



Universiteit
Leiden

The Netherlands

Confronting ALS: understanding multicellular contribution to neurodegeneration : computational analysis and hiPSCs in vitro modelling as a multidisciplinary approach

Limone, F.

Citation

Limone, F. (2023, September 26). *Confronting ALS: understanding multicellular contribution to neurodegeneration : computational analysis and hiPSCs in vitro modelling as a multidisciplinary approach*. Retrieved from <https://hdl.handle.net/1887/3642489>

Version: Publisher's Version

License: [Licence agreement concerning inclusion of doctoral thesis in the Institutional Repository of the University of Leiden](#)

Downloaded from: <https://hdl.handle.net/1887/3642489>

Note: To cite this publication please use the final published version (if applicable).

Confronting ALS: understanding multicellular contribution to neurodegeneration

Computational analysis and hiPSCs in vitro modelling as a multidisciplinary approach

1. Specific susceptibility of extratelencephalic neurons might be a major driver of neurodegenerative mechanisms in Amyotrophic Lateral Sclerosis. (This thesis)
2. Proteostatic stress is a specifically neuronal symptom of ALS and might be contributing to TDP-43-mediated disruptions of RNA metabolism. (This thesis)
3. Degeneration in ALS is unmistakably neuronal, however, multi-cell type disruptions should be considered to re-establish of a neuroprotective environment. (This thesis)
4. Coupling developmental cues with enforced expression of transcription factors can both increase efficiency and refine identity of hiPSC-derived cells. (This thesis)
5. Scalability and ease of production are major hindering factors for the use of hiPSC-derived cells for modelling diseases with complex genetic backgrounds. (This thesis)
6. Pooled, multiplexed sequencing approaches coupled with stem cell technologies could unveil how subtly inherited genetic traits shape complex neuronal biology. (The field)
7. Single-cell/nucleus technologies will improve our understanding of specific cell type susceptibility to a variety of neurodegenerative disorders. (The field)
8. To study multicellular contribution to neurodegeneration we need a better understanding of cell-cell interactions in homeostasis, especially in a human context. (The field)
9. hPSC-derived cells can be a turning point for *in vitro* modelling of molecular mechanisms disrupted in aging diseases allowing the assessment of disease relevant perturbations in a controlled setting. (The field)
10. It's important to remember the validity of every technology in the right context. No model system or analytical approach is "better/worse" than other if the right questions are being asked.
11. Show me a person that could maintain healthy, mental stability during a PhD, they deserve a Nobel prize!
12. Forgetting cells in the incubator over weekend can change your PhD, ~95% GFP⁺, baby!