

## hiPSC Technology for Disease Modeling

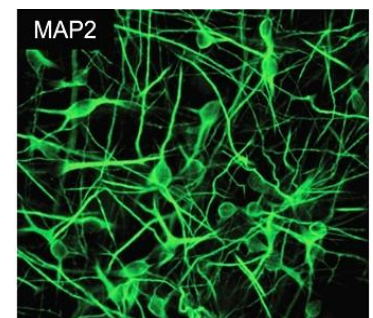
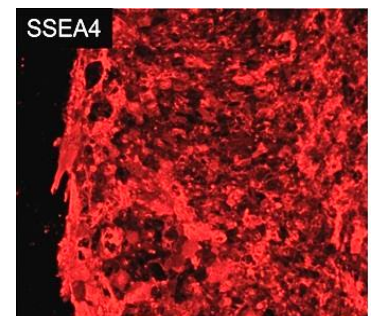
### Sources of hiPSC Derived Disease Models

Biopsy material (e.g. skin) from clinically diagnosed individuals for generation of hiPSCs and derived cell types

- Benefit from genetic backgrounds of individual patients
- Identify and validate disease-causing targets and mechanisms

Genome editing (CRISPR/Cas9) in established hiPSC lines to generate synthetic human disease models

- Study defined disease-causing mutations or alleles
- Ensure enhanced comparability of observed phenotypes through isogenic background of cellular models



### Phenotypic Analyses of hiPSC-derived Disease Models

- ICC workflows for single cell analysis of synaptic connectivity
- HCA routines to monitor neuronal development (e.g. neurite outgrowth)
- Functional imaging (Ca<sup>2+</sup>-sensitive dyes) to evaluate parameters of neuronal activity
- RT-qPCR panels (QuantStudio™ 12K Flex) to determine model-specific gene expression signatures

