

Generation of a human induced pluripotent stem cell (iPSC) line from a 51-year-old female with attention-deficit/hyperactivity disorder (ADHD) carrying a duplication of SLC2A3.

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Stem Cell Res. 2018 Feb 13;28:136-140.
doi: 10.1016/j.scr.2018.02.005.

Abstract

Fibroblasts were isolated from a skin biopsy of a clinically diagnosed 51-year-old female attention-deficit/hyperactivity disorder (ADHD) patient carrying a duplication of SLC2A3, a gene encoding neuronal glucose transporter-3 (GLUT3). Patient fibroblasts were infected with Sendai virus, a single-stranded RNA virus, to generate transgene-free human induced pluripotent stem cells (iPSCs). SLC2A3-D2-iPSCs showed expression of pluripotency-associated markers, were able to differentiate into cells of the three germ layers in vitro and had a normal female karyotype. This in vitro cellular model can be used to study the role of risk genes in the pathogenesis of ADHD, in a patient-specific manner.