

July 20, 2021

NutriStem® hPSC XF Medium

Scientific References

- Growing Methods of hESC and iPSC (Derivation, Expansion, Scaling up, and Suspensions)
- Differentiation of Pluripotent Stem Cells
- Cardiomyocyte differentiation
- Clinical Applications- Derivation and Expansion of hESC and iPSC
- Organoids
- Induction of Pluripotency of hESC and iPSC
- Rare Diseases
- Patents
- Gene Editing
- Different Basement Matrices
- Proteins and Antibodies Expression and Isolation
- Cancer Stem Cells and other cell types
- Animal Models
- Drug Screening

Growing Methods of hESC and iPSC

(Derivation, Expansion, Scaling up, and Suspensions)

1. O.Thompson, et al. **Low rates of mutation in clinical grade human pluripotent stem cells under different culture conditions.** Nat Commun 11, 1528 (2020). <https://doi.org/10.1038/s41467-020-15271-3>
2. J. Lee, et al. **Induced pluripotency and spontaneous reversal of cellular aging in supercentenarian donor cells.** Biochemical and Biophysical Research Communications 27 February 2020, <https://doi.org/10.1016/j.bbrc.2020.02.092>
3. A. Kuwahara, et al. **Preconditioning the Initial State of Feeder-free Human Pluripotent Stem Cells Promotes Self-formation of Three-dimensional Retinal Tissue.** Scientific Reports volume 9, Article number: 18936 (2019)
4. A. Keller, et al. **Uncovering low-level mosaicism in human embryonic stem cells using high throughput single cell shallow sequencing.** Scientific Reports, (2019) 9:14844 | <https://doi.org/10.1038/s41598-019-51314-6>
5. I. Uçkay, et al. **Regenerative Secretoma of Adipose-Derived Stem Cells from Ischemic Patients.** Journal of Stem Cell Research & Therapy July 02, 2019 Volume 9 Issue 5
6. I. Klimanskaya, **Embryonic Stem Cells: Derivation, Properties, and Challenges.** Principles of Regenerative Medicine (Third Edition) 2019, chapter 7, pages 113-123
7. K. Yoda, et al. **Optimization of the treatment conditions with glycogen synthase kinase-3 inhibitor towards enhancing the proliferation of human induced pluripotent stem cells while maintaining an undifferentiated state under feeder-free conditions.** Journal of Bioscience and Bioengineering, October 2018
8. X. Gao, et al. **A Rapid and Highly Efficient Method for the Isolation, Purification, and Passaging of Human-Induced Pluripotent Stem Cells.** Cellular Reprogramming, Vol. 20, No. 5, 2018
9. T. Teramura, et al. **Laser-assisted cell removing (LACR) technology contributes to the purification process of the undifferentiated cell fraction during pluripotent stem cell culture.** Biochemical and Biophysical Research Communications, volume 503, Issue 4, 18 September 2018, pages 3114-3120
10. YY. Lipsitz, et. al. **Chemically controlled aggregation of pluripotent stem cells.** Biotechnology and Bioengineering, 2018; 1-6
11. H. Albalushi, et al. **Laminin 521 Stabilizes the Pluripotency Expression Pattern of Human Embryonic Stem Cells Initially Derived on Feeder Cells.** Stem Cells International, Volume 2018
12. O.M. Russell, et al. **Preferential amplification of a human mitochondrial DNA deletion in vitro and in vivo.** Scientific Reports, volume 8, Article number: 1799 (2018)
13. Maroof M Adil, David V Schaffer. **Expansion of human pluripotent stem cells.** Current Opinion in Chemical Engineering 2017, 15:24-35
14. H. Tateno, et al. **Development of a practical sandwich assay to detect human pluripotent stem cells using cell culture media.** Regenerative Therapy, Volume 6, June 2017, Pages 1-8
15. D. Baker, et al. **Detecting Genetic Mosaicism in Cultures of Human Pluripotent Stem Cells.** Stem Cell Reports, 2016
16. A. Vega-Crespo, et al. **Investigating the functionality of an OCT4-short response element in human induced pluripotent stem cells.** Molecular Therapy – Methods & Clinical Development 3, Article number: 16050 (2016)
17. YY. Lipsitz, P.W. Zandstra, **Human pluripotent stem cell process parameter optimization in a small scale suspension bioreactor.** BMC Proceedings, 9(Suppl 9), O10, 2015
18. S. Gregory, et al. **Autophagic response to cell culture stress in pluripotent stem cells.** Biochemical and Biophysical Research Communications, doi:10.1016/j.bbrc.2015.09.080, 2015
19. N. Desai, P Rambhia and A. Gishto, **Human embryonic stem cell cultivation: historical perspective and evolution of xeno-free culture systems.** Reproductive Biology and Endocrinology 13.1 (2015): 9.
20. T. Yokobori, et al. **Intestinal epithelial culture under an air-liquid interface: a tool for studying human and mouse esophagi.** Diseases of the Esophagus, doi: 10.1111/dote.12346. 2015
21. L. Healy, L Ruban, **Derivation of Induced Pluripotent Stem Cells.** Atlas of Human Pluripotent Stem Cells in Culture, pp 149-165. Springer US 2015
22. W. Siqin, et al. **Spider silk for xeno-free long-term self-renewal and differentiation of human pluripotent stem cells.** Biomaterials 35.30 (2014): 8496-8502.
23. G. Finesilver, M. Kahana, E. Mitrani, **Kidney-Specific Micro-Scaffolds and Kidney Derived Serum FreeConditioned Media support in vitro Expansion, Differentiation, and Organization of Human Embryonic Stem Cells.** Tissue Engineering Part C: Methods. -Not available-, ahead of print. doi:10.1089/ten.TEC.2013.0574.

24. M. Amit, J. Itskovitz-Eldor. **Atlas of Human Pluripotent Stem Cells: Derivation and Culturing**. Stem Cell Biology and Regenerative Medicine, 2012
25. R. Bergström, **Xeno-free culture of human pluripotent stem cells**. Methods Mol Biol. 2011;767:125-36
26. J. Collins, et al. **Highly Efficient Reprogramming to Pluripotency and Directed Differentiation of Human Cells with Synthetic Modified mRNA**. Cell Stem Cell 7 (5): 618-630 (2010).
27. K. Jacobs, et al. **Higher-Density Culture in Human Embryonic Stem Cells Results in DNA Damage and Genome Instability**. Stem Cell Reports: 6(3), pp 330-341, 2016

Differentiation of Pluripotent Stem Cells

1. C. Markouli, et al. **Sustained intrinsic WNT and BMP4 activation impairs hESC differentiation to definitive endoderm and drives the cells towards extra-embryonic mesoderm**. Sci Rep 11, 8242 (2021). <https://doi.org/10.1038/s41598-021-87547-7>
2. Å. P. Reyes, **Developmental Insights and Biomedical Potential of Human Embryonic Stem Cells : Modelling Trophoblast Differentiation and Establishing Novel Cell Therapies for Age-related Macular Degeneration**. Karolinska Institutet (Sweden), ProQuest Dissertations Publishing, 2020. 28420975.
3. R. Schick, et al. **Electrophysiologic Characterization of Developing Human Embryonic Stem Cell-Derived Photoreceptor Precursors**. Investigative Ophthalmology & Visual Science September 2020, Vol.61, 44. doi:<https://doi.org/10.1167/iovs.61.11.44>
4. P. Sunderland, et al. **ATM-deficient neural precursors develop senescence phenotype with disturbances in autophagy**. Mechanisms of Ageing and Development. 1 July 2020, <https://doi.org/10.1016/j.mad.2020.111296>
5. S. P. Sanchez, **SCALABLE, SAFE AND GMP-COMPATIBLE PRODUCTION OF EMBRYONIC STEM CELL DERIVED RETINAL PIGMENT EPITHELIAL CELLS**. Karolinska Institutet, Stockholm, Sweden, March 27th, 2020
6. L. Tolosa, et al. **Transplantation of hESC-derived hepatocytes protects mice from liver injury**. Stem Cell Research and Therapy, BioMed Central, 2015, 6 (1), pp.246. [ff10.1186/s13287-015-0227-6](https://doi.org/10.1186/s13287-015-0227-6). [ffinserm-01254139f](https://doi.org/10.1186/s13287-015-0227-6)
7. A. Shoval, et al. **Anti-VEGF-Aptamer Modified C-Dots: A Hybrid Nanocomposite for Topical Treatment of Ocular Vascular Disorders**. Wiley Online Library, 12 August 2019 <https://doi.org/10.1002/smll.201902776>
8. Y. Chemla, et al. **Gold nanoparticles for multimodal high-resolution imaging of transplanted cells for retinal replacement therapy**. NANOMEDICINE, VOL. 14, NO. 14, 24 Jul 2019, <https://doi.org/10.2217/nnm-2018-0299>
9. P. Ni, et al. **iPSC-derived homogeneous populations of developing schizophrenia cortical interneurons have compromised mitochondrial function**. Molecular Psychiatry, 31 July 2019
10. L. P. Liu, et al. **Therapeutic Potential of Patient iPSC-Derived iMelanocytes in Autologous Transplantation**. Volume 27, Issue 2, Cell Reports, 9 April 2019, Pages 455-466.e5
11. C. M. Sellgren, et al. **Increased synapse elimination by microglia in schizophrenia patient-derived models of synaptic pruning**. Nature Neuroscience volume 22, pages 374-385 (2019)
12. S. Su, et al. **A Renewable Source of Human Beige Adipocytes for Development of Therapies to Treat Metabolic Syndrome**. Cell Reports, Volume 25, Issue 11, Pages 2935-3230, 2018
13. SL Ji and SB Tang, **Differentiation of retinal ganglion cells from induced pluripotent stem cells: a review**. Int J Ophthalmol. 2019; 12(1): 152-160.
14. A. Markus, et al. **An optimized protocol for generating labeled and transplantable photoreceptor precursors from human embryonic stem cells**. Experimental Eye Research, volume 180, March 2019, pages 29-38
15. Z. Shao, et al. **Dysregulated protocadherin-pathway activity as an intrinsic defect in induced pluripotent stem cell-derived cortical interneurons from subjects with schizophrenia**. Nature Neuroscience volume 22, pages 229-242 (2019)
16. M. Tewary, **Engineered In vitro models of post-implantation human development to elucidate mechanisms of self-organized fate specification during embryogenesis**. A thesis submitted, Institute of Biomaterials and Biomedical Engineering, University of Toronto, 2018
17. D.L. McPhie, et al. **Oligodendrocyte differentiation of induced pluripotent stem cells derived from subjects with schizophrenia implicates abnormalities in development**. Translational Psychiatry volume 8, Article number: 230 (2018)
18. J. Ameri, et al. **Efficient Generation of Glucose-Responsive Beta Cells from Isolated GP2+ Human Pancreatic Progenitors**. Cell Reports, Volume 19

19. R. De santis, et al. **Direct conversion of human pluripotent stem cells into cranial motor neurons using a piggyBac vector.** *Stem Cell Research* 29 (2018) 189–196
20. K.M. Gray, et al. **Self-oligomerization regulates stability of Survival Motor Neuron (SMN) protein isoforms by sequestering an SCFS^{lmb} degron.** *Molecular Biology of the Cell*, 2017 mbc.E17-11-0627
21. E. Welby, et al. **Isolation and Comparative Transcriptome Analysis of Human Fetal and iPSC-Derived Cone Photoreceptor Cells.** *Stem Cell Reports* (2017), <https://doi.org/10.1016/j.stemcr.2017.10.018>
22. R. De-Santis, et. al. **FUS Mutant Human Motoneurons Display Altered Transcriptome and microRNA Pathways with Implications for ALS Pathogenesis.** *Stem Cell Reports* (2017), <https://doi.org/10.1016/j.stemcr.2017.09.004>
23. R.A. Hazim, et al. **Differentiation of RPE cells from integration-free iPSC cells and their cell biological characterization.** *Stem Cell Research & Therapy* 2017
24. S. Petrus-Reurer, et al. **Integration of Subretinal Suspension Transplants of Human Embryonic Stem Cell-Derived Retinal Pigment Epithelial Cells in a Large-Eyed Model of Geographic Atrophy.** *Retinal Cell Biology*, February 2017
25. X. Yuan, et al. **A hypomorphic PIGA gene mutation causes severe defects in neuron development and susceptibility to complement-mediated toxicity in a human iPSC model.** *PLOS ONE*, 2017
26. Lenzi J., et al. **Differentiation of control and ALS mutant human iPSCs into functional skeletal muscle cells, a tool for the study of neuromuscular diseases.** *Stem Cell Research: Volume 17, Issue 1, Pages 140–147*, 2016.
27. K. Alessandri, et. al. **A 3D printed microfluidic device for production of functionalized hydrogel microcapsules for culture and differentiation of human Neuronal Stem Cells (hNSC).** *Lab on a Chip*: 16(9), 2016
28. D. Voulgaris, **Evaluation of Small Molecules for Neuroectoderm differentiation & patterning using Factorial Experimental Design.** Master Thesis in Applied Physics, Department of Physics, Division of Biological Physics, Chalmers University of Technology, Göteborg, Sweden 2016
29. P. Bergström, et al. **Amyloid precursor protein expression and processing are differentially regulated during cortical neuron differentiation.** *Scientific Reports*, 2016
30. V. Tieng, et al. **Elimination of proliferating cells from CNS grafts using a Ki67 promoter-driven thymidine kinase.** *Molecular Therapy - Methods & Clinical Development* 6, Article number: 16069, 2016
31. U. Brykczynska, et al. **CGG Repeat-Induced FMR1 Silencing Depends on the Expansion Size in Human iPSCs and Neurons Carrying Unmethylated Full Mutations.** *Stem Cell Reports*, 2016
32. C.M. Sellgren, et al. **Patient-specific models of microglia-mediated engulfment of synapses and neural progenitors.** *Molecular Psychiatry*, 2016
33. E. Cosset, et al. **Human tissue engineering allows the identification of active miRNA regulators of glioblastoma aggressiveness.** *Biomaterials*, 2016
34. M. Di Salvio, et al. **Pur-alpha functionally interacts with FUS carrying ALS-associated mutations.** *Cell Death & Disease*, 2015
35. A. Reyes, et al. **Xeno-Free and Defined Human Embryonic Stem Cell-Derived Retinal Pigment Epithelial Cells Functionally Integrate in a Large-Eyed Preclinical Model Plaza.** *Stem Cell Reports: Volume 6, Issue 1, p9–17*, 2015
36. A. J. Schwab, A.D. Ebert, **Sensory Neurons Do Not Induce Motor Neuron Loss in a Human Stem Cell Model of Spinal Muscular Atrophy.** *PLoS One*. 2014; 9(7): e103112
37. H.X. Nguyen, et al. **Induction of early neural precursors and derivation of tripotent neural stem cells from human pluripotent stem cells under xeno-free conditions.** *Journal of Comparative Neurology: Volume 522, Issue 12, pp 2767–2783*, 2014
38. A. Kurtz, A. Bosio, and S. Knoebel. **Highly efficient differentiation of hPSC into hepatocyte-like cells by selection of CXCR4 (CD184) definitive endoderm (DE) cells**

Cardiomyocyte differentiation

1. A. C.Y. Chang, et al. **Increased tissue stiffness triggers contractile dysfunction and telomere shortening in dystrophic cardiomyocytes.** *Stem Cell Reports*, 2021, <https://doi.org/10.1016/j.stemcr.2021.04.018>.
2. I. Gal, et al. **Injectable Cardiac Cell Microdroplets for Tissue Regeneration.** *small*, 31 January 2020 <https://doi.org/10.1002/smll.201904806>
3. N. Adadi, et al. **Electrospun Fibrous PVDF-TrFe Scaffolds for Cardiac Tissue Engineering, Differentiation, and Maturation.** *Advanced Materials Technologies*, 22 January 2020, <https://doi.org/10.1002/admt.201900820>
4. E. Elovic, et al. **MiR-499 Responsive Lethal Construct for Removal of Human Embryonic Stem Cells after Cardiac Differentiation.** *Scientific Reports* volume 9, Article number: 14490 (2019)
5. K. Yoda, et al. **Optimized conditions for the supplementation of human-induced pluripotent stem cell cultures with a GSK-3 inhibitor during embryoid body formation with the aim of inducing differentiation into mesodermal and cardiac lineage.** *Journal of Bioscience and Bioengineering*, 12 October 2019, <https://doi.org/10.1016/j.jbiosc.2019.09.015>
6. N. Noor, et al. **3D Printing of Personalized Thick and Perfusable Cardiac Patches and Hearts.** *Adv. Sci.* 2019, 6, 1900344
7. D. Hayoun-Neeman, et al. **Exploring peptide-functionalized alginate scaffolds for engineering cardiac tissue from human embryonic stem cell-derived cardiomyocytes in serum-free medium.** *Polymers for Advanced Technologies*, 12 April 2019 <https://doi.org/10.1002/pat.4602>
8. L. Yap, et al. **In Vivo Generation of Post-infarct Human Cardiac Muscle by Laminin-Promoted Cardiovascular Progenitors.** *Cell Reports*, Volume 26, Issue 12, 19 March 2019, Pages 3231-3245.e9
9. A.C.Y. Chang, et al. **Telomere shortening is a hallmark of genetic cardiomyopathies.** *PNAS* September 11, 2018
10. S. Rajasingh, et al. **Manipulation-free cultures of human iPSC-derived cardiomyocytes offer a novel screening method for cardiotoxicity.** *Acta Pharmacologica Sinica*, 2018
11. R. Ophir, et al. **Inflammation And Contractility Are Altered By Obstructive Sleep Apnea Children's Serum, In Human Embryonic Stem Cell Derived Cardiomyocytes.** *American Journal of Respiratory and Critical Care Medicine* 2017
12. J. Kristensson, **Optimization of Growth Conditions for Expansion of Cardiac Stem Cells Resident in the Adult Human Heart.** Master's thesis in Biotechnology, Department of Physics, Division of Biological Physics, Chalmers University of Technology, Gothenburg, Sweden 2016
13. S. Rajasingh, et al. **Generation of Functional Cardiomyocytes from Efficiently Generated Human iPSCs and a Novel Method of Measuring Contractility.** *PloS one* 10.8, 2015: e0134093
14. V. Bellamy, et al. **Long-term functional benefits of human embryonic stem cell-derived cardiac progenitors embedded into a fibrin scaffold.** *The Journal of Heart and Lung Transplantation*, 2014, in press
15. E. Di Pasquale, et al. **Generation of human cardiomyocytes: a differentiation protocol for feeder-free human induced pluripotent stem cells.** *JoVE (Journal of Visualized Experiments)* 76 (2013): e50429-e50429
16. P.W. Burridge and E.T. Zambidis. **Highly efficient directed differentiation of human induced pluripotent stem cells into cardiomyocytes.** *Pluripotent Stem Cells: Methods and Protocols. Methods in Molecular Biology*, volume 997, pp 149-161, Humana Press, 2013.

Clinical Applications- Derivation and Expansion of hESC and iPSC

1. C. Laowtammathron, et al. **Derivation of human embryonic stem cell line MUSle001-A from an embryo with homozygous $\alpha 0$ -thalassemia (SEA deletion).** Stem Cell Research , 7 January 2020, <https://doi.org/10.1016/j.scr.2019.101695>
2. Q. Gu, et al. **Accreditation of Biosafe Clinical-Grade Human Embryonic Stem Cells According to Chinese Regulations.** Stem Cell Reports. 2017 Jul 11; 9(1): 366–380.
3. L. de Oñate, et al. **Research on Skeletal Muscle Diseases Using Pluripotent Stem Cells.** 2015. DOI: 10.5772/60902
4. P. Menasché, et al. **Towards a Clinical Use of Human Embryonic Stem Cell-Derived Cardiac Progenitors:A Translational Experience.** European Heart Journal: Volume 36, Issue 12, pp 743-50, 2015
5. P. Menasché, et al. **Human embryonic stem cell-derived cardiac progenitors for severe heart failure treatment: first clinical case report.** European heart journal (2015): ehv189.
6. T. Seki and K. Fukuda, **Methods of induced pluripotent stem cells for clinical application.** World Journal of Stem Cells: Volume 7, Issue 1, pp 116–125, 2015
7. Y. Luo, et al. **Stable Enhanced Green Fluorescent Protein Expression After Differentiation and Transplantation of Reporter Human Induced Pluripotent Stem Cells Generated by AAVS1 Transcription Activator-Like Effector Nucleases.** STEM CELLS Translational Medicine: Volume 3, Issue 7, pp 821-35, 2014
8. J. Durruthy-Durruthy, et al. **Rapid and Efficient Conversion of Integration-Free Human Induced Pluripotent Stem Cells to GMP-Grade Culture Conditions.** PLOS one: <http://dx.doi.org/10.1371/journal.pone.0094231>, 2014
9. H. Tatenno, et al. **A medium hyperglycosylated podocalyxin enables noninvasive and quantitative detection of tumorigenic human pluripotent stem cells.** Scientific Reports 4, Article number: 4069, 2014
10. S. Abbasalizadeh, H. Baharvand. **Technologies progress and challenges towards cGMP manufacturing of human pluripotent stem cells based therapeutic products for allogeneic and autologous cell therapies.** Biotechnology Advances: Volume 31, Issue 8, pp 1600–23, 2013.
11. J. P. Awe, et al. **Generation and characterization of transgene-free human induced pluripotent stem cells and conversion to putative clinical-grade status.** Stem Cell Research & Therapy, 2013, 4:87
12. O. Hovatta. **Infectious problems associated with transplantation of cells differentiated from pluripotent stem cells.** Seminars in Immunopathology: Volume 33, Issue 6, pp 627-30, April 2011
13. S. Ström. **Optimisation of human embryonic stem cell derivation and culture – towards clinical quality.** Karolinska Institutet, Stockholm, Sweden, 2010

Organoids

1. E. Cuevas, et al. **NRL-/- gene edited human embryonic stem cells generate rod-deficient retinal organoids enriched in S-cone-like photoreceptors.** STEM CELLS, January 2021 <https://doi.org/10.1002/stem.3325>
2. R. Simsa, et al. **Brain organoid formation on decellularized porcine brain ECM hydrogels.** PLoS ONE 16(1) (2021). <https://doi.org/10.1371/journal.pone.0245685>
3. N. Moris, et al. **An in vitro model of early anteroposterior organization during human development.** Nature 582, 410–415 (2020). <https://doi.org/10.1038/s41586-020-2383-9>
4. A. Kathuria, et al. **Comparative transcriptomic analysis of cerebral organoids and cortical neuron cultures derived from human induced pluripotent stem cells.** Stem Cells and Development. 29 Aug 2020, <http://doi.org/10.1089/scd.2020.0069>
5. N. Moris, et al. **Generating Human Gastruloids from Human Embryonic Stem Cells.** 11 June 2020, Protocol Exchange, <https://doi.org/10.21203/rs.3.pex-812/v1>
6. A. Kathuria, et al. **Transcriptome analysis and functional characterization of cerebral organoids in bipolar disorder.** Genome Med 12, 34 (2020). <https://doi.org/10.1186/s13073-020-00733-6>
7. J. Mulder, et al. **Generation of infant- and pediatric-derived urinary induced pluripotent stem cells competent to form kidney organoids.** Pediatric Research, 19 October 2019, <https://doi.org/10.1038/s41390-019-0618-y>
8. F. Salaris, et al. **3D Bioprinted Human Cortical Neural Constructs Derived from Induced Pluripotent Stem Cells.** J. Clin. Med. 2019, 8, 1595; doi:10.3390/jcm8101595
9. P. Tai, et al. **The Development and Applications of a Dual Optical Imaging System for Studying Glioma Stem Cells.** Molecular Imaging Volume: 18, September 3, 2019, <https://doi.org/10.1177/1536012119870899>
10. E. Cosset, et al. **Human Neural Organoids for Studying Brain Cancer and Neurodegenerative Diseases.** JoVE, ISSUE 148, 10.3791/59682, 6/28/2019
11. K. Maliszewska-Olejniczak, et al. **Development of extracellular matrix supported 3D culture of renal cancer cells and renal cancer stem cells.** Cytotechnology (2018). <https://doi.org/10.1007/s10616-018-0273-x>
12. D.C. Wilkinson, et al. **Development of a Three-Dimensional Bioengineering Technology to Generate Lung Tissue for Personalized Disease Modeling.** Stem cells translational medicine, 6(2), 2017
13. V. Tieng, et al. **Engineering of Midbrain Organoids Containing Long-Lived Dopaminergic Neurons.** Stem Cells and Development. February 2014, 23(13): 1535–1547.
14. K. Maliszewska-Olejniczak, et al. **Three-Dimensional Cell Culture Model Utilization in Renal Carcinoma Cancer Stem Cell Research.** In: Baratta M. (eds) Epithelial Cell Culture. Methods in Molecular Biology, vol 1817. Humana Press, New York, NY

Induction of Pluripotency of hESC and iPSC

1. H. Ben-Zvi, et al. **Generation and characterization of three human induced pluripotent stem cell lines (iPSC) from two family members with dilated cardiomyopathy and left ventricular noncompaction (DCM-LVNC) and one healthy heterozygote sibling.** Stem Cell Research, 2021, <https://doi.org/10.1016/j.scr.2021.102382>.
2. D. Falik, et al. **Generation and characterization of iPSC lines (BGUi004-A, BGUi005-A) from two identical twins with polyalanine expansion in the paired-like homeobox 2B (PHOX2B) gene.** Stem Cell Research V. 48, October 2020, <https://doi.org/10.1016/j.scr.2020.101955>
3. J. Jeriha, et al. **mRNA-Based Reprogramming Under Xeno-Free and Feeder-Free Conditions.** Methods in Molecular Biology 22 June 2020, https://doi.org/10.1007/7651_2020_302
4. C. Skorik, et al. **Xeno-Free Reprogramming of Peripheral Blood Mononuclear Erythroblasts on Laminin-521.** Curr Protoc Stem Cell Biol. 2020 Mar;52(1):e103. doi: 10.1002/cpsc.103.
5. S. Mount, et al. **Physiologic expansion of human heart-derived cells enhances therapeutic repair of injured myocardium.** Stem Cell Research & Therapy, 10, Article number: 316 (2019)
6. C. Laowtammathron, et al. **Derivation of a MUSLi012-A iPSCs from mobilized peripheral blood stem cells.** Stem Cell Research, 19 October 2019, <https://doi.org/10.1016/j.scr.2019.101597>
7. N. Kolundzic, et al. **Induced pluripotent stem cell line heterozygous for p.R501X mutation in filaggrin: KCLi003-A.** Stem Cell Research, 7 August 2019, 101527, <https://doi.org/10.1016/j.scr.2019.101527>

8. M. Nakajima, et al. **Establishment of induced pluripotent stem cells from common marmoset fibroblasts by RNA-based reprogramming.** Biochemical and Biophysical Research Communications Volume 515, Issue 4, 6 August 2019, Pages 593-599
9. F. Altieri, et al. **Production and characterization of human induced pluripotent stem cells (iPSC) CSSi007-A (4383) from Joubert Syndrome.** Stem Cell Research, Volume 38, July 2019, 101480
10. A.M.Sacco, et al. **Diversity of dermal fibroblasts as major determinant of variability in cell reprogramming.** Journal of Cellular and Molecular Medicine, 2019;23:4256- 4268.
11. T. Klein, et al. **Generation of two induced pluripotent stem cell lines from skin fibroblasts of sisters carrying a c.1094C>A variation in the SCN10A gene potentially associated with small fiber neuropathy.** Stem Cell Research, Volume 35, March 2019
12. T. Klein, et al. **Generation of the human induced pluripotent stem cell line UKWNLi002-A from dermal fibroblasts of a woman with a heterozygous c.608 C>T (p.Thr203Met) mutation in exon 3 of the nerve growth factor gene potentially associated with hereditary sensory and autonomic neuropathy type 5.** Stem Cell Research, available online 12 October 2018
13. X. Gao, et al. **Generation of nine induced pluripotent stem cell lines as an ethnic diversity panel.** Stem Cell Research, Volume 31, August 2018, Pages 193-196
14. S.T Chandrabose, et al. **Amenable epigenetic traits of dental pulp stem cells underlie high capability of xeno-free episomal reprogramming.** Stem Cell Research & Therapy, 2018 9:68
15. H. Naaman, et. al. **Measles Virus Persistent Infection of Human Induced Pluripotent Stem Cells.** Cellular Reprogramming Vol. 20, No. 1, 2018
16. X. Gao, et. al. **Comparative transcriptomic analysis of endothelial progenitor cells derived from umbilical cord blood and adult peripheral blood: Implications for the generation of induced pluripotent stem cells.** Stem Cell Research, 2017
17. M.V. Krivega, et al. **Cyclin E1 plays a key role in balancing between totipotency and differentiation in human embryonic cells.** Mol. Hum. Reprod, 2015
18. S. Eminli-Meissner, et al. **A novel four transfection protocol for deriving iPS cell lines from human blood-derived endothelial progenitor cells (EPCs) and adult human dermal fibroblasts using a cocktail of non-modified reprogramming and immune evasion mRNAs.** Scientific Poster, REPROCELL, 2015
19. M. Brouwer, et al. **Choices for Induction of Pluripotency: Recent Developments in Human Induced Pluripotent Stem Cell Reprogramming Strategies.** Stem Cell Reviews and Reports: Volume 12, Issue 1, pp 54-72, 2015
20. R. S. Song, et al. **Generation, Expansion, and Differentiation of Human Induced Pluripotent Stem Cells (hiPSCs) Derived from the Umbilical Cords of Newborns.** Current protocols in stem cell biology (2013): UNIT 1C.16.
21. L.Warren, et al. **Highly efficient reprogramming to pluripotency and directed differentiation of human cells with synthetic modified mRNA.** Cell Stem Cell 7: 618-630, 2010
22. S. Sugii, et al. **Human and mouse adipose-derived cells support feeder-independent induction of pluripotent stem cells.** PNAS February 23, 2010 vol. 107 no. 8 3558-3563

1. A. Eltahir, et al. **Establishment of three Joubert syndrome-derived induced pluripotent stem cell (iPSC) lines harbouring compound heterozygous mutations in CC2D2A gene.** Stem Cell Research, 2021, <https://doi.org/10.1016/j.scr.2021.102430>.
2. A. D'Anzi, et. al. **Generation of an induced pluripotent stem cell line (CSS012-A (7672)) carrying the p.G376D heterozygous mutation in the TARDBP protein,** Stem Cell Research, 2021, <https://doi.org/10.1016/j.scr.2021.102356>.
3. M. Alowaysi, et al. **Generation of iPSC lines (KAUSTi011-A, KAUSTi011-B) from a Saudi patient with epileptic encephalopathy carrying homozygous mutation in the GLP1R gene.** Stem Cell Research, Volume 50, 2021, <https://doi.org/10.1016/j.scr.2020.102148>.
4. T. Rabinski, et al. **Reprogramming of two induced pluripotent stem cell lines from a heterozygous GRIN2D developmental and epileptic encephalopathy (DEE) patient (BGUi011-A) and from a healthy family relative (BGUi012-A).** Stem Cell Research, Volume 51, 2021, <https://doi.org/10.1016/j.scr.2021.102178>.
5. N. Gurusamy, et al. **Noonan syndrome patient-specific induced cardiomyocyte model carrying SOS1 gene variant c.1654A>G.** Experimental Cell Research, 2021, <https://doi.org/10.1016/j.yexcr.2021.112508>.
6. K. Homma, et. al. **Taurine rescues mitochondria-related metabolic impairments in the patient-derived induced pluripotent stem cells and epithelial-mesenchymal transition in the retinal pigment epithelium.** Redox Biology, 2021, <https://doi.org/10.1016/j.redox.2021.101921>.
7. M. Alowaysi, et al. **Establishment of an iPSC cohort from three unrelated 47-XXY Klinefelter Syndrome patients (KAUSTi007-A, KAUSTi007-B, KAUSTi009-A, KAUSTi009-B, KAUSTi010-A, KAUSTi010-B).** Stem Cell Research, 10 October 2020, <https://doi.org/10.1016/j.scr.2020.102042>
8. J. Martone, et al. **Trans-generational epigenetic regulation associated with the amelioration of Duchenne Muscular Dystrophy.** EMBO Mol Med (2020) e12063 <https://doi.org/10.15252/emmm.202012063>
9. L. Gaetana, et al. **Generation of 3 clones of induced pluripotent stem cells (iPSCs) from a patient affected by Crohn's disease.** Stem Cell Research, 23 August 2019, <https://doi.org/10.1016/j.scr.2019.101548>
10. G. Piovani, et al. **Generation of induced pluripotent stem cells (iPSCs) from patient with Cri du Chat Syndrome.** Stem Cell Research, Volume 35, March 2019
11. S. Masneri, et al. **Generation of induced Pluripotent Stem cells (UNIBSi008-A, UNIBSi008-B, UNIBSi008-C) from an Ataxia-Telangiectasia (AT) patient carrying a novel homozygous deletion in ATM gene.** Stem Cell Research, 18 October 2019, 101596, <https://doi.org/10.1016/j.scr.2019.101596>
12. L. Jacquet, et al. **Three Huntington's Disease Specific Mutation-Carrying Human Embryonic Stem Cell Lines Have Stable Number of CAG Repeats upon In Vitro Differentiation into Cardiomyocytes.** PloS one 10.5, 2015
13. J. Rosati, et al. **Production and characterization of human induced pluripotent stem cells (iPSCs) from Joubert Syndrome: CSSi001-A (2850).** Stem Cell Research, Volume 27, March 2018, Pages 74–77
14. F. Altieri, et al. **Production and characterization of CSSi003 (2961) human induced pluripotent stem cells (iPSCs) carrying a novel puntiform mutation in RAI1 gene, Causative of Smith–Magenis syndrome.** Stem Cell Research Volume 28, April 2018, Pages 153–156
15. R.M. Ferraro, et al. **Generation of three iPSC lines from fibroblasts of a patient with Aicardi Goutières Syndrome mutated in TREX1.** Stem Cell Research, 14 September 2019, <https://doi.org/10.1016/j.scr.2019.101580>
16. G. Lanzi, et al. **Generation of 3 clones of induced pluripotent stem cells (iPSCs) from a patient affected by Autosomal Recessive Osteopetrosis due to mutations in TCIRG1 gene.** Stem Cell Research, 20 November 2019, 101660, <https://doi.org/10.1016/j.scr.2019.101660>
17. S. Panula, et al. **Human induced pluripotent stem cells from two azoospermic patients with Klinefelter syndrome show similar X chromosome inactivation behavior to female pluripotent stem cells.** Human Reproduction, dez134, <https://doi.org/10.1093/humrep/dez134>, 19 November 2019
18. R. Ferraro, et al. **Establishment of three iPSC lines from fibroblasts of a patient with Aicardi Goutières Syndrome mutated in RNaseH2B.** Stem Cell Research, 22 October 2019
19. S. Masneri, et al. **Generation of three isogenic induced Pluripotent Stem Cell lines (iPSCs) from fibroblasts of a patient with Aicardi Goutières Syndrome carrying a c.2471G>A dominant mutation in IFIH1 gene.** Stem Cell Research, 2019

Patents

1. N. Netzer, et al. **RETINAL PIGMENT EPITHELIUM CELL COMPOSITIONS**. US Patent App. 16/958,399, 2021
2. M.A. Poleganov, et al. **RNA REPLICON FOR REPROGRAMMING SOMATIC CELLS**. US Patent App. 16/645707, 09/03/2020
3. J.N. Thon, et al. **Compositions for Drug Delivery and Methods of Use Thereof**. US Patent App 16/730603, 05/07/2020
4. P. Devaux, et al. **VIRAL VECTORS FOR NUCLEAR REPROGRAMMING**. US Patent App 16/338295, 02/06/2020
5. B. E. Reubinoff, **PHOTORECEPTOR CELLS FOR THE TREATMENT OF RETINAL DISEASES**. US Patent App 16/484420, 01/30/2020
6. U. Sahin, **METHOD FOR CELLULAR RNA EXPRESSION**. US Patent App. 16/245353, 09/05/2019
7. A. C. Brown, **METHODS, COMPOSITIONS, AND KITS FOR PRODUCING BEIGE ADIPOCYTES AND TREATING METABOLIC DISORDERS**. US Patent App. 16/245298, 08/29/2019
8. M. fink, et al. **METHODS AND COMPOSITIONS FOR IMMUNOMODULATION**. US Patent App. 20190247440 08/15/2019
9. K. Tryggvason et al. **DIFFERENTIATION OF PLURIPOTENT STEM CELLS AND CARDIAC PROGENITOR CELLS INTO STRIATED CARDIOMYOCYTE FIBERS USING LAMININS LN-511, LN-521 AND LN-221**. US Patent App. 16/015,336, 2019
10. C. H. Kim, **METHOD FOR PRODUCING INDUCED PLURIPOTENT STEM CELLS AND INDUCED PLURIPOTENT STEM CELLS PRODUCED THEREBY**. US Patent App. 15/716,614, 2019
11. M. Amit & J. Itskovitz-Eldor, **Methods for expanding and maintaining human pluripotent stem cells (PSCs) in an undifferentiated state in a single cell suspension culture**. US Patent App. 10/214,722, 2019
12. G. M. de Peppo, **Perfusion bioreactor**. US Patent App. 14/959,950, 2019
13. K. Tryggvason et al. **Differentiation of pluripotent stem cells and cardiac progenitor cells into striated cardiomyocyte fibers using laminins Ln-511, Ln-521 and Ln-221**. US Patent App. 16/015,309, 2018
14. B.E. Reubinoff, O. Singer, **Large Scale Production of Retinal Pigment Epithelial Cells**. United States Patent Application 20180216064
15. H. Tateno et. al. **Method and kit for detecting stem cell**. US Patent Application 15548921, 2018
16. J. Bailly, et al. **Method for differentiation of pluripotent stem cells into multi-competent renal precursors**. US Patent 20,160,145,578, 2016
17. D. Keefe et al. **A Method for a Single Cell Analysis of Telomere Length**. US Patent Application 20160032360, 2016
18. M. EGLI Dietrich, **Methods for making and using modified oocytes**. US Patent Application 20140308257, 2016
19. U. Sahin, et al. **Diagnosis and therapy of cancer involving cancer stem cells**. US Patent Application 20150314018, 2015
20. C.E Buensuceso, et al. **Induced Pluripotent Stem Cells Prepared from Human Kidney-Derived Cells**. US Patent Application 20140073049, 2014
21. .M. Amit, J. Itskovitz-eldor. **Novel Methods and Culture Media for Culturing Pluripotent Stem Cells**. US Patent Application 20130236961, 2013

Gene Editing

1. C. Lorthongpanich, et al. **Generation of a WWTR1 mutation induced pluripotent stem cell line, MUSli012-A-1, using CRISPR/Cas9.** Stem Cell Research, 21 October 2019, 101634, <https://doi.org/10.1016/j.scr.2019.101634>
2. W. Supharattanasitthi, et al. **CRISPR/Cas9-mediated one step bi-allelic change of genomic DNA in iPSCs and human RPE cells in vitro with dual antibiotic selection.** Scientific Reports volume 9, Article number: 174 (2019)
3. C.L. Sweeney, et al. **Targeted Repair of CYBB in X-CGD iPSCs Requires Retention of Intronic Sequences for Expression and Functional Correction.** Molecular Therapy, 2017
4. J. Lenzi et, al. **ALS mutant FUS proteins are recruited into stress granules in induced Pluripotent Stem Cells (iPSCs) derived motoneurons.** Disease Models & Mechanisms: 8, 755-766, 2015
5. T. Cerbini, et al. **Transfection, Selection, and Colony-picking of Human Induced Pluripotent Stem Cells TALEN-targeted with a GFP Gene into the AAVS1 Safe Harbor.** JoVE (Journal of Visualized Experiments), 2015

Different Basement Matrices

1. M. Sponchioni, et al. **Probing the mechanism for hydrogel-based stasis induction in human pluripotent stem cells: is the chemical functionality of the hydrogel important?** Chem. Sci., 2020, 11, 232, DOI: 10.1039/c9sc04734d
2. N. J. W. Penfold, et al. **Emerging Trends in Polymerization-Induced Self-Assembly.** ACS Macro Lett. 2019 8 XXX1029-1054, August 7, 2019, <https://doi.org/10.1021/acsmacrolett.9b00464>
3. U. Johansson, et al. **Assembly of functionalized silk together with cells to obtain proliferative 3D cultures integrated in a network of ECM-like microfibers.** Scientific Reports, volume 9, Article number: 6291 (2019)
4. N.J.W. Penfold, et al. **Thermoreversible Block Copolymer Worm Gels Using Binary Mixtures of PEG Stabilizer Blocks.** Macromolecules, DOI: 10.1021/acs.macromol.8b02491, 2019
5. Y Qin, et al. **Laminins and cancer stem cells: partners in crime?** Seminars in Cancer Biology, 2016
6. S. Wu, et al. **Efficient passage of human pluripotent stem cells on spider silk matrices under xeno-free conditions.** Cellular and Molecular Life Sciences: 73(7):1479-88, 2015
7. O. Simonson. **Use of Genes and Cells in Regenerative Medicine.** Karolinska Institutet, 2015
8. Nacalai USA Inc. **Vitronectin-398™ (Xeno-free).** Nacalai USA website
9. S. Rodin, et al. **Monolayer culturing and cloning of human pluripotent stem cells on laminin-521-based matrices under xeno-free and chemically defined conditions.** Nature Protocols 9, 2354–2368 (2014) doi:10.1038/nprot.2014.159
10. S. Rodin et al. **Clonal culturing of human embryonic stem cells on laminin-521/E-cadherin matrix in defined and xeno-free environment.** Nat Commun. 5:3195. doi: 10.1038/ncomms4195, 2014
11. StemAdhere™ **Defined Matrix for hPSC.** Primorigen Biosciences website.
12. J.L. Weber, et al. **The Corning® Synthemax™ Surface: A Synthetic, Xeno-Free Surface for Long-Term Self-Renewal of Human Embryonic Stem Cells in Defined Media.** presented in 2010 world stem cell summit

Proteins and Antibodies Expression and Isolation

1. G. Girelli, **Methods development for the investigation of the Mammalian Genomeradial architecture: the quantiative side.** Karolinska Institutet, 2021 ISBN 978-91-8016-197-8
2. I. Henn & A. Atkins, et al. **SEM/FIB Imaging for Studying Neural Interfaces.** Developmental Neurobiology, 22 June 2019 <https://doi.org/10.1002/dneu.22707>
3. E. Gelali, et al. **iFISH is a publically available resource enabling versatile DNA FISH to study genome architecture.** Nature Communications, volume 10, 1636, (2019)
4. C.Markouli, et al. **Gain of 20q11.21 in Human Pluripotent Stem Cells Impairs TGF- β -Dependent Neuroectodermal Commitment.** Stem Cell Reports, Volume 13, Issue 1, 9 July 2019, Pages 163-176
5. A. DePalma, **Culture Media Purpose-Fit for New Therapies.** Genetic Engineering & Biotechnology News, March 2018
6. D.R. Riordon and K.R. Boheler, **Immunophenotyping of Live Human Pluripotent Stem Cells by Flow Cytometry.** In: Boheler K., Gundry R. (eds) The Surfaceome. Methods in Molecular Biology, vol 1722. Humana Press, New York, NY, 2018
7. N.Y. Thakar, et al. **TRAF2 recruitment via T61 in CD30 drives NF κ B activation and enhances hESC survival and proliferation.** Molecular Biology of the Cell: 26(5):993-1006 2015
8. Abcam, **Immunocytochemistry / Immunofluorescence abreview for Anti-Oct4 antibody - ChIP Grade.** Abcam website.

Cancer Stem Cells and other cell types

1. M. Kurek, et al. **Spermatogonia Loss Correlates with LAMA1 Expression in Human Prepubertal Testes Stored for Fertility Preservation.** Cells 2021, <https://doi.org/10.3390/cells1002024>
2. H. Yu, et al. **Notch-HEY2 signaling pathway contributes to the differentiation of CD34+ hematopoietic-like stem cells from adult peripheral blood insulin-producing cells after the treatment with platelet-derived mitochondria.** Mol Biol Rep (2020). <https://doi.org/10.1007/s11033-020-05874-w>
3. H. Yu, et al. **Generation of Multipotent Stem Cells from Adult Human Peripheral Blood Following the Treatment with Platelet-Derived Mitochondria.** Cells 29 May 2020, 9(6), 1350; <https://doi.org/10.3390/cells9061350>
4. K. K. Brodaczewska, et al. **Metastatic renal cell carcinoma cells growing in 3D on poly-D-lysine or laminin present a stem-like phenotype and drug resistance.** Oncology Reports, September 18, 2019. Volume 42 Issue 5 <https://doi.org/10.3892/or.2019.7321>

Animal Models

1. A. Doddi, et al. **Fibrous dysplasia: new approaches.** 2019.
2. M. Nowak-Imialek, et al. **In Vitro and In Vivo Interspecies Chimera Assay Using Early Pig Embryos.** Cellular Reprogramming. ahead of print, 19 May 2020, <http://doi.org/10.1089/cell.2019.0107>
3. M. Nakanishi, et al. **Human Pluripotency Is Initiated and Preserved by a Unique Subset of Founder Cells.** Cell, Volume 177, Issue 4, 2 May 2019, Pages 910-924. e22
4. W. Zhang, et al. **Distinct MicroRNA Expression Signatures of Porcine Induced Pluripotent Stem Cells under Mouse and Human ESC Culture Conditions.** PLOS ONE, 2016

Drug Screening

1. Z. Ye, et al. **Differential sensitivity to JAK inhibitory drugs by isogenic human erythroblasts and hematopoietic progenitors Stem Cells.** 2014 Jan; 32(1): 269-278. doi: 10.1002/stem.1545

Germany

Sartorius Stedim Biotech
GmbH
August-Spindler-Strasse 11
37079 Goettingen
Phone +49 551 308 0

USA

Sartorius Stedim North
America Inc.
565 Johnson Avenue
Bohemia, NY 11716
Toll-Free +1 800 368 7178