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# NutriStem® hPSC XF Medium

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# 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 Free Conditioned 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. S. Rajasingh, et al. **Comparative analysis of human induced pluripotent stem cell-derived mesenchymal stem cells and umbilical cord mesenchymal stem cells**. jcm, 2021, <https://doi.org/10.1111/jcmm.16851>
2. 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>
3. Á. 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.
4. 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>
5. 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>
6. 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
7. 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)
8. 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/sml.201902776>
9. 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>
10. P. Ni, et al. **iPSC-derived homogeneous populations of developing schizophrenia cortical interneurons have compromised mitochondrial function**. Molecular Psychiatry, 31 July 2019
11. 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
12. 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)
13. 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
14. S. L. Ji and S. B. Tang, **Differentiation of retinal ganglion cells from induced pluripotent stem cells: a review**. Int J Ophthalmol. 2019; 12(1): 152-160.
15. 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
16. 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)
17. 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

18. D.L. McPhie, et al. **Oligodendrocyte differentiation of induced pluripotent stem cells derived from subjects with schizophrenias implicate abnormalities in development.** *Translational Psychiatry* volume 8, Article number: 230 (2018)
19. J. Ameri, et al. **Efficient Generation of Glucose-Responsive Beta Cells from Isolated GP2+ Human Pancreatic Progenitors.** *Cell Reports*, Volume 19
20. 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
21. K.M. Gray, et al. **Self-oligomerization regulates stability of Survival Motor Neuron (SMN) protein isoforms by sequestering an SCFS<sup>lmb</sup> degron.** *Molecular Biology of the Cell*, 2017 mbc.E17-11-0627
22. 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>
23. 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>
24. R.A. Hazim, et al. **Differentiation of RPE cells from integration-free iPSC cells and their cell biological characterization.** *Stem Cell Research & Therapy* 2017
25. 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
26. 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
27. 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.
28. 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
29. 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
30. P. Bergström, et al. **Amyloid precursor protein expression and processing are differentially regulated during cortical neuron differentiation.** *Scientific Reports*, 2016
31. 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
32. 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
33. C.M. Sellgren, et al. **Patient-specific models of microglia-mediated engulfment of synapses and neural progenitors.** *Molecular Psychiatry*, 2016
34. E. Cosset, et al. **Human tissue engineering allows the identification of active miRNA regulators of glioblastoma aggressiveness.** *Biomaterials*, 2016
35. M. Di Salvio, et al. **Pur-alpha functionally interacts with FUS carrying ALS-associated mutations.** *Cell Death & Disease*, 2015
36. 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
37. 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

## 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 Perfusible 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 MUS1e001-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. Oliver, et al. **Self-organising human gonads generated by a Matrigel-based gradient system.** BMC Biol, (2021). <https://doi.org/10.1186/s12915-021-01149-3>
2. J. Norrie, et al. **Retinoblastoma from human stem cell-derived retinal organoids.** Nat Commun 12, 4535 (2021). <https://doi.org/10.1038/s41467-021-24781-7>
3. S. Samudiyata, et al. **SARS-CoV-2 Neurotropism and Single Cell Responses in Brain Organoids Containing Innately Developing Microglia.** Karolinska Institutet, 2021. <https://doi.org/10.21203/rs.3.rs-724318/v1>
4. 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>
5. 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>
6. 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>
7. 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>
8. 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>
9. 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>
10. 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>
11. 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
12. 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>
13. E. Cosset, et al. **Human Neural Organoids for Studying Brain Cancer and Neurodegenerative Diseases.** JoVE, ISSUE 148, 10.3791/59682, 6/28/2019
14. 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>

# Induction of Pluripotency of hESC and iPSC

1. T. Souralova, et al. **Xeno- and feeder-free derivation of two sex-discordant sibling lines of human embryonic stem cells.** *Stem Cell Research*, 2021, <https://doi.org/10.1016/j.scr.2021.102574>.
2. P. Klaihmon, et al. **Episomal vector reprogramming of human umbilical cord blood natural killer cells to an induced pluripotent stem cell line MUSli013-A.** *Stem Cell Research*, 2021, <https://doi.org/10.1016/j.scr.2021.102472>.
3. M. Tomoko, et al.  **$\alpha$ -glucosyl-rutin activates immediate early genes in human induced pluripotent stem cells.** *Stem Cell Research*, 2021, <https://doi.org/10.1016/j.scr.2021.102511>.
4. H.A. Khan **Isolation and Characterization of Stem Cells.** *Stem Cell Biology and Regenerative Medicine*, [https://doi.org/10.1007/978-3-030-78101-9\\_3](https://doi.org/10.1007/978-3-030-78101-9_3)
5. 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>.
6. 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>
7. J.Jerih, 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](https://doi.org/10.1007/7651_2020_302)
8. 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.
9. 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)
10. 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>
11. 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>
12. 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
13. 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
14. 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.
15. 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
16. 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
17. 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
18. 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
19. H. Naaman, et al. **Measles Virus Persistent Infection of Human Induced Pluripotent Stem Cells.** *Cellular Reprogramming* Vol. 20, No. 1, 2018
20. 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
21. 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 Issue 1, pp 54-72, 2015



## Rare Diseases

1. L. Dor, et al. **Induced pluripotent stem cell (iPSC) lines from two individuals carrying a homozygous (BGUi007-A) and a heterozygous (BGUi006-A) mutation in ELP1 for in vitro modeling of familial dysautonomia.** Stem Cell Research, 2021, <https://doi.org/10.1016/j.scr.2021.102495>.
2. F. Meshrkey, et al. **Quantitative analysis of mitochondrial morphologies in human induced pluripotent stem cells for Leigh syndrome.** Stem Cell Research, 2021, <https://doi.org/10.1016/j.scr.2021.102572>. 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>.
3. 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>.
4. 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>.
5. 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>.
6. 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>.
7. 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>.
8. 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>
9. 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>
10. 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>
11. 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
12. 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>
13. 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
14. 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
15. 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
16. 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>
17. 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>
18. 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
19. 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
20. 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

## 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, 10, 1029-1054, 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 quantitative 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 NFκB 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 LAMA 1 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. Brodaczevska, 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

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