

Modelling Parkinson's Disease Using Human iPSC-derived Neurons

1. Our work described in this thesis represents the first iPSC based model of PARK20. *(this thesis)*
2. The differentiation from iPSCs with the SYNJ1 R258Q mutation allowed for careful investigation of different stages of the neuron development. *(this thesis)*
3. Future elucidation of the function of the LRP10 protein and pathways could offer novel insights into mechanisms, biomarkers, and therapeutic targets for Parkinson's disease. *(this thesis)*
4. The proposed roles of SYNJ1 highlight the concept that protein homeostasis within presynaptic terminals has an important role in Parkinson's disease. *(this thesis)*
5. It is important to realize that it may be difficult, if not impossible at present day, to develop a PD model that fully recapitulates the disease pathogenesis in humans. *(this thesis)*
6. Due to the extremely rapid development in this particular research field, iPSCs became highly interesting tools for in vitro disease modelling but also for potential application in regenerative medicine. *(Roessler, Stem Cell Reviews and Reports, 2013)*
7. An alternative to generating ventral midbrain Dopaminergic neurons from pluripotent stem cells is to directly reprogram somatic cells to neurons. *(Playne, Stem Cell Reviews and Reports, 2017)*
8. Given the explosion of research on induced pluripotent stem cells, it is timely to consider the various ethical, legal, and social issues engaged by this fast-moving field. *(Zarzewczny, Cell, 2009)*
9. Although the pluripotency of fully reprogrammed mouse iPSCs seems to be indistinguishable from that of mouse ES cells, this remains controversial for human iPSCs, which seem to show differences in gene expression and DNA methylation patterns compared to human ES cells. *(Takahashi & Yamanaka, Nature Reviews Molecular Cell Biology, 2016)*
10. I have not failed. I've just found 10,000 ways that won't work. *(Thomas Edison)*
11. It's lack of faith that makes people afraid of meeting challenges, and I believed in myself. *(Muhammad Ali)*