

Human Induced Pluripotent Stem Cells Derived with Episomal Vectors

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Human Embryonic Stem (ES) cell lines are capable of unlimited undifferentiated proliferation and yet maintain the ability to contribute to advanced derivatives of all three embryonic germ layers. Human induced pluripotent stem (iPS) cells share these defining characteristics of human ES cells, but are derived from somatic cells, not from early embryos. This talk will describe our initial screens that identified four factors (Oct4, Sox2, Nanog, Lin28) as sufficient to reprogram human fibroblasts to iPS cells, describe the use of iPS cells in a particular model of neural degenerative disease, and describe new methods for deriving human iPS cells with episomal vectors that do not require integration of the reprogramming transgenes into the genome.