

Human Neuron Models for Scalable Drug Discovery of Parkinson's Disease

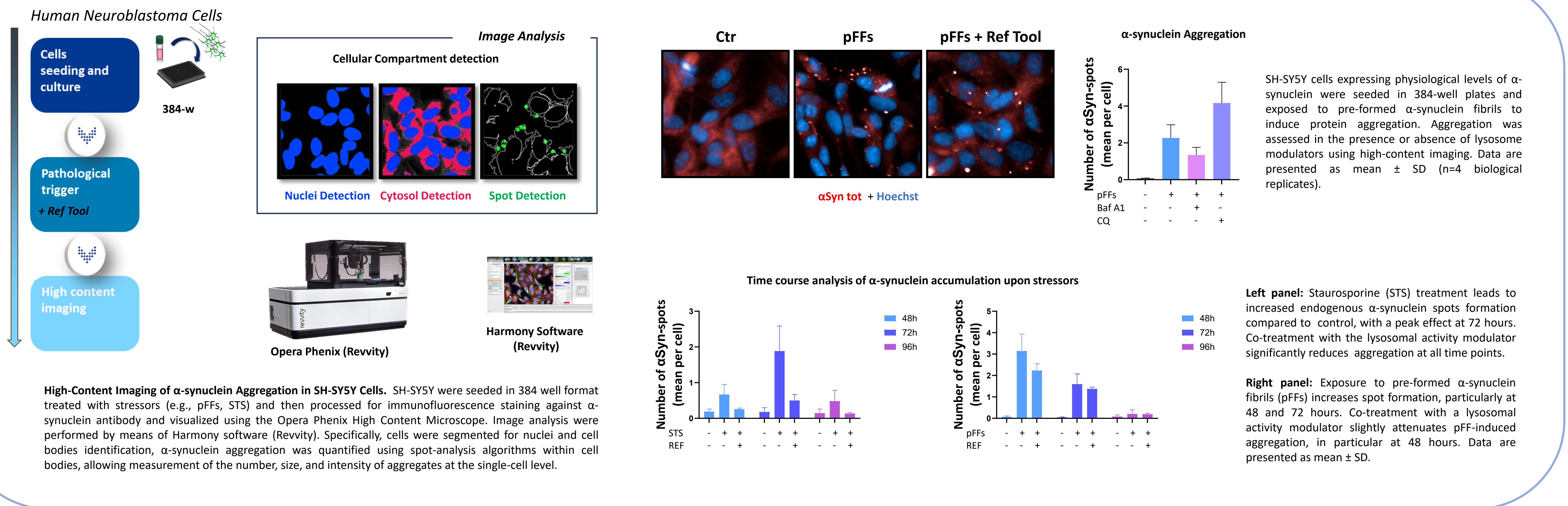
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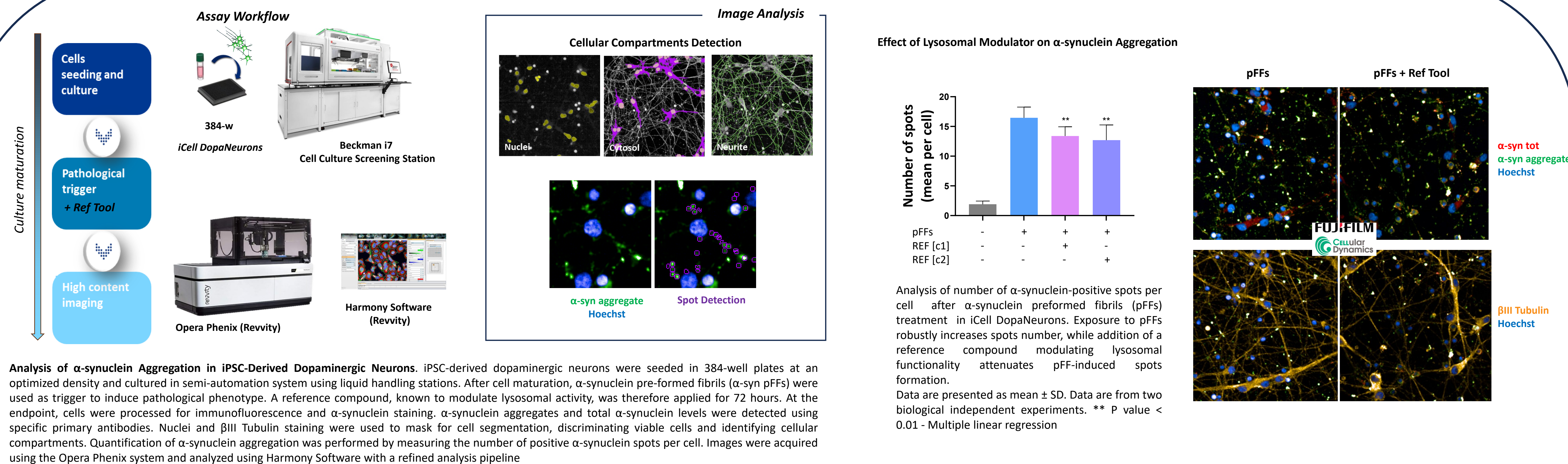
Parkinson's disease (PD) is a progressive neurodegenerative disorder characterized by the selective loss of dopaminergic neurons and represents the second most common cause of human neurodegeneration after Alzheimer's disease.

Human **iPSC derived dopaminergic neurons** (iDopa neurons; Fujifilm Cellular Dynamics) have emerged as a robust and physiologically relevant in vitro model for PD drug discovery. To support scalable and high-throughput demands for screening programs, **α -synuclein aggregation assays** were first established in SH-SY5Y cell systems and subsequently translated into hiPSC-derived dopaminergic neurons, enabling a more disease-relevant evaluation of α -synuclein pathology, suitable for hit-to-lead validation, target identification and functional studies.

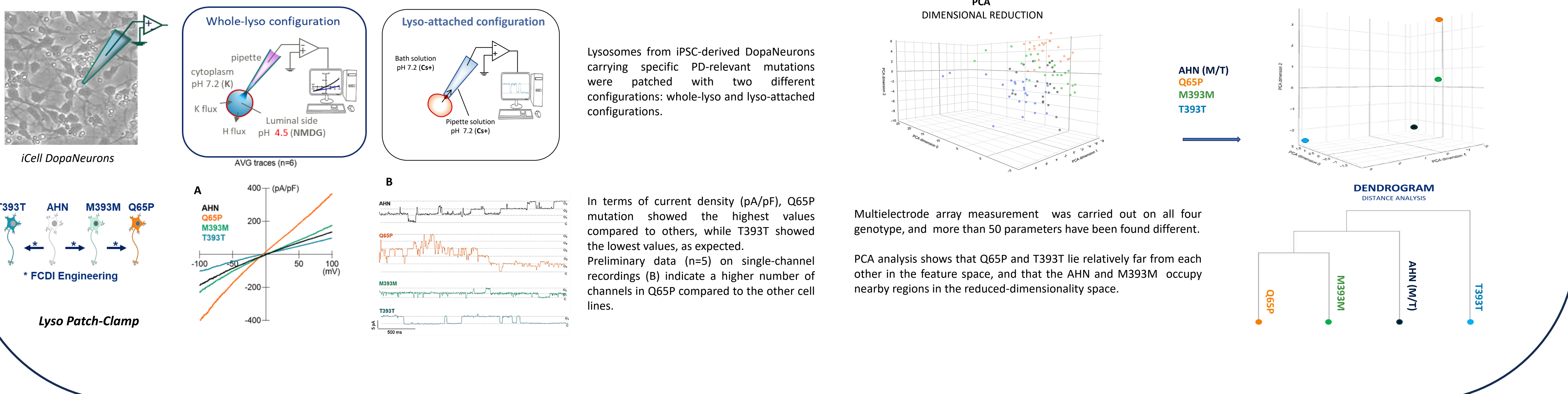
α -synuclein assay in human SH-SY5Y cell line in 384 well



α -synuclein assay in human iPSC-Dopa neurons in 384 well



Lysosome Patch Clamp and Multielectrode Array (MEA) of TMEM175 iCell DopaNeurons



Conclusion: The platform presented enables quantification of α -synuclein aggregation and functional analysis in relevant cell models and in a scalable format, suitable for compound profiling and High-Content screening campaigns.

This work is a part of Axxam's internal Innovation project portfolio.

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