Appendix for

Chemical conversion of human conventional PCSs to TSCs following transient naive genes activation

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Appendix Table S1: RNA-seq samples description.

RNA-seq sample	Description	Passage number	Total number of reads	Mapping rate
HPD01 naive-iPSCs_Replicate1	Naive-iPSCs generated in Giulitti et al 2019; XY	p16	6493019	72.16%
HPD01 naive-iPSCs_Replicate2	Naive-iPSCs generated in Giulitti et al 2019; XY	p23	6114651	68.55%
HPD01 naive-iPSCs_Replicate3	Naive-iPSCs generated in Giulitti et al 2019; XY	p22	5846014	55.27%
HPD06 naive-iPSCs_Replicate1	Naive-iPSCs generated in Giulitti et al 2019; XY	p21	6230340	79.12%
HPD06 naive-iPSCs_Replicate2	Naive-iPSCs generated in Giulitti et al 2019; XY	p25	6215948	63.95%
HPD06 naive-iPSCs_Replicate3	Naive-iPSCs generated in Giulitti et al 2019; XY	p26	6864856	63.84%
H9 primed-ESCs_Replicate1	Primed-ESCs from WiCell, WA09; XX	p48	6802773	85.94%
H9 primed-ESCs_Replicate2	Primed-ESCs from WiCell, WA09; XX	p50	5759737	87.55%
H9 primed-ESCs_Replicate3	Primed-ESCs from WiCell, WA09; XX	p51	5812252	86.49%
HPD00_Replicate1	Primed-iPSCs generated in Giulitti et al 2019; XY	p18	5721612	85.46%
HPD00_Replicate2	Primed-iPSCs generated in Giulitti et al 2019; XY	p20	5565440	85.24%
HPD00_Replicate3	Primed-iPSCs generated in Giulitti et al 2019; XY	p21	6187377	80.51%
KiPS_primed-iPSCs_ Replicate1	Primed-iPSCs generated in Takashima et al 2014; XX	p28	7755245	81.45%
KiPS_primed-iPSCs_ Replicate2	Primed-iPSCs generated in Takashima et al 2014; XX	p30	10300785	84.88%
KiPS_primed-iPSCs_ Replicate3	Primed-iPSCs generated in Takashima et al 2014; XX	p32	7950602	79.84%
KiPS_D0_Replicate1	Primed-iPSCs during chemical resetting Day 0 in this study; XX	p34	5916326	81.72%
KiPS_D0_Replicate2	Primed-iPSCs during chemical resetting Day 0 in this study; XX	p34	6696795	74.42%
KiPS_reset_D2_Replicate1	Primed-iPSCs during chemical resetting Day 2 in this study; XX	p34	5912890	67.76%
KiPS_reset_D2_Replicate2	Primed-iPSCs during chemical resetting Day 2 in this study; XX	p34	6324224	69.47%

KiPS_reset_D3_Replicate1	Primed-iPSCs during chemical resetting Day 3 in this study; XX	p34	5344963	71.64%
KiPS_reset_D3_Replicate2	Primed-iPSCs during chemical resetting Day 3 in this study; XX	p34	6081910	74.68%
KiPS_reset_D4_PXGL	Primed-iPSCs during chemical resetting Day 4 in this study; XX	p34	6665374	74.99%
KiPS_reset_D4_TSC	Primed-iPSCs during chemical resetting Day 4 in this study; XX	p34	5740672	74.19%
KiPS_reset_D5_PXGL	Primed-iPSCs during chemical resetting Day 5 in this study; XX	p34 + 1	8067449	74.19%
KiPS_reset_D5_TSC	Primed-iPSCs during chemical resetting Day 5 in this study; XX	p34 + 1	7833808	75.63%
KiPS_reset_D6_PXGL_ Replicate1	Primed-iPSCs during chemical resetting Day 6 in this study; XX	p34 + 1	7638130	78.17%
KiPS_reset_D6_PXGL_ Replicate2	Primed-iPSCs during chemical resetting Day 6 in this study; XX	p34 + 1	8783827	77.07%
KiPS_reset_D6_TSC_ Replicate1	Primed-iPSCs during chemical resetting Day 6 in this study; XX	p34 + 1	7593040	75.36%
KiPS_reset_D6_TSC_ Replicate2	Primed-iPSCs during chemical resetting Day 6 in this study; XX	p34 + 1	8453812	77.49%
KiPS_reset_D9_PXGL_ Replicate1	Primed-iPSCs during chemical resetting Day 9 in this study; XX	p34 + 1	8054184	64.26%
KiPS_reset_D9_PXGL_ Replicate2	Primed-iPSCs during chemical resetting Day 9 in this study; XX	p34 + 1	9056851	66.17%
KiPS_reset_D9_TSC_ Replicate1	Primed-iPSCs during chemical resetting Day 9 in this study; XX	p34 + 1	6187265	73.43%
KiPS_reset_D9_TSC_ Replicate2	Primed-iPSCs during chemical resetting Day 9 in this study; XX	p34 + 1	6808432	71.36%
KiPS_reset_D12_PXGL_ Replicate1	Primed-iPSCs during chemical resetting Day 12 in this study; XX	p34 +2	7865342	64.28%
KiPS_reset_D12_PXGL_ Replicate2	Primed-iPSCs during chemical resetting Day 12 in this study; XX	p34 +2	8223342	62.68%
KiPS_reset_D12_TSC_ Replicate1	Primed-iPSCs during chemical resetting Day 12 in this study; XX	p34 +2	7156108	74.45%
KiPS_reset_D12_TSC_ Replicate2	Primed-iPSCs during chemical resetting Day 12 in this study; XX	p34 +2	8840607	75.16%
TSC-H9_Replicate1	TSCs derived from reset H9 Naive ESCs; XX	p10	8905595	70.83%
TSC-H9_Replicate2	TSCs derived from reset H9 Naive ESCs; XX	p10	7908147	66.60%
TSC-H9_Replicate3	TSCs derived from reset H9 Naive ESCs; XX	p10	7581655	71.88%

TSC-HPD06_Replicate1	TSCs derived from HPD06 Naive-iPSCs; XY	p15	8079700	79.25%
TSC-HPD06_Replicate2	TSCs derived from HPD06 Naive-iPSCs; XY	p15	8488619	75.72%
TSC-HPD06_Replicate3	TSCs derived from HPD06 Naive-iPSCs; XY	p15	8016237	81.59%
ccTSC.01_Replicate1	Chemical converted TSC.01; XX	p10	7763957	65.54%
ccTSC.01_Replicate2	Chemical converted TSC.01; XX	p10	7724602	64.45%
ccTSC.01_Replicate3	Chemical converted TSC.01; XX	p10	6992013	70.22%
ccTSC.02_Replicate1	Chemical converted TSC.02; XX	p10	6172789	71.01%
ccTSC.02_Replicate2	Chemical converted TSC.02; XX	p10	6133967	65.66%
ccTSC.02_Replicate3	Chemical converted TSC.02; XX	p10	6784265	74.17%
KiPS primed-iPSCs_Replicate1	Primed-iPSCs generated in Takashima et al 2014; XX	p40	4918290	86.50%
KiPS primed-iPSCs_Replicate2	Primed-iPSCs generated in Takashima et al 2014; XX	p40	6351982	86.68%
KiPS primed-iPSCs_Replicate3	Primed-iPSCs generated in Takashima et al 2014; XX	p42	6021428	86.42%
KiPS primed-iPSCs_Replicate4	Primed-iPSCs generated in Takashima et al 2014; XX	p45	5693196	86.70%
KiPS-chemical resetting_Replicate1	Chemical reset into Naive; XX	p40+5	5756409	82.25%
KiPS-chemical resetting_Replicate2	Chemical reset into Naive; XX	p40+5	5984279	82.72%
KiPS-chemical resetting_Replicate3	Chemical reset into Naive; XX	p40+5	6242607	82.04%
KiPS-chemical resetting_Replicate4	Chemical reset into Naive; XX	p40+5	6378721	81.69%

Appendix Table S2. All antibodies used in this study.

Antibody	Dilution	Product code	Company
OCT4	1:300	sc-5279	Santa Cruz
OCT4	1:100	565644	BD Biosciences
KLF17	1:250	HPA024629	Atlas
KRT7	1:100	AB183344	Abcam
GATA3	1:100	AF2605	R&D
SUSD2	1:100	130-127-902	MACS Miltenyi Biotec
SDC1	1:100	AB130405	Abcam
HLA-G	1:100	AB283260	Abcam
Donkey anti-Goat IgG (H+L) Secondary Antibody Alexa Fluor 488	1:500	A-11055	ThermoFisher
Donkey anti-Mouse IgG (H+L) Secondary Antibody Alexa Fluor 568	1:500	A-10037	ThermoFisher
Donkey anti-Rabbit IgG (H+L) Secondary Antibody Alexa Fluor 647	1:500	A-31573	ThermoFisher

Appendix Table S3. All primers used in this study.

Gene	Forward primer (5'-3')	Reverse primer (5'-3')
GAPDH	CGAGATCCCTCCAAAATCAA	GGCAGAGATGATGACCCTTT
DPPA5	AAGTGGATGCTCCAGTCCAT	ATCCAAGGGCCTAGTTCGAG
KLF17	CACACAGGTGAGAGGCCATA	TATGCGGGTACACACCAGAT
KLF4	CCCAATTACCCATCCTTCCT	CAGGTGTGCCTTGAGATGG
TFCP2L1	GGAGTTCCAGCCATGCTCTT	CCTGCTTGAAGATGGGCAGA
OCT4	GTGGAGGAAGCTGACAACAA	ATTCTCCAGGTTGCCTCTCA
ZIC2	CATGCACGGTCCACACCTC	CTCATGGACCTTCATGTGCTT
NANOG	TTTGTGGGCCTGAAGAAAACT	AGGGCTGTCCTGAATAAGCAG
GATA2	GACTACAGCAGCGGACTCTT	GCCTTCTGAACAGGAACGAG
GATA3	ACAGAAGGCAGGGAGTGTGT	TCCGTTCATTTTGTGATAGAGC
KRT7	AGGAGAGCGAGCAGATCAAG	CTTGGTCTCCAGCAGCTTGT
TFAP2A	TCCCAATGAGCAAGTGACAA	CAGCAGGTCGGTGAACTCTT
HAVCR1	GGCGTATATTGTTGCCGTGT	GACGGTTGGAACAGTTGTGA
IGFBP3	CCTGCCGTAGAGAAATGGAA	AAGGGCGACACTGCTTTTT
ELF5	ACTTCATCCTCCAGAACATCC	AGTCTTTGATGGTGGCCTTG
TP63	ACGAAGATCCCCAGATGATG	TGCTGTTGCCTGTACGTTTC
CGB	ACCCTGGCTGTGGAGAAGG	ATGGACTCGAAGCGCACA
INHA1	ATCCTTTTCCCAGCCACAG	GCCGGAACATGTATCTGAAG
PSG1	GGTACAAAGGGCAAATGAGG	ATTCTGGATCAGCAGGGATG
CGA	ATGGGCTGCTGCTTCTCTA	CGTGTGGTTCTCCACTTTGA
CGB2	ATGTCAAAGGGGCTGCTG	GCACAGATGGTGGTGTTGAC
SDC1	GCTGACCTTCACACTCCCCA	CAAAGGTGAAGTCCTGCTCCC
PSG3	TGGGAAGTTTCAGCTATCAGG	TGGGAAGTTTCAGCTATCAGG
PSG5	GAGGGCTCTATACTTGCTCTGTTC	TTGGATTAAGGAGAGGAAGACG
INHA1	ATCCTTTTCCCAGCCACAG	GCCGGAACATGTATCTGAAG

VGLL3	GATTCCTGCTCCCCAGTGT	TCAGTACCACGGTGATTCCTT
NOTUM	TGCTTCTTTGGCTACAAGGTC	GGCACGTCCTTGAGTGTGT
SNAI1	TCTAGGCCCTGGCTGCTAC	GCCTGGCACTGGTACTTCTT
ITGA5	GCCTGTGGAGTACAAGTCCTT	AATTCGGGTGAAGTTATCTGTGG