

References

- Acosta, M. A., Jiang, X., Huang, P. K., Cutler, K. B., Grant, C. S., Walker, G. M., & Gamcsik, M. P. (2014). A microfluidic device to study cancer metastasis under chronic and intermittent hypoxia. *Biomicrofluidics*, 8(5), 054117. doi:10.1063/1.4898788
- Aoto, K., Shikata, Y., Imai, H., Matsumaru, D., Tokunaga, T., Shioda, S., . . . Motoyama, J. (2009). Mouse Shh is required for prechordal plate maintenance during brain and craniofacial morphogenesis. *Dev Biol*, 327(1), 106-120. doi:10.1016/j.ydbio.2008.11.022
- Aparicio, J. G., Hopp, H., Choi, A., Mandayam Comar, J., Liao, V. C., Harutyunyan, N., & Lee, T. C. (2017). Temporal expression of CD184(CXCR4) and CD171(L1CAM) identifies distinct early developmental stages of human retinal ganglion cells in embryonic stem cell derived retina. *Exp Eye Res*, 154, 177-189. doi:10.1016/j.exer.2016.11.013
- Ashery-Padan, R., Marquardt, T., Zhou, X., & Gruss, P. (2000). Pax6 activity in the lens primordium is required for lens formation and for correct placement of a single retina in the eye. *Genes Dev*, 14(21), 2701-2711.
- Avior, Y., Sagi, I., & Benvenisty, N. (2016). Pluripotent stem cells in disease modelling and drug discovery. *Nat Rev Mol Cell Biol*, 17(3), 170-182. doi:10.1038/nrm.2015.27
- Borday, C., Cabochette, P., Parain, K., Mazurier, N., Janssens, S., Tran, H. T., . . . Perron, M. (2012). Antagonistic cross-regulation between Wnt and Hedgehog signalling pathways controls post-embryonic retinal proliferation. *Development*, 139(19), 3499-3509. doi:10.1242/dev.079582
- Caprara, C., Thiersch, M., Lange, C., Joly, S., Samardzija, M., & Grimm, C. (2011). HIF1A is essential for the development of the intermediate plexus of the retinal vasculature. *Invest Ophthalmol Vis Sci*, 52(5), 2109-2117. doi:10.1167/iovs.10-6222
- Chen, H. Y., Kaya, K. D., Dong, L., & Swaroop, A. (2016). Three-dimensional retinal organoids from mouse pluripotent stem cells mimic in vivo development with enhanced stratification and rod photoreceptor differentiation. *Mol Vis*, 22, 1077-1094.
- Clevers, H. (2016). Modeling Development and Disease with Organoids. *Cell*, 165(7), 1586-1597. doi:10.1016/j.cell.2016.05.082
- Cringle, S. J., & Yu, D. Y. (2010). Oxygen supply and consumption in the retina: implications for studies of retinopathy of prematurity. *Doc Ophthalmol*, 120(1), 99-109. doi:10.1007/s10633-009-9197-2
- Cringle, S. J., Yu, P. K., Su, E. N., & Yu, D. Y. (2006). Oxygen distribution and consumption in the developing rat retina. *Invest Ophthalmol Vis Sci*, 47(9), 4072-4076. doi:10.1167/iovs.05-1638
- Dimaras, H., Corson, T. W., Cobrinik, D., White, A., Zhao, J., Munier, F. L., . . . Gallie, B. L. (2015). Retinoblastoma. *Nat Rev Dis Primers*, 1, 15021. doi:10.1038/nrdp.2015.21
- Dimaras, H., Khetan, V., Halliday, W., Orlic, M., Prigoda, N. L., Piovesan, B., . . . Gallie, B. L. (2008). Loss of RB1 induces non-proliferative retinoma: increasing genomic instability correlates with progression to retinoblastoma. *Hum Mol Genet*, 17(10), 1363-1372. doi:10.1093/hmg/ddn024
- Dimaras, H., Kimani, K., Dimba, E. A., Gronsdahl, P., White, A., Chan, H. S., & Gallie, B. L. (2012). Retinoblastoma. *Lancet*, 379(9824), 1436-1446. doi:10.1016/S0140-6736(11)61137-9
- Eiraku, M., Takata, N., Ishibashi, H., Kawada, M., Sakakura, E., Okuda, S., . . . Sasai, Y. (2011). Self-organizing optic-cup morphogenesis in three-dimensional culture. *Nature*, 472(7341), 51-56. doi:10.1038/nature09941
- Engerer, P., Suzuki, S. C., Yoshimatsu, T., Chapouton, P., Obeng, N., Odermatt, B., . . . Godinho, L. (2017). Uncoupling of neurogenesis and differentiation during retinal development. *EMBO J*, 36(9), 1134-1146. doi:10.15252/embj.201694230
- Fatehullah, A., Tan, S. H., & Barker, N. (2016). Organoids as an in vitro model of human development and disease. *Nat Cell Biol*, 18(3), 246-254. doi:10.1038/ncb3312
- Fujimura, N., Taketo, M. M., Mori, M., Korinek, V., & Kozmik, Z. (2009). Spatial and temporal regulation of Wnt/beta-catenin signaling is essential for development of the retinal pigment epithelium. *Dev Biol*, 334(1), 31-45. doi:10.1016/j.ydbio.2009.07.002
- Hartnett, M. E. (2015). Pathophysiology and mechanisms of severe retinopathy of prematurity. *Ophthalmology*, 122(1), 200-210. doi:10.1016/j.ophtha.2014.07.050

- Hendriks, W. T., Warren, C. R., & Cowan, C. A. (2016). Genome Editing in Human Pluripotent Stem Cells: Approaches, Pitfalls, and Solutions. *Cell Stem Cell*, 18(1), 53-65. doi:10.1016/j.stem.2015.12.002
- Hernandez-Bejarano, M., Gestri, G., Spawls, L., Nieto-Lopez, F., Picker, A., Tada, M., . . . Cavodeassi, F. (2015). Opposing Shh and Fgf signals initiate nasotemporal patterning of the zebrafish retina. *Development*, 142(22), 3933-3942. doi:10.1242/dev.125120
- Hockemeyer, D., & Jaenisch, R. (2016). Induced Pluripotent Stem Cells Meet Genome Editing. *Cell Stem Cell*, 18(5), 573-586. doi:10.1016/j.stem.2016.04.013
- Li, C., Chaung, W., Mozayan, C., Chabra, R., Wang, P., & Narayan, R. K. (2016). A New Approach for On-Demand Generation of Various Oxygen Tensions for In Vitro Hypoxia Models. *PLoS One*, 11(5), e0155921. doi:10.1371/journal.pone.0155921
- Li, K., Zhong, X., Yang, S., Luo, Z., Li, K., Liu, Y., . . . Ge, J. (2017). HiPSC-derived retinal ganglion cells grow dendritic arbors and functional axons on a tissue-engineered scaffold. *Acta Biomater*, 54, 117-127. doi:10.1016/j.actbio.2017.02.032
- Linsenmeier, R. A. (1990). Electrophysiological consequences of retinal hypoxia. *Graefes Arch Clin Exp Ophthalmol*, 228(2), 143-150.
- Matt, N., Dupe, V., Garnier, J. M., Dennefeld, C., Chambon, P., Mark, M., & Ghyselinck, N. B. (2005). Retinoic acid-dependent eye morphogenesis is orchestrated by neural crest cells. *Development*, 132(21), 4789-4800. doi:10.1242/dev.02031
- McEvoy, J., Flores-Otero, J., Zhang, J., Nemeth, K., Brennan, R., Bradley, C., . . . Dyer, M. A. (2011). Coexpression of normally incompatible developmental pathways in retinoblastoma genesis. *Cancer Cell*, 20(2), 260-275. doi:10.1016/j.ccr.2011.07.005
- Mendoza, P. R., & Grossniklaus, H. E. (2015). The Biology of Retinoblastoma. *Prog Mol Biol Transl Sci*, 134, 503-516. doi:10.1016/bs.pmbts.2015.06.012
- Mezu-Ndubuisi, O. J., Teng, P. Y., Wanek, J., Blair, N. P., Chau, F. Y., Reddy, N. M., . . . Shahidi, M. (2013). In vivo retinal vascular oxygen tension imaging and fluorescein angiography in the mouse model of oxygen-induced retinopathy. *Invest Ophthalmol Vis Sci*, 54(10), 6968-6972. doi:10.1167/iovs.13-12126
- Murali, D., Yoshikawa, S., Corrigan, R. R., Plas, D. J., Crair, M. C., Oliver, G., . . . Furuta, Y. (2005). Distinct developmental programs require different levels of Bmp signaling during mouse retinal development. *Development*, 132(5), 913-923. doi:10.1242/dev.01673
- Murali, K., Kang, D., Nazari, H., Scianmarello, N., Cadenas, E., Tai, Y. C., . . . Humayun, M. (2016). Spatial Variations in Vitreous Oxygen Consumption. *PLoS One*, 11(3), e0149961. doi:10.1371/journal.pone.0149961
- Nakano, T., Ando, S., Takata, N., Kawada, M., Muguruma, K., Sekiguchi, K., . . . Sasai, Y. (2012). Self-formation of optic cups and storable stratified neural retina from human ESCs. *Cell Stem Cell*, 10(6), 771-785. doi:10.1016/j.stem.2012.05.009
- Parfitt, D. A., Lane, A., Ramsden, C., Jovanovic, K., Coffey, P. J., Hardcastle, A. J., & Cheetham, M. E. (2016). Using induced pluripotent stem cells to understand retinal ciliopathy disease mechanisms and develop therapies. *Biochem Soc Trans*, 44(5), 1245-1251. doi:10.1042/BST20160156
- Picker, A., & Brand, M. (2005). Fgf signals from a novel signaling center determine axial patterning of the prospective neural retina. *Development*, 132(22), 4951-4962. doi:10.1242/dev.02071
- Reichman, S., Slembrouck, A., Gagliardi, G., Chaffiol, A., Terray, A., Nanteau, C., . . . Goureau, O. (2017). Generation of Storable Retinal Organoids and Retinal Pigmented Epithelium from Adherent Human iPS Cells in Xeno-Free and Feeder-Free Conditions. *Stem Cells*, 35(5), 1176-1188. doi:10.1002/stem.2586
- Riazifar, H., Jia, Y., Chen, J., Lynch, G., & Huang, T. (2014). Chemically induced specification of retinal ganglion cells from human embryonic and induced pluripotent stem cells. *Stem Cells Transl Med*, 3(4), 424-432. doi:10.5966/sctm.2013-0147

- Ruzafa, N., Rey-Santano, C., Mielgo, V., Pereiro, X., & Vecino, E. (2017). Effect of hypoxia on the retina and superior colliculus of neonatal pigs. *PLoS One*, 12(4), e0175301. doi:10.1371/journal.pone.0175301
- Sage, J. (2012). The retinoblastoma tumor suppressor and stem cell biology. *Genes Dev*, 26(13), 1409-1420. doi:10.1101/gad.193730.112
- Sakuta, H., Takahashi, H., Shintani, T., Etani, K., Aoshima, A., & Noda, M. (2006). Role of bone morphogenic protein 2 in retinal patterning and retinotectal projection. *J Neurosci*, 26(42), 10868-10878. doi:10.1523/JNEUROSCI.3027-06.2006
- Shakoor, A., Blair, N. P., Mori, M., & Shahidi, M. (2006). Choriorretinal vascular oxygen tension changes in response to light flicker. *Invest Ophthalmol Vis Sci*, 47(11), 4962-4965. doi:10.1167/iovs.06-0291
- Shiwa, T., Uchida, H., & Tsukada, K. (2012). Co-culture Microdevice with Oxygen Gradient for Tumor Microenvironment Model and Metastasis Imaging. *American Journal of Biomedical Engineering*, 2(4), 175-180. doi:10.5923/j.ajbe.20120204.04
- Teotia, P., Chopra, D. A., Dravid, S. M., Van Hook, M. J., Qiu, F., Morrison, J., . . . Ahmad, I. (2017). Generation of Functional Human Retinal Ganglion Cells with Target Specificity from Pluripotent Stem Cells by Chemically Defined Recapitulation of Developmental Mechanism. *Stem Cells*, 35(3), 572-585. doi:10.1002/stem.2513
- Wangsa-Wirawan, N. D., & Linsenmeier, R. A. (2003). Retinal oxygen: fundamental and clinical aspects. *Arch Ophthalmol*, 121(4), 547-557. doi:10.1001/archophth.121.4.547
- Xu, X. L., Singh, H. P., Wang, L., Qi, D. L., Poulos, B. K., Abramson, D. H., . . . Cobrinik, D. (2014). Rb suppresses human cone-precursor-derived retinoblastoma tumours. *Nature*, 514(7522), 385-388. doi:10.1038/nature13813
- Yu, D. Y., & Cringle, S. J. (2001). Oxygen distribution and consumption within the retina in vascularised and avascular retinas and in animal models of retinal disease. *Prog Retin Eye Res*, 20(2), 175-208.
- Yu, D. Y., & Cringle, S. J. (2004). Low oxygen consumption in the inner retina of the visual streak of the rabbit. *Am J Physiol Heart Circ Physiol*, 286(1), H419-423. doi:10.1152/ajpheart.00643.2003
- Yu, D. Y., Cringle, S. J., & Su, E. N. (2005). Intraretinal oxygen distribution in the monkey retina and the response to systemic hyperoxia. *Invest Ophthalmol Vis Sci*, 46(12), 4728-4733. doi:10.1167/iovs.05-0694
- Zhong, X., Gutierrez, C., Xue, T., Hampton, C., Vergara, M. N., Cao, L. H., . . . Canto-Soler, M. V. (2014). Generation of three-dimensional retinal tissue with functional photoreceptors from human iPSCs. *Nat Commun*, 5, 4047. doi:10.1038/ncomms5047