Docket #: S08-264

Pluripotent Cell Lines with Genetic Variations and Methods of Use Thereof

Stanford researchers have developed a method in which induced pluripotent stem cells (iPSCs) can be generated specifically for a disease of interest. In particular, they are able to generate patient-specific iPSCs related to Parkinson's disease or Parkinson's-like disease. The disease-related iPSCs are further differentiated into cell types such as dopaminergic neurons, involved in the disease progression. These differentiated cells are a valuable source for cellular transplantation therapy and as a cellular model for elucidating basic disease mechanisms, screening for therapeutics and for use in diagnostic, prognostic, and theranostic applications.

Applications

- Identification of disease mechanisms
- Screening for therapeutic agents
- Screening and diagnosis of disease
- Generation of cell lines with genetic variations of a gene of interest

Advantages

- Longer cell life span compared to postmortem samples
- Not limited to one type of cell
- Can use disease-affected tissue that models fundamental features of the disease at a cellular level
- Avoids genetic variations (mutations, copy number variation)

Publications

- US patent application 12/459,019: Pluripotent cell lines and methods of use thereof

Patents

- Published Application: 20100167286
- Published Application: WO2010008486
- Published Application: 20140356455
- Published Application: 20170114324
- Issued: 9,464,273 (USA)
- Issued: 10,233,422 (USA)

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