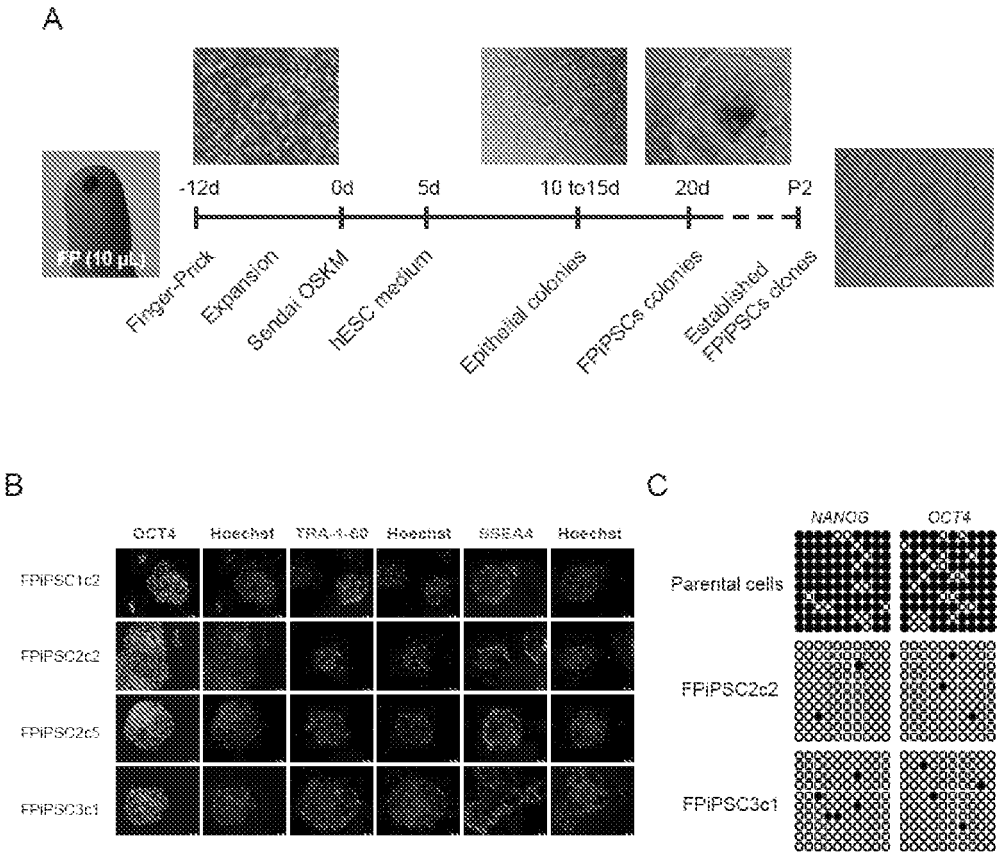

A
-12d
0d
5d
10 to15d
20d
P2
FP (10 mL)
Finger-Prick
Expansion
Sendai OSKM
hESC medium
Epithelial colonies
FPiPSCs colonies
Established FPiPSCs clones
B
OCT4
Hoechst
TRA-1-60
Hoechst
SSEA4
Hoechst
FPiPSC1c2
FPiPSC2c2
FPiPSC2c5
FPiPSC3c1
C
NANOG
OCT4
Parental cells
FPiPSC2c2
FPiPSC3c1

FIGURE 1

D

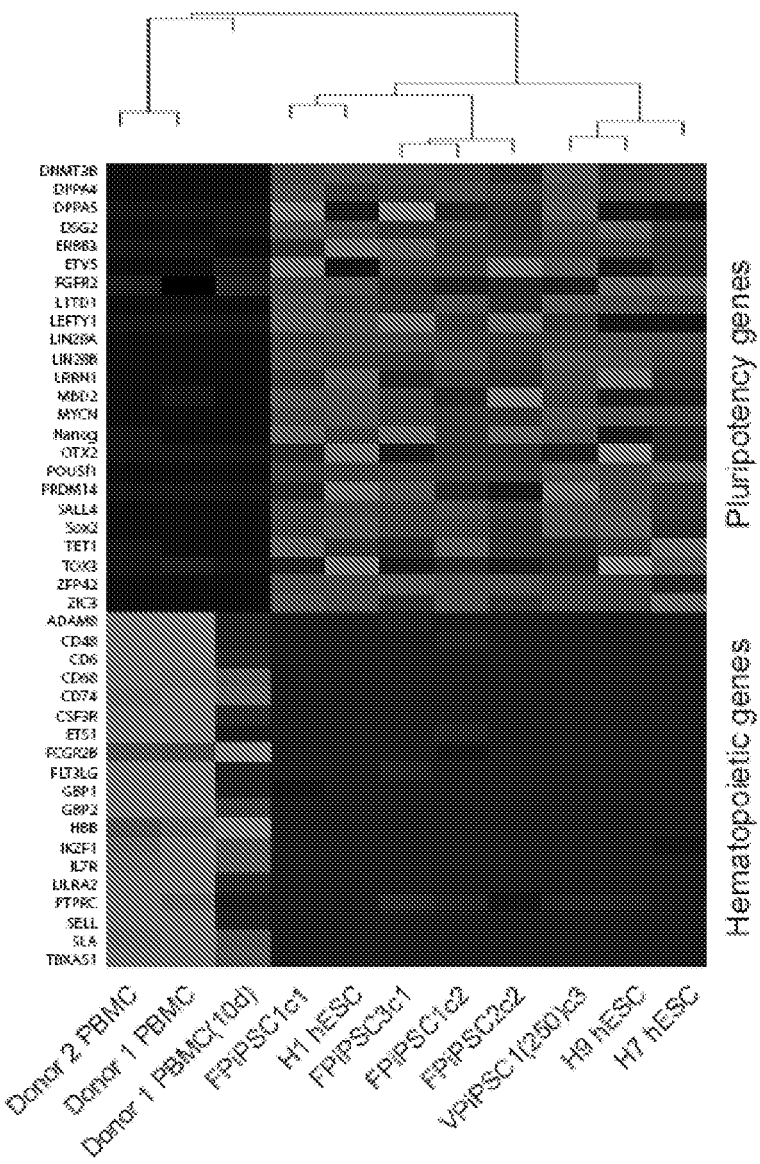


FIGURE 1 CONTINUED

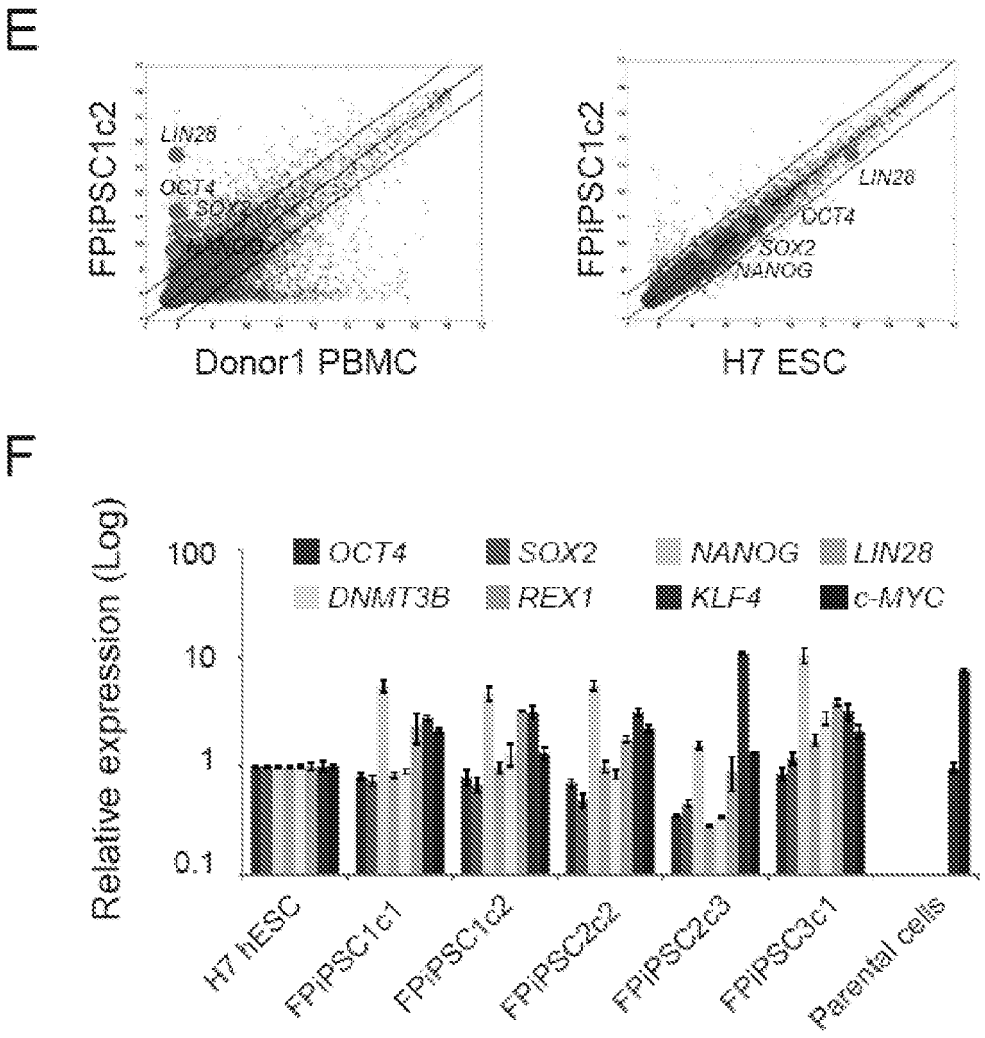


FIGURE 1 CONTINUED

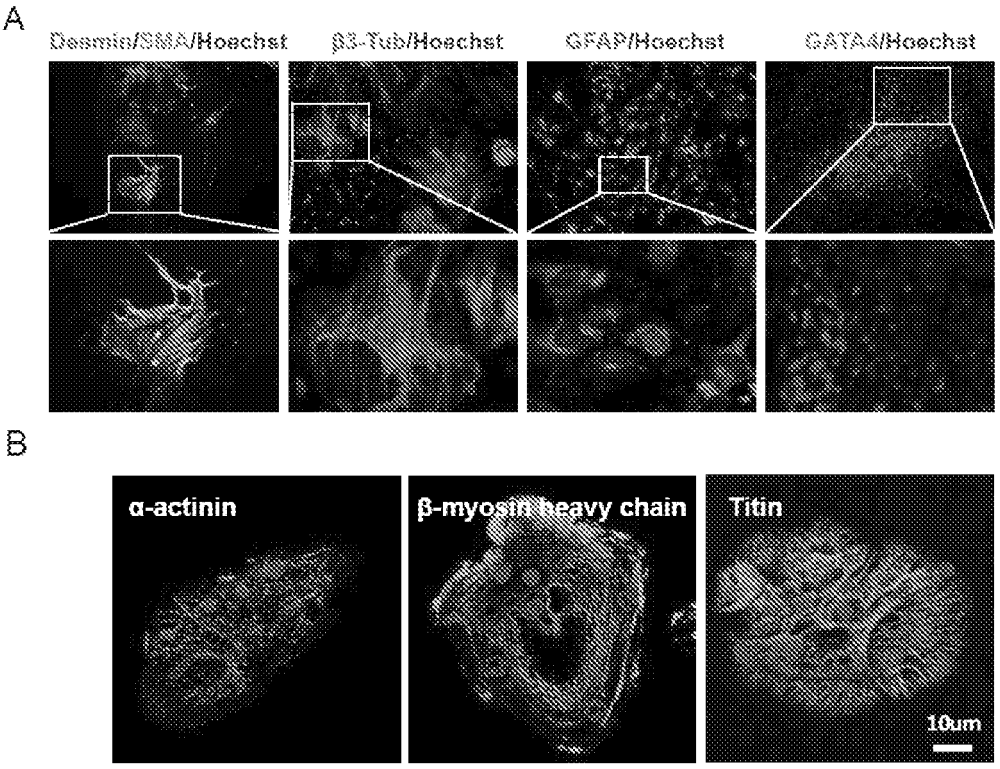

A
Desmin/SMA/Hoechst
β3-Tub/Hoechst
GFAP/Hoechst
GATA4/Hoechst
B
α-actinin
β-myosin heavy chain
Titin
10um

FIGURE 2

C

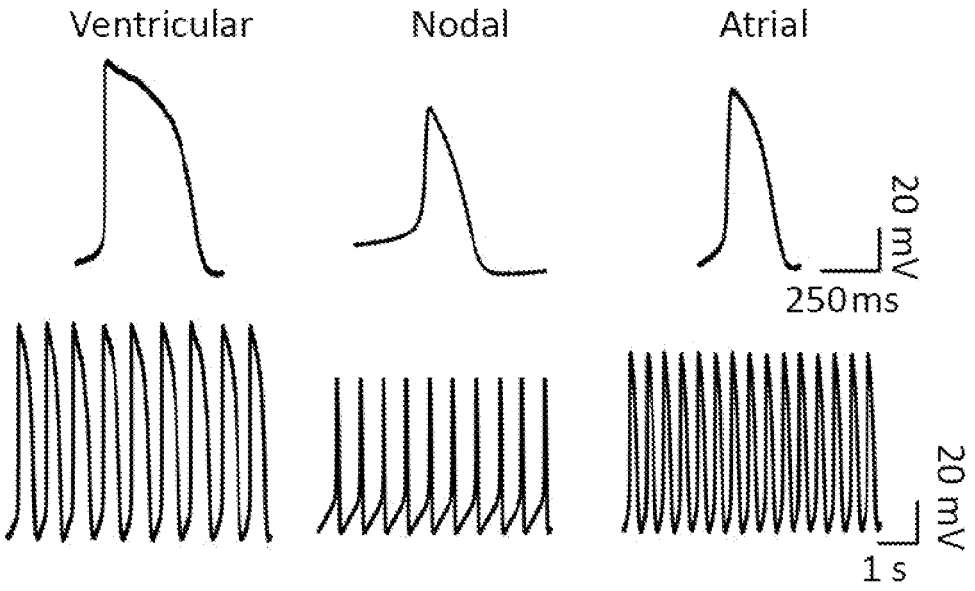


FIGURE 2 CONTINUED

D

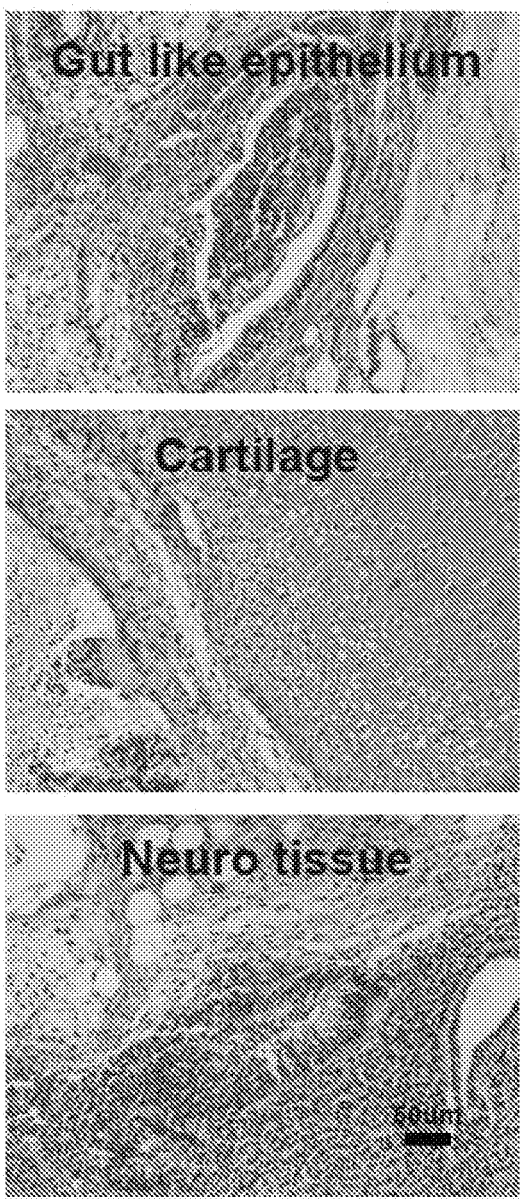


FIGURE 2 CONTINUED

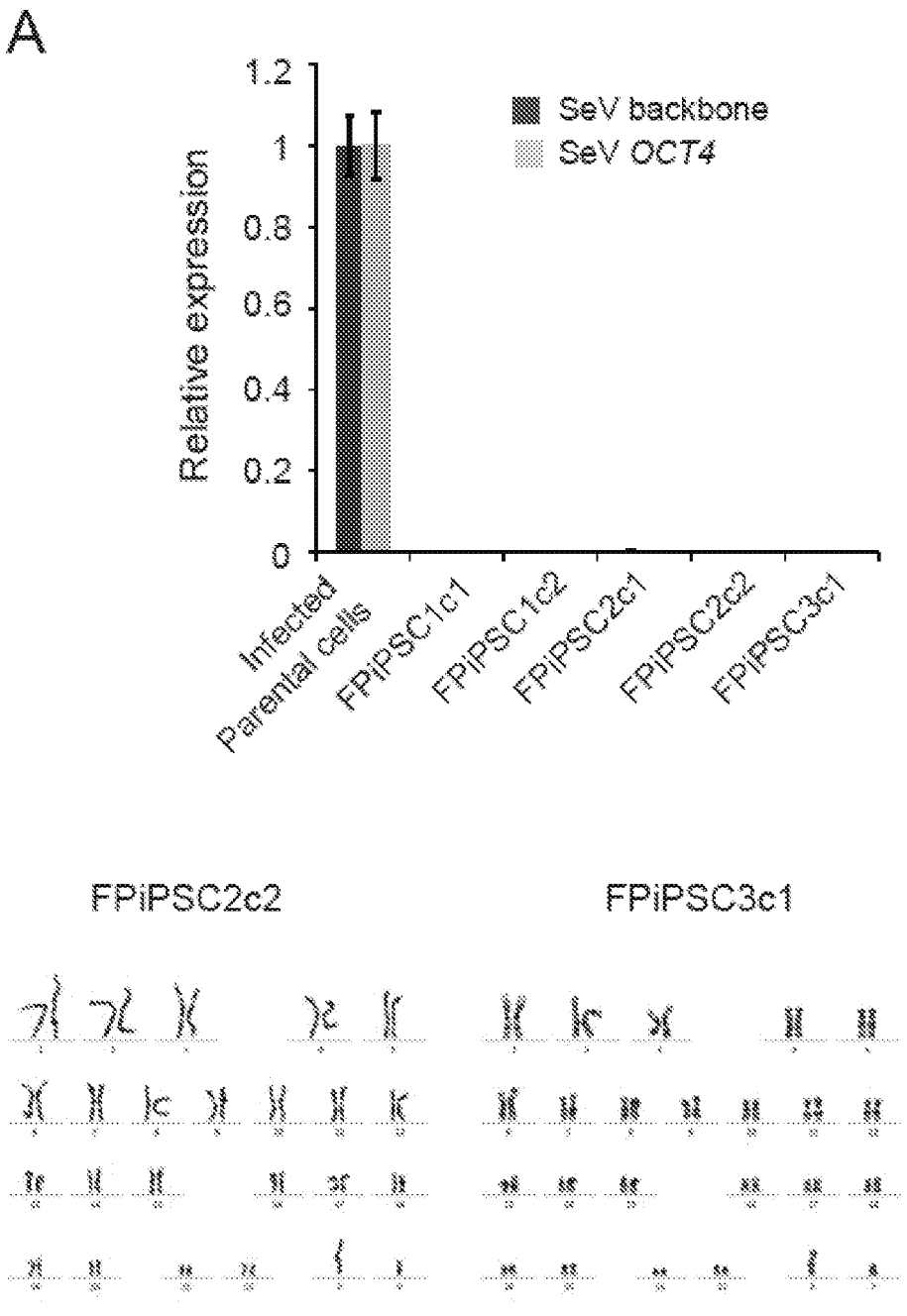

A
Relative expression
1.2
1
0.8
0.6
0.4
0.2
0
SeV backbone
SeV OCT4
Infected Parental cells
FPiPSC1c1
FPiPSC1c2
FPiPSC2c1
FPiPSC2c2
FPiPSC3c1
B
FPiPSC2c2
FPiPSC3c1

FIGURE 3

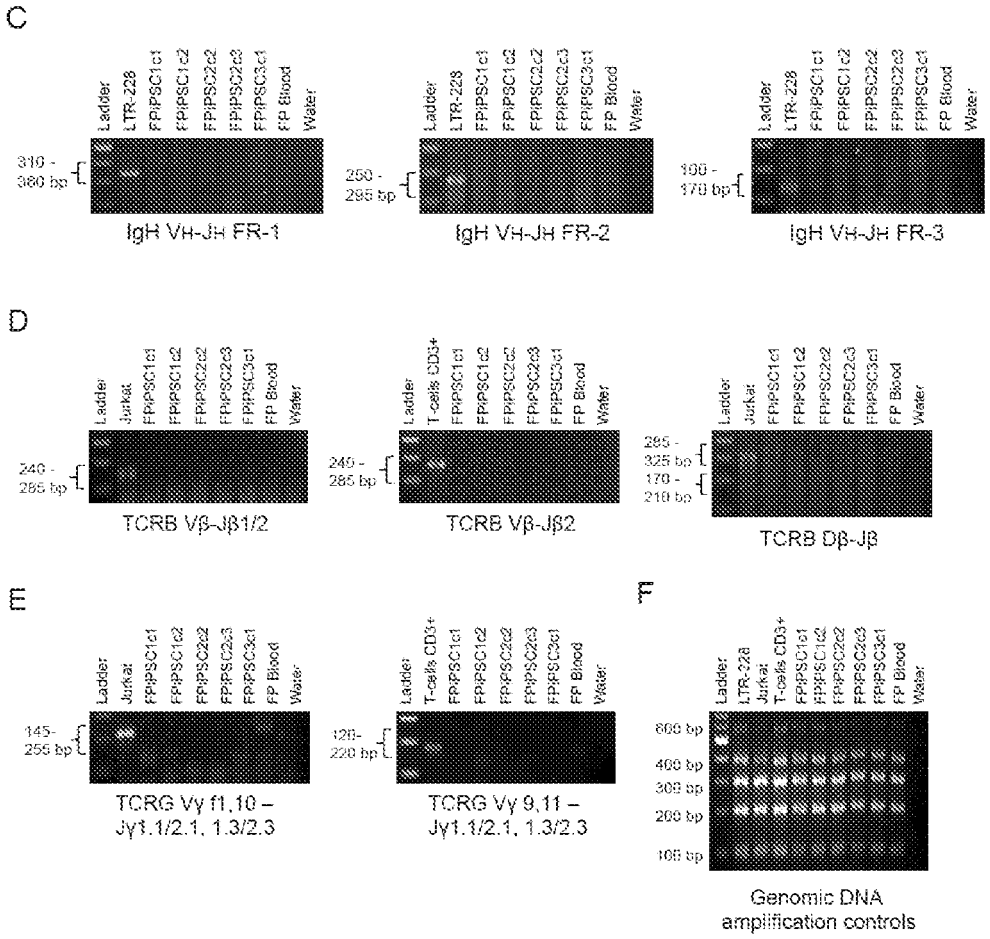


FIGURE 3 CONTINUED

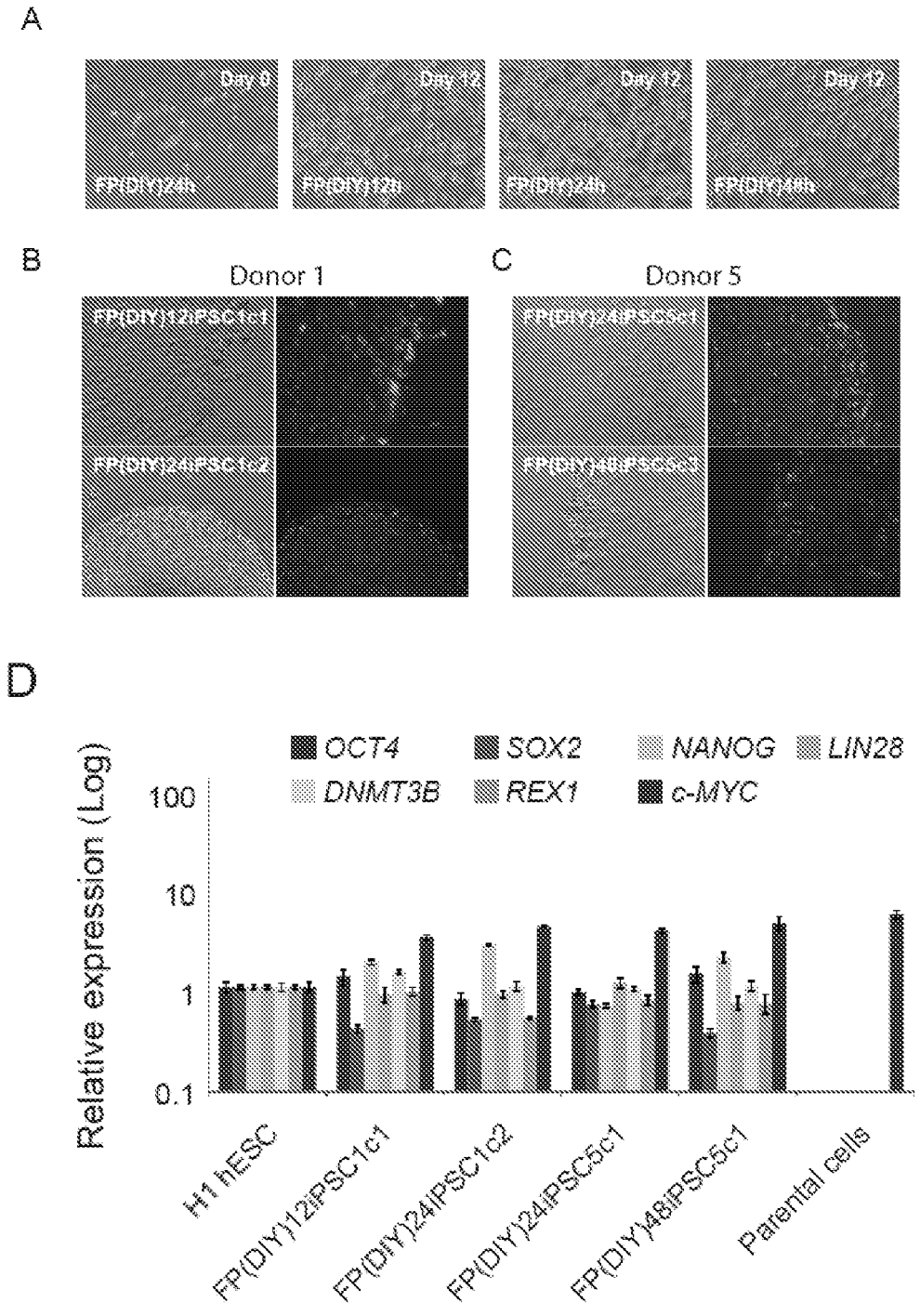
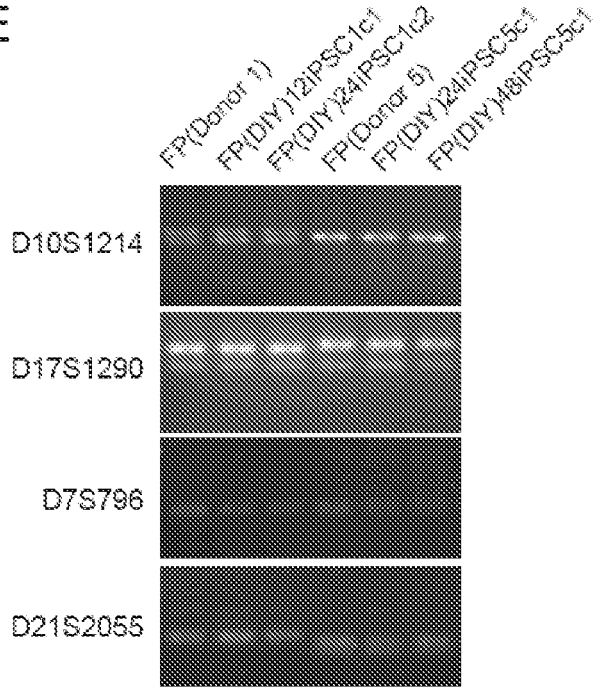

A
Day 0
Day 12
Day 12
Day 12
FP(DIY)24h
FP(DIY)12h
FP(DIY)24h
FP(DIY)48h
B
Donor 1
FP(DIY)12iPSC1c1
FP(DIY)24iPSC1c2
C
Donor 5
FP(DIY)24iPSC5c1
FP(DIY)48iPSC5c1
D
OCT4
SOX2
NANOG
LIN28
DNMT3B
REX1
c-MYC
Relative expression (Log)
100
10
1
0.1
H1 hESC
FP(DIY)12iPSC1c1
FP(DIY)24iPSC1c2
FP(DIY)24iPSC5c1
FP(DIY)48iPSC5c1
Parental cells

FIGURE 4

E



F

Donor	Age	Source	Starting Vol (ml)	TRA-1-60+ Colonies	Yield (colonies/ml)
1	36	VP	500	4	16
		VP	250	4	8
		FP	10	2	200
		FP(DIY)12h	10	1	100
		FP(DIY)24h	10	2	200
2	19	FP	10	6	600
3	27	FP	10	1	100
5	26	FP(DIY)24h	10	2	200
		FP(DIY)48h	10	3	300

FIGURE 4 CONTINUED

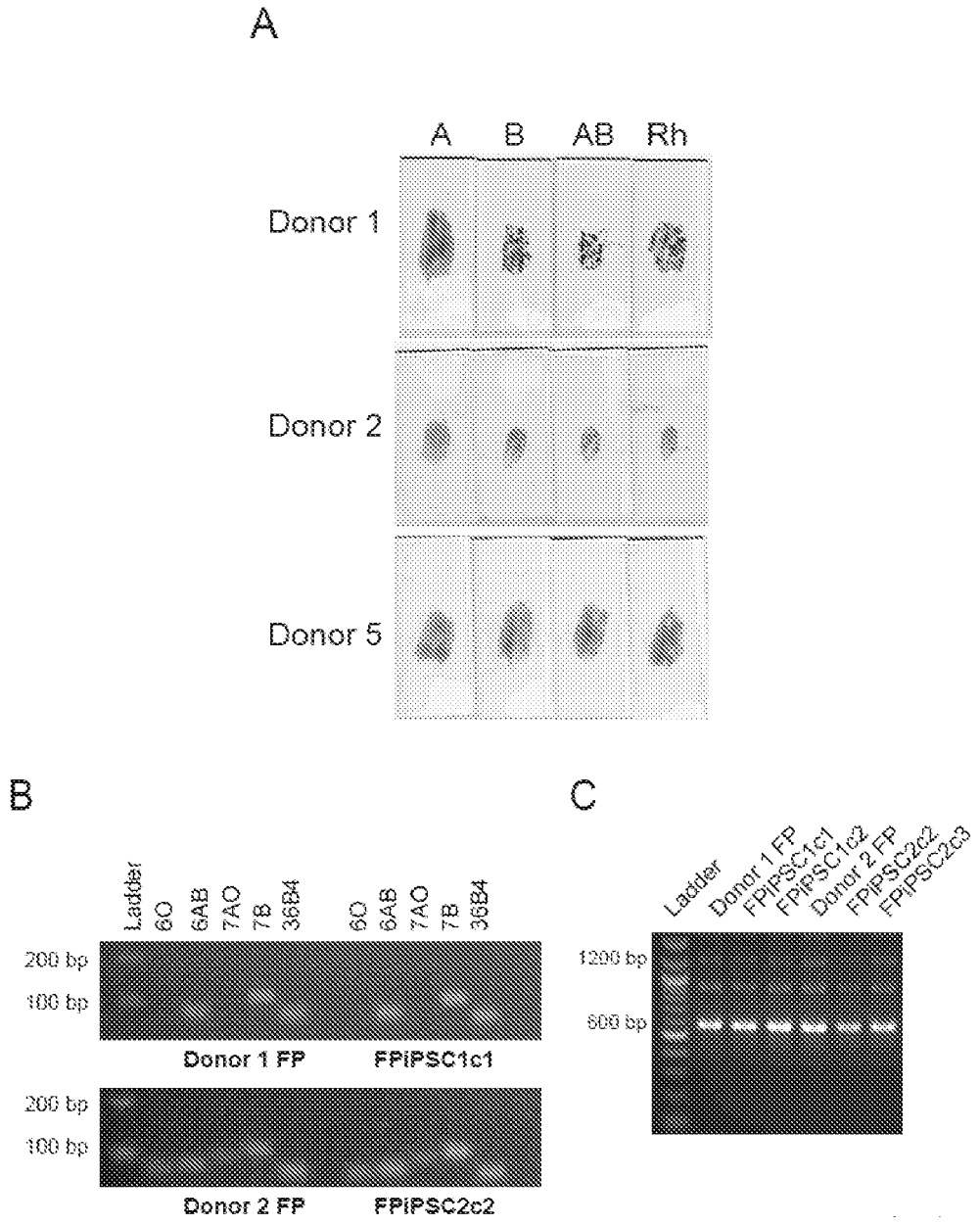
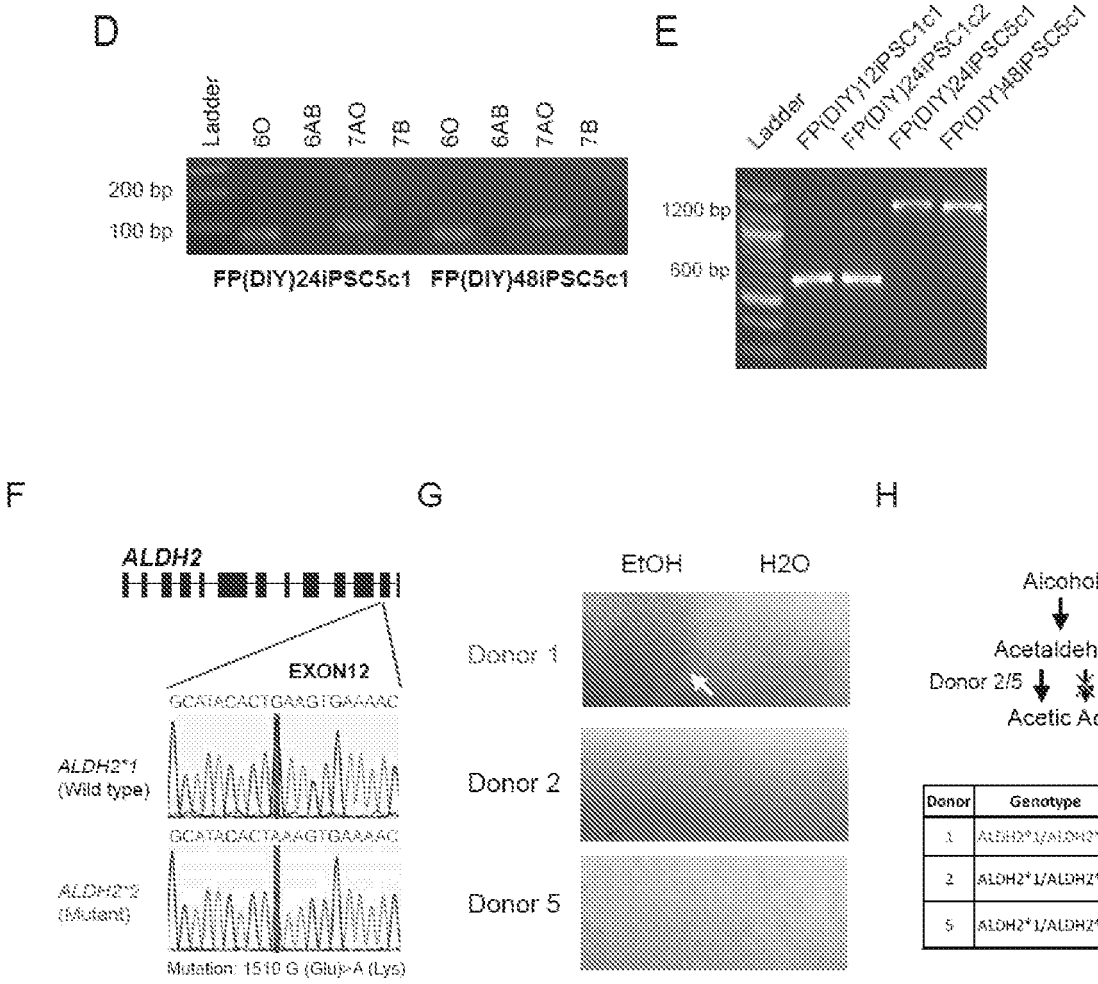

A
A
B
AB
Rh
Donor 1
Donor 2
Donor 5
B
Ladder
6O
6AB
7AO
7B
36B4
6O
6AB
7AO
7B
36B4
200 bp
100 bp
Donor 1 FP
FPiPSC1c1
200 bp
100 bp
Donor 2 FP
FPiPSC2c2
C
Ladder
Donor 1 FP
FPiPSC1c1
FPiPSC1c2
Donor 2 FP
FPiPSC2c2
FPiPSC2c3
1200 bp
600 bp

FIGURE 5



Donor	Genotype	Phenotype
1	ALDH2*1/ALDH2*2	Intolerance
2	ALDH2*1/ALDH2*1	Tolerance
5	ALDH2*1/ALDH2*1	Tolerance

FIGURE 5 CONTINUED

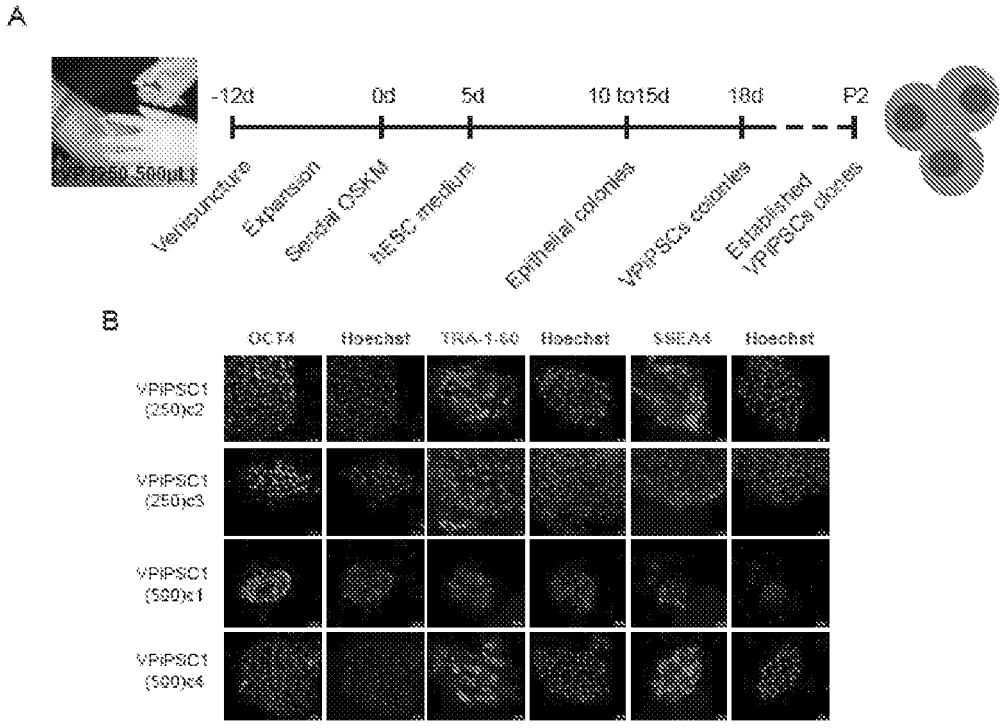
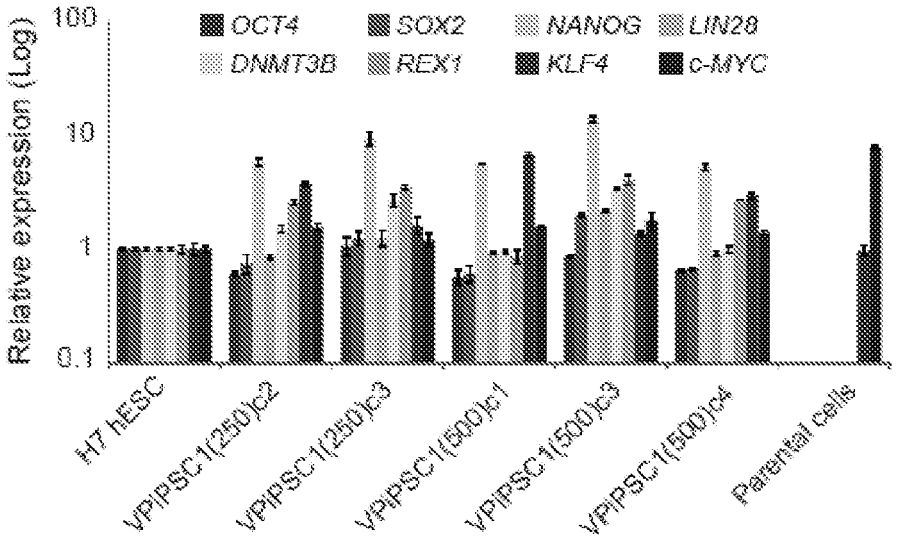

A
-12d
0d
5d
10 to15d
18d
P2
Vemurafenib
Expansion
Sendai CSKM
hESC medium
Epithelial colonies
VPiPSCs colonies
Established VPiPSCs clones
B
OCT4
Hoechst
TRA-1-60
Hoechst
SSEA4
Hoechst
VPiPSC1 (250)c2
VPiPSC1 (250)c3
VPiPSC1 (500)c1
VPiPSC1 (500)c4

FIGURE 6

C



D

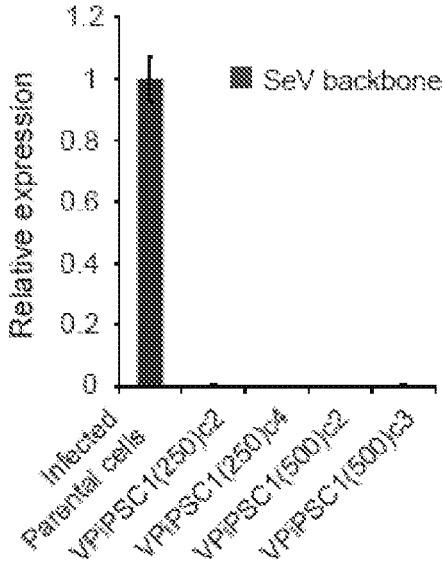


FIGURE 6 CONTINUED

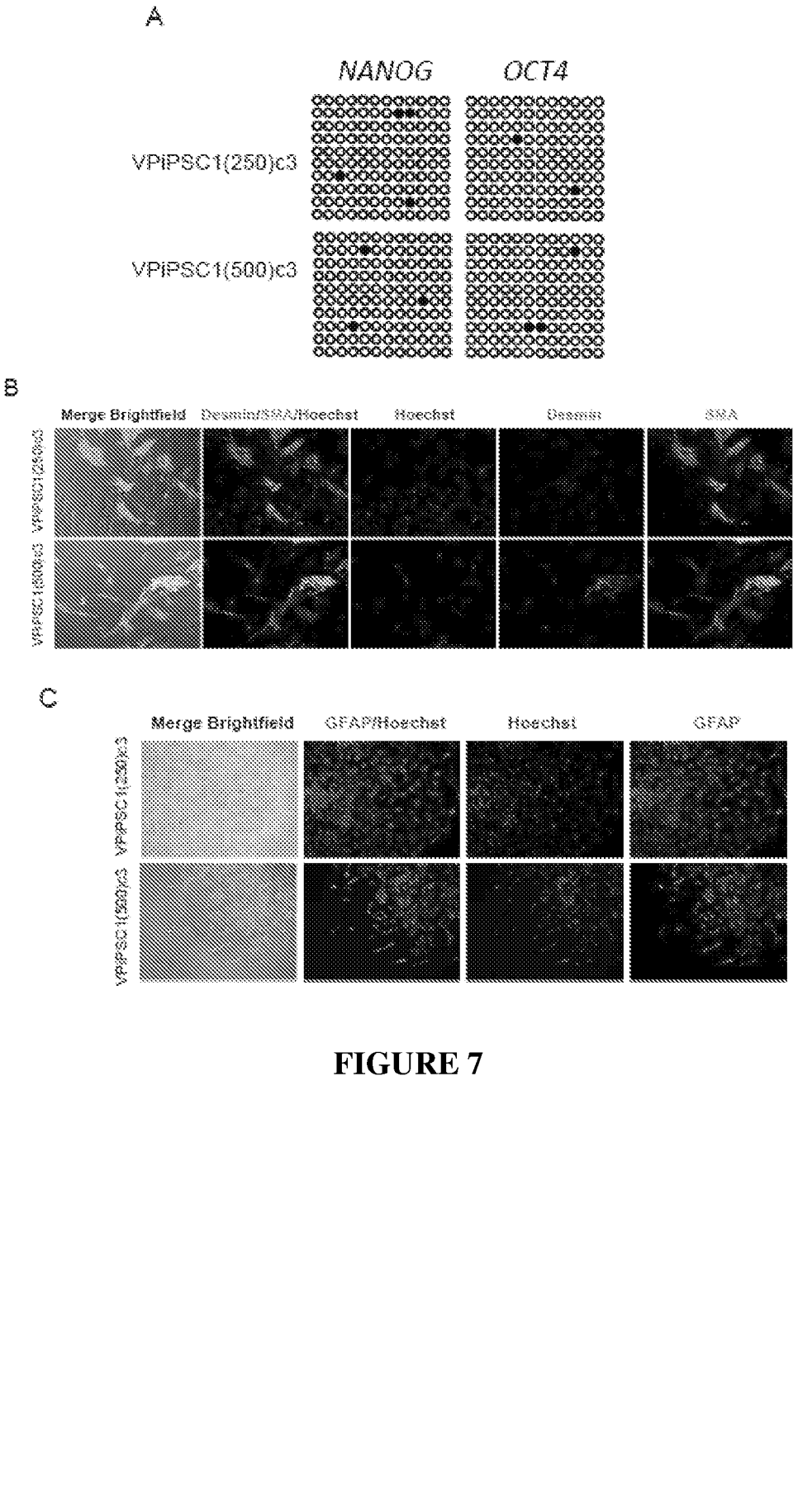
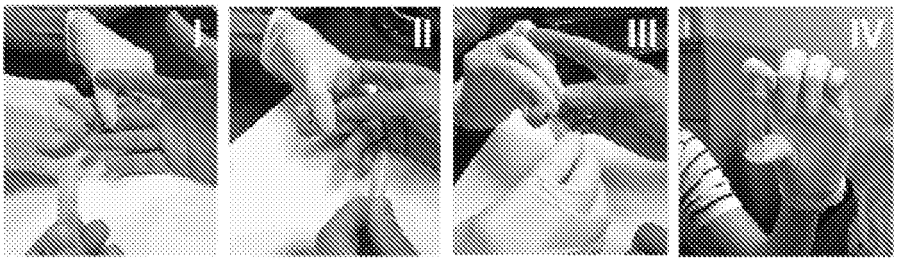
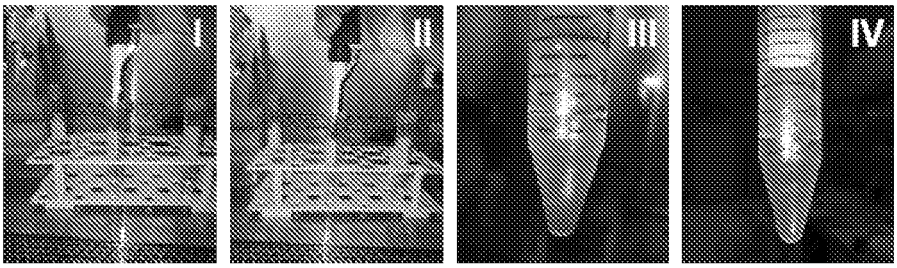

A
NANOG
OCT4
VPiPSC1(250)c3
VPiPSC1(500)c3
B
Merge Brightfield
Desmin/SMA/Hoechst
Hoechst
Desmin
SMA
C
Merge Brightfield
GFAP/Hoechst
Hoechst
GFAP

FIGURE 7

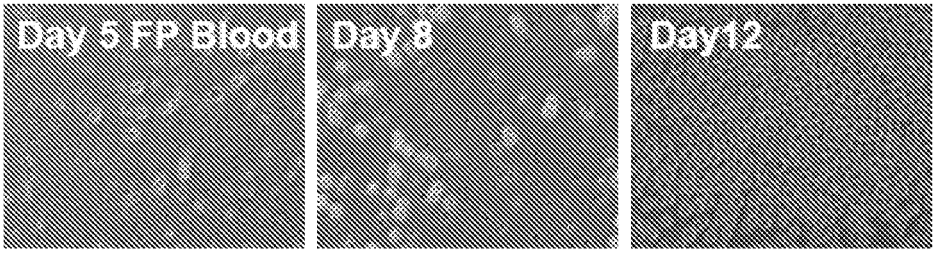
A



B



C



D

Markers	D0 (%)	D8 (%)	D15 (%)
CD3	67.7	20.7	0.4
CD19	2.7	13.0	0.4
CD34		0.3	0.1
CD71	2.7	69.9	98.5

FIGURE 8

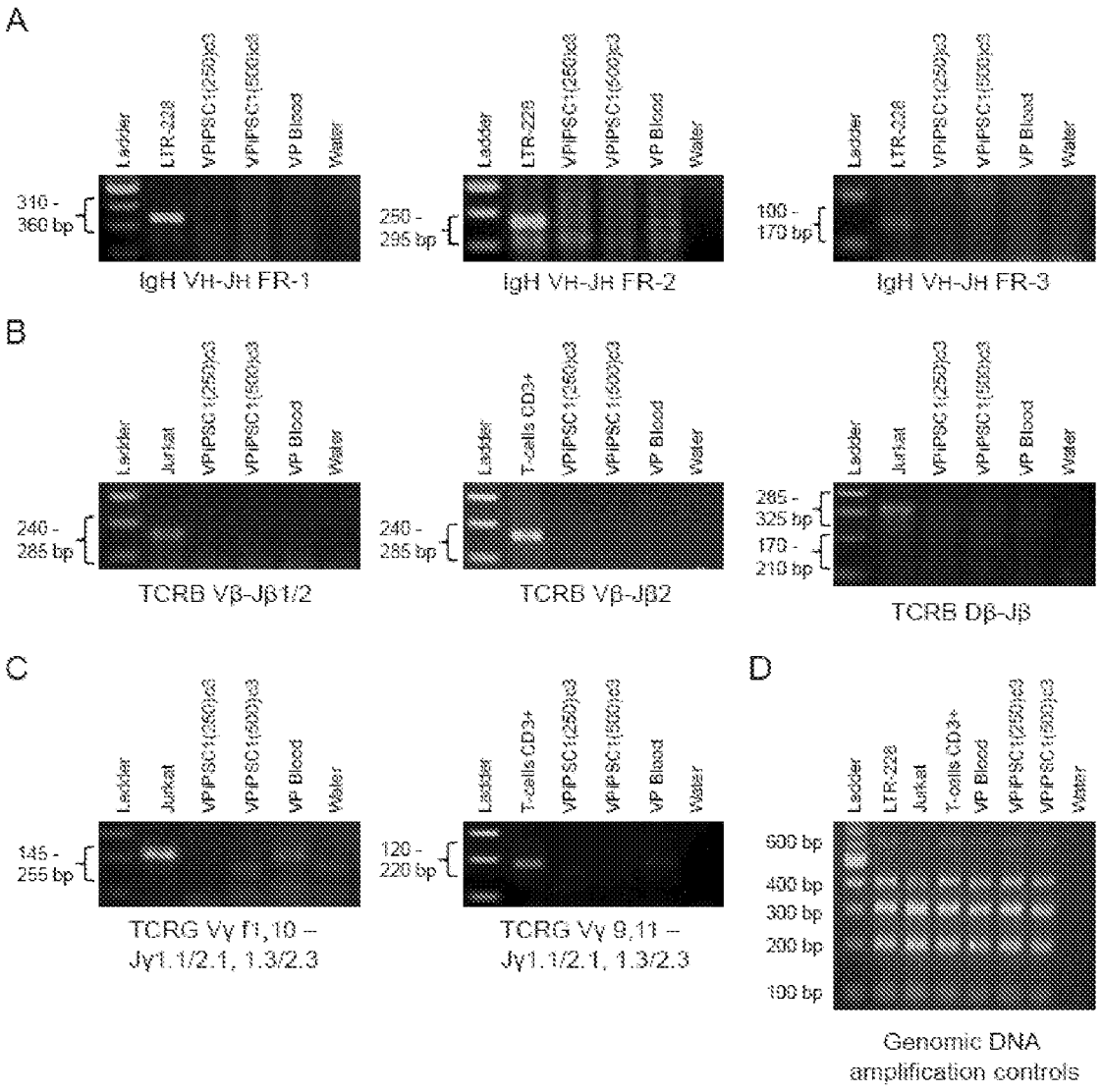

A
Ladder
LTR-228
VPiPSC1(250)c3
VPiPSC1(500)c3
VP Blood
Water
310 - 360 bp
IgH VH-JH FR-1
250 - 295 bp
IgH VH-JH FR-2
100 - 170 bp
IgH VH-JH FR-3
B
Ladder
Jurkat
T-cells CD3+
VP Blood
Water
240 - 285 bp
TCRB Vβ-Jβ1/2
TCRB Vβ-Jβ2
285 - 325 bp
170 - 210 bp
TCRB Dβ-Jβ
C
145 - 255 bp
TCRG Vγ f1,10 – Jγ1.1/2.1, 1.3/2.3
120 - 220 bp
TCRG Vγ 9,11 – Jγ1.1/2.1, 1.3/2.3
D
500 bp
400 bp
300 bp
200 bp
100 bp
Genomic DNA amplification controls

FIGURE 9

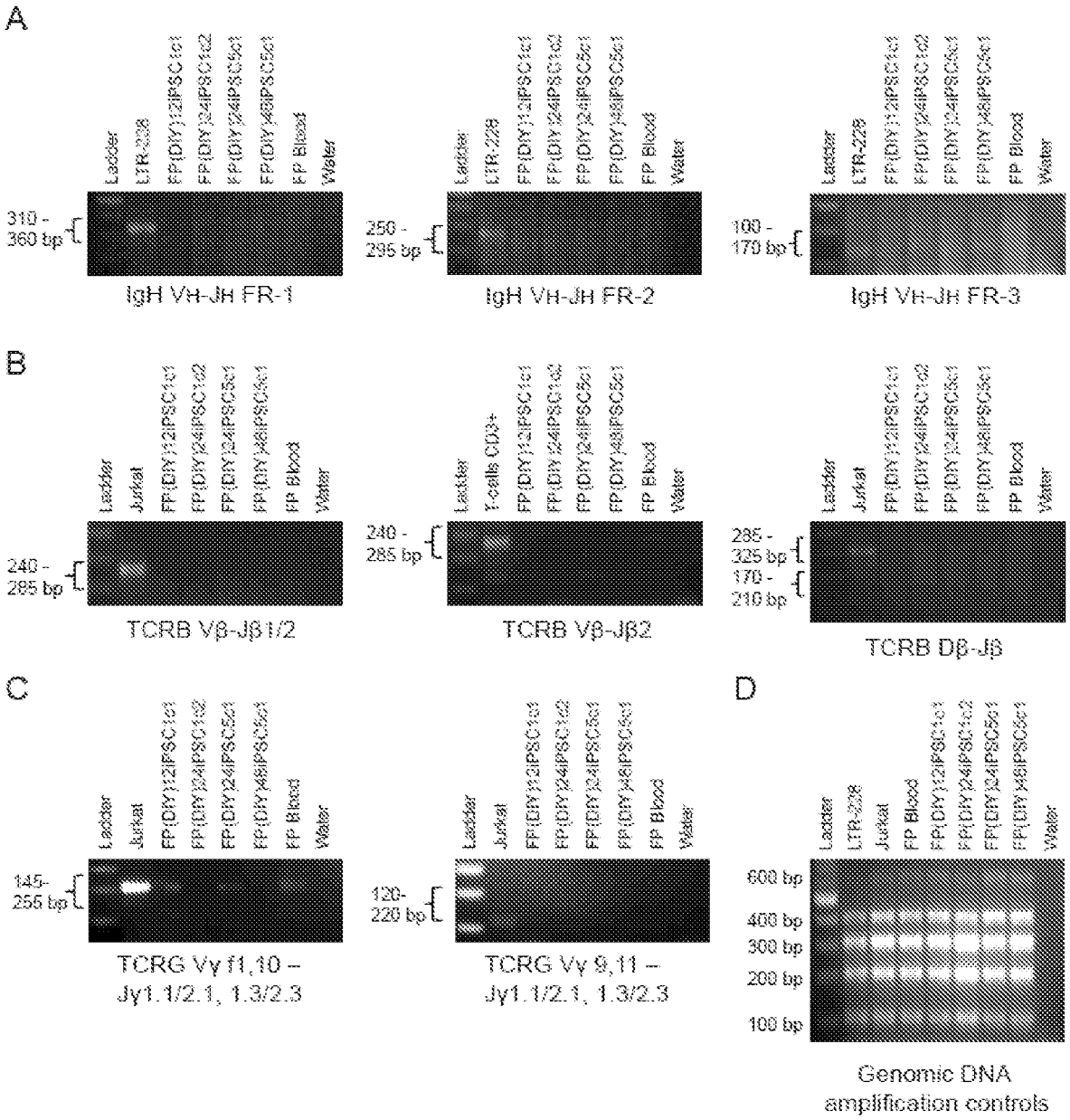

A
Ladder
LTR-228
FP-iDMY112iPSC1c1
FP-iDMY124iPSC1c2
FP-iDMY124iPSC5c1
FP-iDMY146iPSC5c1
FP Blood
Water
310 - 360 bp
IgH VH-JH FR-1
250 - 295 bp
IgH VH-JH FR-2
100 - 170 bp
IgH VH-JH FR-3
B
Ladder
Jurkat
T-cells CD3+
240 - 285 bp
TCRB Vβ-Jβ1/2
TCRB Vβ-Jβ2
285 - 325 bp
170 - 210 bp
TCRB Dβ-Jβ
C
145- 255 bp
TCRG Vγ f1,10 – Jγ1.1/2.1, 1.3/2.3
120- 220 bp
TCRG Vγ 9,11 – Jγ1.1/2.1, 1.3/2.3
D
600 bp
400 bp
300 bp
200 bp
100 bp
Genomic DNA amplification controls

FIGURE 10

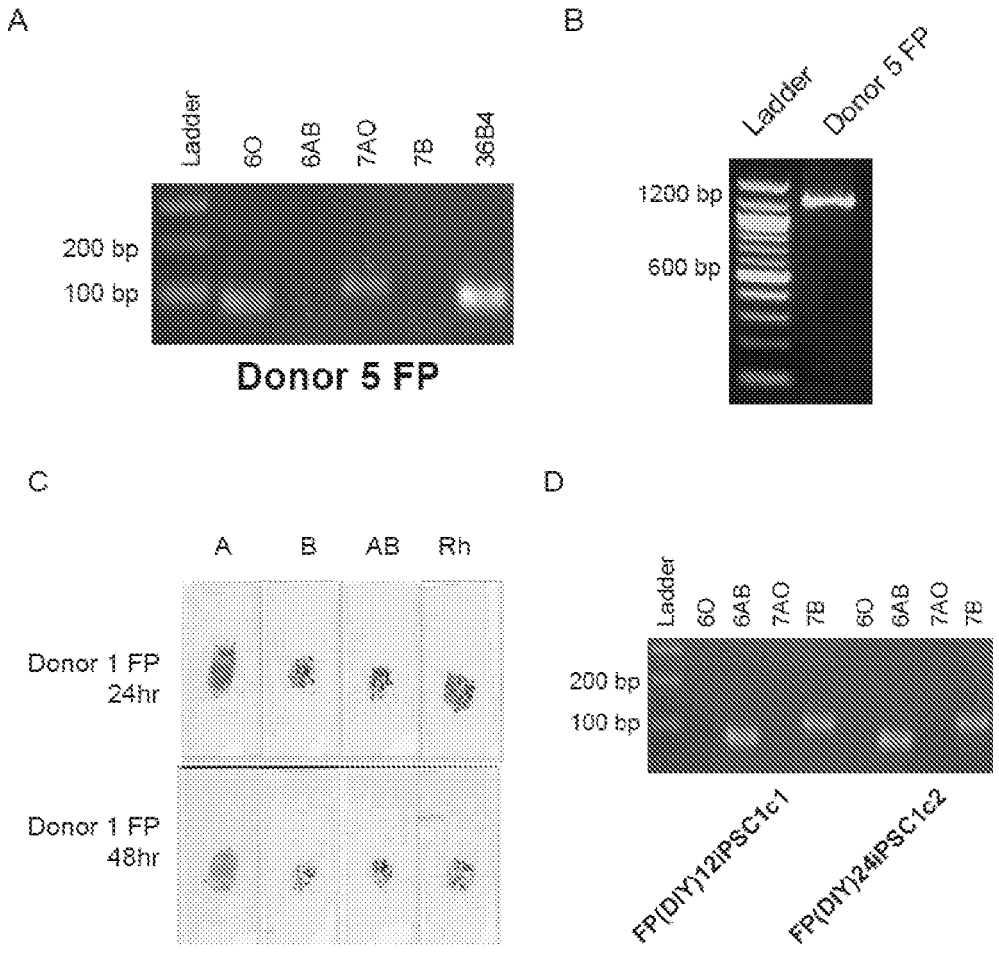
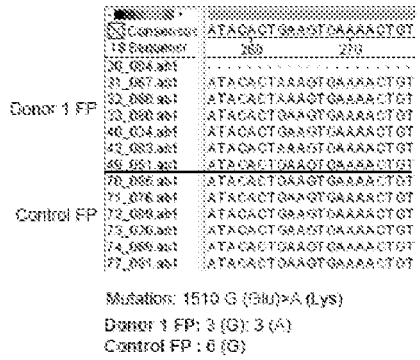
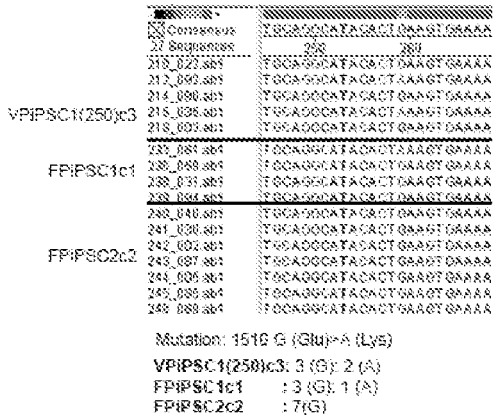

A
Ladder
6O
6AB
7AO
7B
36B4
200 bp
100 bp
Donor 5 FP
B
Ladder
Donor 5 FP
1200 bp
600 bp
C
A
B
AB
Rh
Donor 1 FP 24hr
Donor 1 FP 48hr
D
Ladder
6O
6AB
7AO
7B
6O
6AB
7AO
7B
200 bp
100 bp
FP(DIY)12iPSC1c1
FP(DIY)24iPSC1c2

FIGURE 11

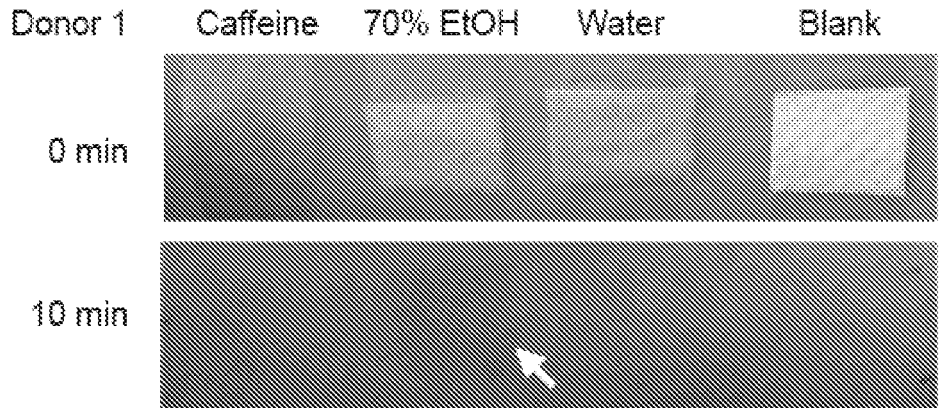
A



B



C



D

Donor	Clones	ADH2	ADH3	ALDH2
1	VPiPSC1(250)c3	Heterozygote	Heterozygote	Heterozygote
1	VPiPSC1(500)c3	Heterozygote	Heterozygote	Heterozygote
1	FPiPSC1c1	Heterozygote	Heterozygote	Heterozygote
2	FPiPSC2c2	Mutant	Normal	Normal
3	FPiPSC3c1	Mutant	Normal	Normal
5	FP(DIY)24iPSC5c1	Normal	Heterozygote	Normal

FIGURE 12

Table S1: Fingerprint analysis of iPSC clones

Locus	FP cells (Donor 1)	VPiPSC1 (250k3	VPiPSC1 (500k4	FPiPSC1c1	FP cells (Donor 2)	FPiPSC2c2	FP cells (Donor 3)	FPiPSC3c1
D3S1179	12, 15	12, 15	12, 15	12, 15	12, 12	12, 12	11, 17	11, 17
D21S11	28, 30	28, 30	28, 30	28, 30	30, 33.2	30, 33.2	31.2, 32.2	31.2, 32.2
D7S820	8, 11	8, 11	8, 11	8, 11	10, 12	10, 13	7, 12	7, 12
CSF1PO	12, 13	12, 13	12, 13	12, 13	10, 12	10, 12	10, 11	10, 11
D3S1358	14, 16	14, 16	14, 16	14, 16	13, 14	13, 14	16, 16	16, 16
TH01	8, 8	8, 8	8, 8	8, 9	9, 9	9, 9	8, 9	8, 9
D13S317	9, 11	9, 11	9, 11	9, 11	11, 12	11, 12	8, 11	8, 11
D16S539	11, 14	11, 14	11, 14	11, 14	9, 10	9, 10	8, 9	8, 9
D2S1338	19, 24	19, 24	19, 24	19, 24	17, 24	17, 24	17, 19	17, 19
D19S433	13, 14	13, 14	13, 14	13, 14	14, 15.2	14, 15.2	14.2, 15	14.2, 15
vWA	14, 17	14, 17	14, 17	14, 17	16, 16	16, 16	14, 14	14, 14
TPOX	8, 11	8, 11	8, 11	8, 11	8, 8	8, 8	8, 8	8, 8
D18S51	16, 18	16, 18	16, 18	16, 16	19, 20	19, 20	12, 15	12, 15
Amelogenin	X, Y	X, Y	X, Y	X, Y	X, Y	X, Y	X, Y	X, Y
D5S818	11, 12	11, 12	11, 12	11, 12	12, 13	12, 13	11, 13	11, 13
FGA	21, 25	21, 25	21, 25	21, 25	22, 23	22, 23	19, 24	19, 24

FIGURE 13

Table S2: Summary table of Characterizations on iPSC clones

Donor	Source	Clones	IF	qPCR	IgG/TCR VDJ	DNA methylation	EB Differentiation	Teratoma	Microarray	DNA Fingerprinting	Karyotyping	ABCA1	ALDH/ADH2 /ADH2
1	VP (250k)	VPiPSC1#250k1	Y	Y	Y								
		VPiPSC1#250k2	Y	Y	Y							Y	
		VPiPSC1#250k3	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
		VPiPSC1#250k4		Y	Y							Y	
	VP (500k)	VPiPSC1#500k1	Y	Y	Y								
		VPiPSC1#500k2	Y	Y	Y								
		VPiPSC1#500k3		Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
		VPiPSC1#500k4	Y	Y	Y							Y	
	FP	FPiPSC1c1	Y	Y	Y		Y		Y	Y		Y	Y
		FPiPSC1c2	Y	Y	Y				Y			Y	
	FP(DMY1/2)	FP(DMY1/2)PSC1c1	Y	Y	Y					Y		Y	
	FP(DMY2/4)	FP(DMY2/4)PSC1c1	Y										
		FP(DMY2/4)PSC1c2	Y	Y	Y					Y		Y	
2	FP	FPiPSC2c1	Y	Y	Y							Y	
		FPiPSC2c2	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
		FPiPSC2c3	Y	Y	Y				Y			Y	
		FPiPSC2c4	Y	Y	Y							Y	Y
		FPiPSC2c5	Y		Y								
		FPiPSC2c6	Y	Y	Y								
3	FP	FPiPSC3c1	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	
5	FP(DMY2/4)	FP(DMY2/4)PSC5c1	Y	Y	Y					Y		Y	
		FP(DMY2/4)PSC5c2	Y										
	FP(DMY4/8)	FP(DMY4/8)PSC5c1	Y	Y	Y					Y		Y	
		FP(DMY4/8)PSC5c2	Y										
		FP(DMY4/8)PSC5c3	Y										

FIGURE 14

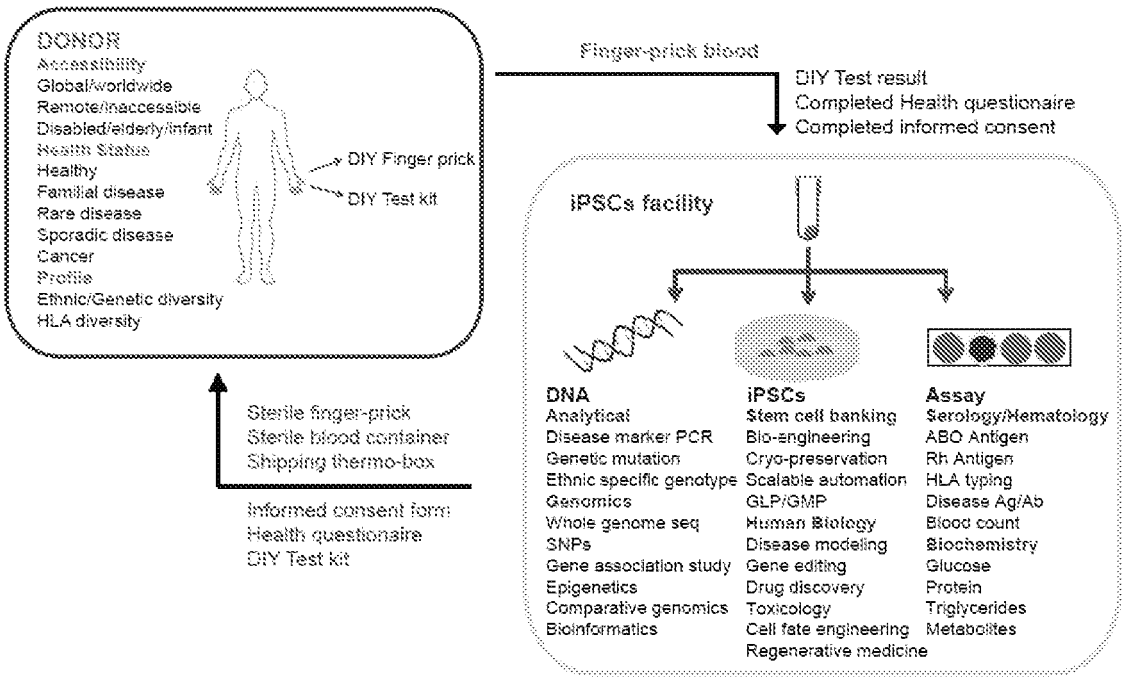

DONOR
Accessibility
Global/worldwide
Remote/inaccessible
Disabled/elderly/infant
Health Status
Healthy
Familial disease
Rare disease
Sporadic disease
Cancer
Profile
Ethnic/Genetic diversity
HLA diversity
DIY Finger prick
DIY Test kit
Finger-prick blood
DIY Test result
Completed Health questionaire
Completed informed consent
iPSCs facility
Sterile finger-prick
Sterile blood container
Shipping thermo-box
Informed consent form
Health questionaire
DIY Test kit
DNA
Analytical
Disease marker PCR
Genetic mutation
Ethnic specific genotype
Genomics
Whole genome seq
SNPs
Gene association study
Epigenetics
Comparative genomics
Bioinformatics
iPSCs
Stem cell banking
Bio-engineering
Cryo-preservation
Scalable automation
GLP/GMP
Human Biology
Disease modeling
Gene editing
Drug discovery
Toxicology
Cell fate engineering
Regenerative medicine
Assay
Serology/Hematology
ABO Antigen
Rh Antigen
HLA typing
Disease Ag/Ab
Blood count
Biochemistry
Glucose
Protein
Triglycerides
Metabolites

FIGURE 15