	Karyotype	Transgene silencing	Pluripotency markers	*In vitro* differentiation	Teratoma assay
Twin-N-iPSCs					
Line 3	46, XX	Passed	Passed	Passed	Passed
Line 7	46, XX	Passed	Passed	Passed	Passed
Twin-DS-iPSCs					
Line 4	47, XX +21	Passed	Passed	Passed	Passed
Line 6	47, XX +21	Passed	Passed	Passed	Passed

Supporting Information Table 1. Summary of iPSC lines generated

Normal (Twin-N) and Down syndrome (Twin-DS) fetal fibroblasts were isolated from monozygotic twins discordant for trisomy 21 (Dahoun et al, 2008) and used to establish Twin-N-iPSCs and Twin-DS-iPSCs using lentiviral vectors expressing *OCT4*, *SOX2*, *KLF4* and *c-MYC* genes as previously described (Takahashi et al, 2007; Grad I et al, 2011). Several iPSC lines have been generated from the parental Twin-N and Twin-DS fibroblasts: 8 Twin-N-iPSC and 12 Twin-DS-iPSC lines. IPSC lines that we did not succeed to expand or those that exhibited chromosomal aberrations have been excluded from the study. Two iPSC lines for each twin have been characterized for *in vivo* differentiation in a teratoma formation assay and *in vitro* differentiation into NPCs and neurons.