

Yosif Martin Ganat PhD

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Education

WEILL CORNELL GRADUATE SCHOOL - New York, NY 2004-2010
Ph.D. Neuroscience
Urs Rutishauser and Lorenz Studer labs

YALE GRADUATE SCHOOL - New Haven, CT 2002-2004
Post-bachelorette research education program ([PREP](#))
Flora Vaccarino Lab

CORNELL UNIVERSITY - Ithaca, NY 1995-1999
Activities: President of WSH Chess Club
Bachelors Degree– Independent Major/Pre-Med

Training, Awards & Outreach

[POSTDOCTORAL RESEARCHER](#) Sept 2010-present
Lorenz Studer Lab
Developmental Biology, MSKCC – New York, NY

[THE STEM CELL PODCAST](#) Oct 2013-present
Official podcast of the International Society for Stem Cell Research (ISSCR)
Producer/Co-host

BEST POSTER AWARD April 2010
Neurostemcell Consortium - Bellagio, Italy

[KEYNOTE SPEAKER](#) May 2013
Team Fox for Parkinson's Research – San Francisco, CA

[KEYNOTE SPEAKER](#) May 2012
St. Luke's Scholars Program – New Canaan, CT

[RAPID RESPONSE INNOVATION AWARD](#) March 2014-present
Michael J. Fox Foundation

Publications

Optogenetics enables functional analysis of human embryonic stem cell-derived grafts in a Parkinson's disease model.
Steinbeck JA, Choi SJ, Mrejeru A, **Ganat Y**, Deisseroth K, Sulzer D, Mosharov EV, Studer L.
Nat Biotechnol. 2015 Feb;33(2):204-9. doi: 10.1038/nbt.3124. Epub 2015 Jan 12.

A cell engineering strategy to enhance the safety of stem cell therapies.
Oricchio E, Papapetrou EP, Lafaille F, **Ganat YM**, Kriks S, Ortega-Molina A, Mark WH,

Teruya-Feldstein J, Huse JT, Reuter V, Sadelain M, Studer L, Wendel HG.
Cell Rep. 2014 Sep 25;8(6):1677-85. doi: 10.1016/j.celrep.2014.08.039. Epub 2014 Sep 18.

Human iPSC-based modeling of late-onset disease via progerin-induced aging.
Miller JD, **Ganat YM**, Kishinevsky S, Bowman RL, Liu B, Tu EY, Mandal PK,
Vera E, Shim JW, Kriks S, Taldone T, Fusaki N, Tomishima MJ, Krainc D, Milner TA, Rossi
DJ, Studer L.
Cell Stem Cell. 2013 Dec 5;13(6):691-705. doi: 10.1016/j.stem.2013.11.006.

Enhancement of polysialic acid expression improves function of embryonic stem-derived
dopamine neuron grafts in parkinsonian mice.
Battista D, **Ganat Y**, El Maarouf A, Studer L, Rutishauser U.
Stem Cells Transl Med. 2014 Jan;3(1):108-13. doi: 10.5966/sctm.2013-0084. Epub 2013 Dec 5.

Specification of functional cranial placode derivatives from human pluripotent stem cells.Dincer
Z, Piao J, Niu L, **Ganat Y**, Kriks S, Zimmer B, Shi SH, Tabar V, Studer L.
Cell Rep. 2013 Dec 12;5(5):1387-402. doi: 10.1016/j.celrep.2013.10.048. Epub 2013 Nov 27.

Directed differentiation and functional maturation of cortical interneurons from human
embryonic stem cells.
Maroof AM, Keros S, Tyson JA, Ying SW, **Ganat YM**, Merkle FT, Liu B, Goulburn A, Stanley
EG, Elefanty AG, Widmer HR, Eggan K, Goldstein PA, Anderson SA, Studer L.
Cell Stem Cell. 2013 May 2;12(5):559-72. doi: 10.1016/j.stem.2013.04.008.

Identification of embryonic stem cell–derived midbrain dopaminergic neurons for engraftment.
Ganat YM, Kriks S, Calder E, Tu Y, Jia F, Harrison N, Tomishima MJ, Rutishauser U and
Studer L.
J Clin Invest. 2012 Aug 1;122(8):2928-39. doi: 10.1172/JCI58767. Epub 2012 Jul 2.

Dopamine neurons derived from human ES cells efficiently engraft in animal models of
Parkinson's disease.
Kriks S, Shim JW, Piao J, **Ganat YM**, Wakeman DR, Xie Z, Carrillo-Reid L, Auyeung G,
Antonacci C, Buch A, Yang L, Beal MF, Surmeier DJ, Kordower JH, Tabar V, Studer L.
Nature. 2011 Nov 6;480(7378):547-51. doi: 10.1038/nature10648.

miR-371-3 expression predicts neural differentiation propensity in human pluripotent stem cells.
Kim H, Lee G, **Ganat Y**, Papapetrou EP, Lipchina I, Socci ND, Sadelain M, Studer L.
Cell Stem Cell. 2011 Jun 3;8(6):695-706.

Astroglial cells in the external granular layer are precursors of cerebellar granule neurons in
neonates.
Silbereis J, Heintz T, Taylor MM, **Ganat Y**, Ment LR, Bordey A, Vaccarino F.
Mol Cell Neurosci. 2010 Aug;44(4):362-73. Epub 2010 May 12.

Modelling pathogenesis and treatment of familial dysautonomia using patient-specific iPSCs.
Lee G, Papapetrou EP, Kim H, Chambers SM, Tomishima MJ, Fasano CA, **Ganat YM**, Menon

J, Shimizu F, Viale A, Tabar V, Sadelain M, Studer L.
Nature. 2009 Sep 17;461(7262):402-6. Epub 2009 Aug 19.

Precursors with glial fibrillary acidic protein promoter activity transiently generate GABA interneurons in the postnatal cerebellum.

Silbereis J, Cheng E, **Ganat YM**, Ment LR, Vaccarino FM.
Stem Cells. 2009 May;27(5):1152-63.

Fgfr1 is required for cortical regeneration and repair after perinatal hypoxia
Fagel DM, **Ganat Y**, Cheng E, Silbereis J, Ohkubo Y, Ment LR, Vaccarino FM.
J Neurosci. 2009 Jan 28;29(4):1202-11.

Astroglial cells in development, regeneration, and repair.

Vaccarino FM, Fagel DM, **Ganat Y**, Maragnoli ME, Ment LR, Ohkubo Y, Schwartz ML, Silbereis J, Smith KM.
Neuroscientist. 2007 Apr;13(2):173-85. Review.

Early postnatal astroglial cells generate multilineage precursors and neural stem cells in vivo.
Ganat YM, Silbereis J, Cave C, Ngu H, Anderson JM, Ohkubo Y, Ment LR, Vaccarino FM.
J Neurosci. 2006 Aug 16;26(33):8609-21.

Cortical neurogenesis enhanced by chronic perinatal hypoxia.

Fagel DM, **Ganat Y**, Silbereis J, Ebbitt T, Stewart W, Zhang H, Ment LR, Vaccarino FM.
Exp Neurol. 2006 May;199(1):77-91.

Chronic hypoxia up-regulates fibroblast growth factor ligands in the perinatal brain and induces fibroblast growth factor-responsive radial glial cells in the sub-ependymal zone.

Ganat Y, Soni S, Chacon M, Schwartz ML, Vaccarino FM.
Neuroscience. 2002;112(4):977-91.

Stem cells in neurodevelopment and plasticity.

Vaccarino FM, **Ganat Y**, Zhang Y, Zheng W.
Neuropsychopharmacology. 25(6):805-15, 2001 Dec.

Skills, Volunteering & Area of Interest

SKILLS

RNAseq, PCR, flow cytometry, southern/western blotting, transgenic mouse line engineering, viral production, BAC transgenesis (mouse and human), hESC and iPSC culture, stereotaxic injections, perfusion, animal colony maintenance, sectioning, confocal microscopy, gene chip analysis/bioinformatics, qRT-PCR, dorsal root ganglion extraction. Extensive experience in generating human neurons from pluripotent stem cells, FACS purification, and grafting.

VOLUNTEER WORK

Science Outreach – conducted science labs in Queens and Bronx boroughs (NYC)
Brain Awareness Week – Teaching middle school kids about the brain (Manhattan)

Science Education Outreach Program – Gel electrophoresis lab in public schools (New Haven)
Comer Kid's – human brain presentation to underrepresented minorities (Yale Medical School)

AREA OF INTEREST

Since 2006 I have been focused on generating human pluripotent stem cell-derived midbrain dopamine neurons (mDA) to treat Parkinson's disease. Currently I am using transgenic reporter lines (i.e., Nurr1::GFP, Phox2b::GFP) to FACS purify neuronal populations, perform RNAseq to identify cell surface markers, and using commercially available antibodies to purify mDA neurons for engraftment. I am also interested in the generation of clinical grade hESC/hiPSC-derived mDA neurons.

Recommendations

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