants: From Lab to Clinic". 2007; 523-544.
57. Zeng, X., Chen, J., Deng, X., Liu, Y., Rao, MS., Cadet, JL., and Freed, WJ. An in vitro model of human dopaminergic neurons derived from embryonic stem cells: MPP+ toxicity and GDNF neuroprotection. Neuropsychopharmacology. 2006 Dec;31(12):2708-2715.
58. Zeng, X., and Rao, MS. 2006. The therapeutic potential of embryonic stem cells: Stem cell stability. Curr Opin Mol Ther. 2006 Aug;8(4):338-44.
59. Josephson R, Sykes G, Liu Y, Ording C, Xu W, **Zeng X**, Shin S, Loring J, Maitra A, Rao MS, Auerbach JM. A molecular scheme for improved characterization of human embryonic stem cell lines. BMC Biol. 2006 Aug 18;4:28.
60. Carpenter, M., Rao, MS., Freed, WJ, and Zeng, X. Derivation and characterization of neuronal precursors and dopaminergic neurons from hESCs in vitro. Methods Mol Biol. 2006;331:153-67.
61. Liu, Y., Shin, S., Zeng, X., Zhan, M., Sanchez, R., Schwartz, CM, Xue, H., Loring, JF, Barker, DL, Mattson, MP, Rao, MS. 2005. Genome wide profiling of hESC, EC and their progenies using bead arrays to develop a base profile of gene expression of pre-August 9th human ES cell lines. BMC Dev Biol. 2006 May 3;6:20.
62. Sanchez, J., Crooks, D., Lee, CT., Schoen, C., Amable, R., Zeng, X., Florival-Victor, T., Morales, N., Truckenmiller, ME., Smith, D., and Freed, WJ. GABAergic lineage differentiation of AF5 neural progenitor cells in vitro. Cell Tissue Res. 2006 Apr;324(1):1-8.
63. Luo Y, Schwartz C, Shin S, **Zeng X**, Chen N, Wang Y, Yu X, Rao MS. A focused microarray to assess dopaminergic and glial cell differentiation from fetal tissue or embryonic stem cells. Stem Cells. 2006 Apr;24(4):865-75.
64. Plaia, TW., Josephson, R., Liu Y., Zeng, X., Ording C., Toumadje, A., Brimble, SN., Sherrer, ES., Uhl, EW., Freed, WJ., Schulz, TC., Maitra, A., Rao, MS., and Auerbach, JM. Characterization of a New NIH

Registered Variant Human Embryonic Stem Cell Line BG01V: A Tool for Human Embryonic Stem Cell Research. Stem Cells. 2006 Mar;24(3):531-46.

65. Cai, J., Chen, J., Liu, Y., Miura, T., Luo, Y., Loring, J., Freed, WJ., Rao, MS., and Zeng, X. Assessing self-renewal and differentiation in hESC lines. Stem Cells. 2006 Mar;24(3):516-30.
66. Schwartz CM, Spivak CE, Baker SC, McDaniel TK, Loring JF, Nguyen C, Chrest FJ, Wersto R, Arenas E, **Zeng X**, Freed WJ, Rao MS. NTera2: a model system to study dopaminergic differentiation of human embryonic stem cells. Stem Cells Dev. 2005 Oct;14(5):517-534.
67. Bhattacharya B, Cai J, Luo Y, Miura T, Mejido J, Brimble SN, **Zeng X**, Schulz TC, Rao MS, Puri RK. Comparison of the Gene Expression Profile of Undifferentiated Human Embryonic Stem Cell lines and Embryoid Bodies differentiated from them. BMC Dev Biol. 2005 Oct 5;5(1):22.
68. Noaksson, K., Zoric, N., Zeng, X., Rao, MS., Hyllner, J., Semb, H., Kubista, M., and Sartipy. P. Monitoring differentiation of human embryonic stem cells using real-time PCR. Stem Cells. 2005;23:1460-1467.
69. Maitra, A., Arking, DE., Shivapurkar, N., Ikeda, M., Stastny, V., Kassauei, K., Sui, G., Cutler, DJ., Liu, Y., Brimble, SN., Noaksson, K., Hyllner, J., Schulz, TC., Zeng, X., Freed, WJ., Colman, A., Satripy, P., Carpenter, M., Gazdar, AF., Rao, M, and Chakravarti A. Genomic alternations in cultured human embryonic stem cells. Nat Genet. 2005 Oct;37(10):1099-1103.
70. Yang, AX., Mejido, J., Luo, Y., Zeng, X., Schwartz, C., Wu, T., Thies, S., Bhattacharya, B., Han, J., Freed, B., Rao, MS., and Puri, RK. Development of a focused microarray to assess human embryonic stem cell differentiation. Stem Cells Dev. 2005 Jun;14(3):270-84.
71. Zeng, X., Chen, J, Liu, Y., Luo Y., Schulz, T., Robins, AJ., Rao, MS., and Freed, WJ. 2004. BG01V: A variant hESC line which exhibits rapid growth after passaging and reliable dopaminergic differentiation. Restor Neurol Neurosci. 2004;22(6):421-8.
72. Brimble, S*, Zeng, X* (*Equal contribution), Weiler, DA., Luo, Y., Liu, Y., Lyons, IG., Freed, WJ., Rao, MS., Robins, AJ., and Schulz, TC. 2004. Karyotypic stability, genotyping, differentiation, feeder free maintenance and gene expression sampling in three human embryonic stem cell lines derived prior to August 9th 2001. Stem Cells and Development. Dec 2004, Vol. 13, No. 6: 585-597.
73. Zeng, X., Cai, J., Chen, J., Luo, Y., You, Z., Fotter, E., Wang, Y., Harvey, B., Miura, T., Backman, C., Chen, G., Rao, MS., and Freed, WJ. 2004. Dopaminergic Differentiation of Human Embryonic Stem Cells. Stem Cells. Stem Cells 2004; 22: 925-940.
74. Zeng, X., Miura, T., Luo, Y., Bhattacharya, B., Condie, B., Chen, J., Ginis, I., Lyons, I., Mejido, J., Puri, RK., Rao, MS., and Freed, WJ. Properties of Pluripotent Human Embryonic Stem Cells BG01 and BG02. Stem Cells. 2004;22(3):292-312.
75. Zeng, X., Negrete, G., Kasmer, C., and Gearhart. PJ. Absence of DNA polymerase η reveals targeting of C mutations on the non-transcribed strand in Immunoglobulin switch regions. J Exp Med. 2004 Apr 5;199(7):917-24.
76. Zeng, X., Chen, J., Sanchez, J.F., Coggiano, M., Dillon-Carter, O., Petersen, J., and Freed, W.J. Stable Expression of hrGFP by Mouse Embryonic Stem Cells: Promoter Activity in the Undifferentiated State and during Dopaminergic Neural Differentiation. Stem Cells. 2003;21(6):647-53.
77. Winter, D.B., Phung, Q.H., Zeng, X., Seeberg, E., Barnes, D.E., Lindahl, T., and Gearhart, P.J. Normal Somatic Hypermutation of Ig Genes in the Absence of 8-Hydroxyguanine-DNA Glycosylase. J Immunol. 2003 Jun 1;170(11):5558-62.

78. Tuo, J., Chen, C., Zeng, X., Christiansen M., and Bohr, V.A. Functional crosstalk between hOGG1 and the helicase domain of Cockayne syndrome group B protein. DNA Repair (Amst). 2002 Nov 3;1(11):913-27.
79. von Kobbe, C., Karmaker, P., Dawut, L., Opresko, P., Zeng, X., Brosh R.M., Hickson, J.D., and Bohr, V.A. Colocalization, physical and functional interaction between Werner and Bloom syndrome proteins. J Biol Chem. 2002 Jun 14;277(24):22035-44.
80. Zeng, X., Winter, D., Kasmer, C., Kraemer, K., Lehmann, A., and Gearhart. P. J. DNA polymerase η is an A-T mutator in somatic hypermutation of immunoglobulin variable genes. Nature Immunology. 2001 Jun;2(6):537-41.
81. Frank, EG., Tissier, A., McDonald, JP., Rapic-Otrin, V., Zeng, X., Gearhart, PJ., and Woodgate, R. Altered nucleotide misinsertion fidelity associated with polι-dependent replication at the end of a DNA template. EMBO J. 2001 Jun 1;20(11):2914-22.
82. Zeng, X., Galinier, A., and Saxild, H.H. Characterization of catabolite repression of the dra-nupC-pdp operon expression in Bacillus subtilis. Microbiology. 2000 Nov;146 (Pt 11):2901-8.
83. Zeng, X., Saxild, HH., and Switzer, R.L. Purification and characterization of the DeoR repressor of Bacillus subtilis. J Bacteriol. 2000 Apr;182(7):1916-22.
84. Zeng, X., and Saxild, HH. Identification and characterization of a DeoR-specific operator sequence essential for induction of dra-nupC-pdp operon expression in Bacillus subtilis. J Bacteriol. 1999 Mar;181(6):1719-27.