## References:

- 1. Schutze C, Wedl M, Baumann B, Pircher M, Hitzenberger CK, Schmidt-Erfurth U. Progression of retinal pigment epithelial atrophy in antiangiogenic therapy of neovascular agerelated macular degeneration. Am J Ophthalmol. 2015. Epub 2015/03/15. doi: 10.1016/j.ajo.2015.02.020. PubMed PMID: 25769245.
- 2. Westenskow PD, Kurihara T, Friedlander M. Utilizing stem cell-derived RPE cells as a therapeutic intervention for age-related macular degeneration. Adv Exp Med Biol. 2014;801:323-9. Epub 2014/03/26. doi: 10.1007/978-1-4614-3209-8 41. PubMed PMID: 24664714.
- 3. Nakano T, Ando S, Takata N, Kawada M, Muguruma K, Sekiguchi K, Saito K, Yonemura S, Eiraku M, Sasai Y. Self-formation of optic cups and storable stratified neural retina from human ESCs. Cell stem cell. 2012;10(6):771-85. Epub 2012/06/19. doi: 10.1016/j.stem.2012.05.009. PubMed PMID: 22704518.
- 4. Meyer JS, Shearer RL, Capowski EE, Wright LS, Wallace KA, McMillan EL, Zhang SC, Gamm DM. Modeling early retinal development with human embryonic and induced pluripotent stem cells. Proc Natl Acad Sci U S A. 2009;106(39):16698-703. Epub 2009/08/27. doi: 10.1073/pnas.0905245106. PubMed PMID: 19706890; PMCID: 2757802.
- 5. Zhong X, Gutierrez C, Xue T, Hampton C, Vergara MN, Cao LH, Peters A, Park TS, Zambidis ET, Meyer JS, Gamm DM, Yau KW, Canto-Soler MV. Generation of three-dimensional retinal tissue with functional photoreceptors from human iPSCs. Nature communications. 2014;5:4047. Epub 2014/06/11. doi: 10.1038/ncomms5047. PubMed PMID: 24915161; PMCID: 4370190.
- 6. McUsic AC, Lamba DA, Reh TA. Guiding the morphogenesis of dissociated newborn mouse retinal cells and hES cell-derived retinal cells by soft lithography-patterned microchannel PLGA scaffolds. Biomaterials. 2012;33(5):1396-405. Epub 2011/11/26. doi: 10.1016/j.biomaterials.2011.10.083. PubMed PMID: 22115999; PMCID: 3249403.
- 7. Lamba DA, Karl MO, Ware CB, Reh TA. Efficient generation of retinal progenitor cells from human embryonic stem cells. Proc Natl Acad Sci U S A. 2006;103(34):12769-74. Epub 2006/08/16. doi: 10.1073/pnas.0601990103. PubMed PMID: 16908856; PMCID: 1568922.
- 8. Osakada F, Ikeda H, Mandai M, Wataya T, Watanabe K, Yoshimura N, Akaike A, Sasai Y, Takahashi M. Toward the generation of rod and cone photoreceptors from mouse, monkey and human embryonic stem cells. Nat Biotechnol. 2008;26(2):215-24. Epub 2008/02/05. doi: 10.1038/nbt1384. PubMed PMID: 18246062.
- 9. Lamba DA, Gust J, Reh TA. Transplantation of human embryonic stem cell-derived photoreceptors restores some visual function in Crx-deficient mice. Cell stem cell. 2009;4(1):73-9. Epub 2009/01/09. doi: 10.1016/j.stem.2008.10.015. PubMed PMID: 19128794; PMCID: 2713676.
- 10. Osakada F, Jin ZB, Hirami Y, Ikeda H, Danjyo T, Watanabe K, Sasai Y, Takahashi M. In vitro differentiation of retinal cells from human pluripotent stem cells by small-molecule induction. J Cell Sci. 2009;122(Pt 17):3169-79. Epub 2009/08/13. doi: 10.1242/jcs.050393. PubMed PMID: 19671662.
- 11. Lamba DA, McUsic A, Hirata RK, Wang PR, Russell D, Reh TA. Generation, purification and transplantation of photoreceptors derived from human induced pluripotent stem cells. PLoS One. 2010;5(1):e8763. Epub 2010/01/26. doi: 10.1371/journal.pone.0008763. PubMed PMID: 20098701; PMCID: 2808350.
- 12. Meyer JS, Howden SE, Wallace KA, Verhoeven AD, Wright LS, Capowski EE, Pinilla I, Martin JM, Tian S, Stewart R, Pattnaik B, Thomson JA, Gamm DM. Optic vesicle-like structures derived from human pluripotent stem cells facilitate a customized approach to retinal disease treatment. Stem Cells. 2011;29(8):1206-18. Epub 2011/06/17. doi: 10.1002/stem.674. PubMed PMID: 21678528.
- 13. Phillips MJ, Wallace KA, Dickerson SJ, Miller MJ, Verhoeven A, Martin JM, Wright L, Shen W, Capowski EE, Percin EF, Perez ET, Zhong X, Canto-Soler MV, Gamm DM. Blood-derived

- Human iPS Cells Generate Optic Vesicle-like Structures with the Capacity to Form Retinal Laminae and Develop Synapses. Investigative ophthalmology & visual science. 2012. Epub 2012/03/14. doi: 10.1167/iovs.11-9313. PubMed PMID: 22410558.
- 14. Eiraku M, Takata N, Ishibashi H, Kawada M, Sakakura E, Okuda S, Sekiguchi K, Adachi T, Sasai Y. Self-organizing optic-cup morphogenesis in three-dimensional culture. Nature. 2011;472(7341):51-6. Epub 2011/04/09. doi: 10.1038/nature09941. PubMed PMID: 21475194.
- 15. Wahlin KJ, Maruotti JA, Sripathi SR, Ball J, Angueyra JM, Kim C, Grebe R, Li W, Jones BW, Zack DJ. Photoreceptor Outer Segment-like Structures in Long-Term 3D Retinas from Human Pluripotent Stem Cells. Sci Rep. 2017;7(1):766. doi: 10.1038/s41598-017-00774-9. PubMed PMID: 28396597; PMCID: PMC5429674.
- 16. Sigelman J OV. Sigelman J, Ozanics V. Jokobiec FA, editor. Philadelphia: Harper and Rowe; 1982.
- 17. Nicodemus GD, Bryant SJ. Cell Encapsulation in Biodegradable Hydrogels for Tissue Engineering Applications. Tissue Engineering: Part B. 2008;14(2):149-65.
- 18. Xiao W, He J, Nichol JW, Wang L, Hutson CB, Wang B, Du Y, Fan H, Khademhosseini A. Synthesis and characterization of photocrosslinkable gelatin and silk fibroin interpenetrating polymer network hydrogels. Acta Biomater. 2011;7(6):2384-93.
- 19. Habeeb AFSA. Deterimination of Free Amino Groups in Proteins by Trinitrobenzenesulfonic Acid. Analytical Biochemistry. 1966;14:328-36.
- 20. Shirahama H, Lee BH, Tan LP, Cho N-J. Precise Tuning of Facile One-Pot Gelatin Methacryloyl (GelMA) Synthesis. Scientific Reports. 2016;6:1-11.
- 21. Billiet T, Vandenhaute M, Schelfhout J, Van Vlierberghe S, Dubruel P. A review of trends and limitations in hydrogel-rapid prototyping for tissue engineering. Biomaterials. 2012;33(26):6020-41. doi: 10.1016/i.biomaterials.2012.04.050. PubMed PMID: 22681979.
- 22. Billiet T, Gevaert E, De Schryver T, Cornelissen M, Dubruel P. The 3D printing of gelatin methacrylamide cell-laden tissue-engineering constructs with high cell viability. Biomaterials. 2013;35:49-62.
- 23. Zhu W, Ma X, Gou M, Mei D, Zhang K, Chen S. 3D printing of functional biomaterials for tissue engineering. Current Opinion in Biotechnology. 2016;40:103-12.
- 24. Yue K, Trujillo-de Santiago G, Alvarez MM, Tamayol A, Annabi N, Khademhosseini A. Synthesis, properties, and biomedical applications of gelatin methacryloyl (GelMA) hydrogels. Biomaterials. 2015;73:254-71.
- 25. Alessandri K, Feyeux M, Gurchenkov B, Delgado C, Trushko A, Krause KH, Vignjevic D, Nassoy P, Roux A. A 3D printed microfluidic device for production of functionalized hydrogel microcapsules for culture and differentiation of human Neuronal Stem Cells (hNSC). Lab Chip. 2016;16(9):1593-604. doi: 10.1039/c6lc00133e. PubMed PMID: 27025278.
- 26. Bae JH, Lee JM, Chung BG. Hydrogel-encapsulated 3D microwell array for neuronal differentiation. Biomed Mater. 2016;11(1):015019. doi: 10.1088/1748-6041/11/1/015019. PubMed PMID: 26928882.
- 27. Hanson Shepherd JN, Parker ST, Shepherd RF, Gillette MU, Lewis JA, Nuzzo RG. 3D Microperiodic Hydrogel Scaffolds for Robust Neuronal Cultures. Adv Funct Mater. 2011;21(1):47-54. doi: 10.1002/adfm.201001746. PubMed PMID: 21709750; PMCID: PMC3120232.
- 28. Ouyang L, Yao R, Chen X, Na J, Sun W. 3D printing of HEK 293FT cell-laden hydrogel macroporous constructs with high cell viability and normal biological functions. Biofabrication. 2015;7.1:015010.