

**Figure S1a: Morphology of baboon iPSCs grown on a MEF feeder layer : 2.5x(top) and 5x (bottom) magnification phase contrast micrograph illustrating the typical morphology of baboon iPSCs.**

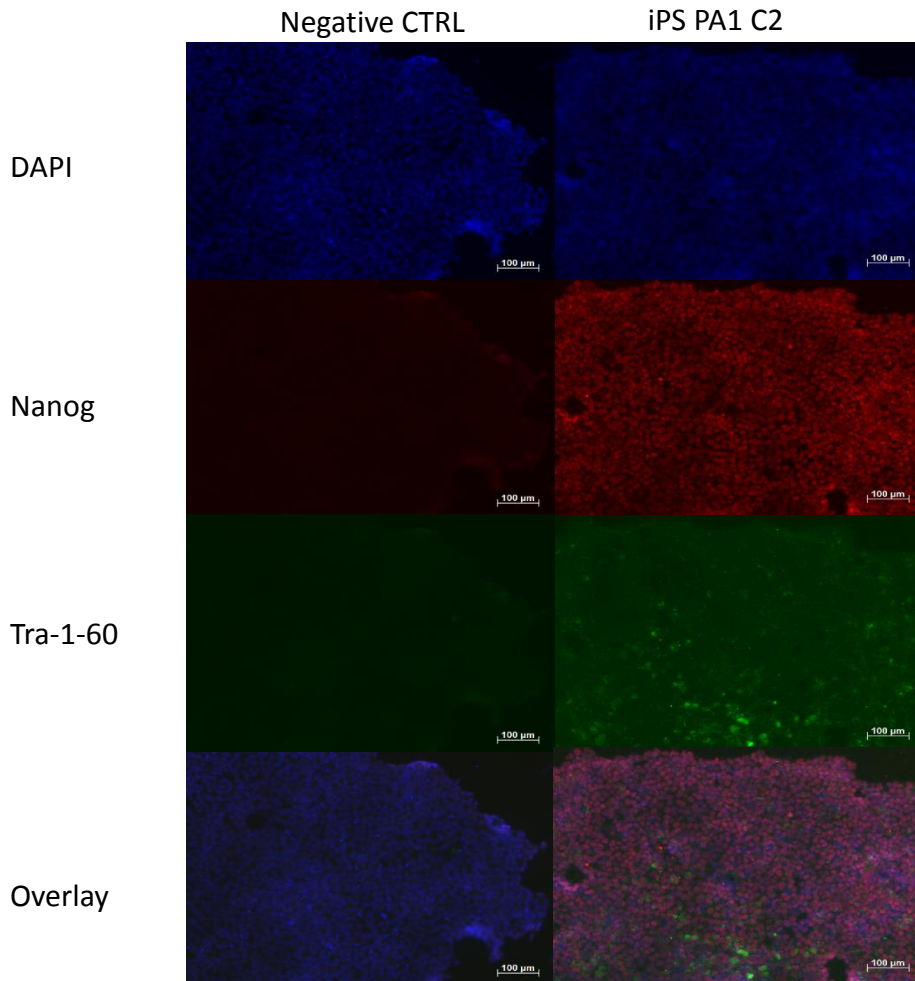
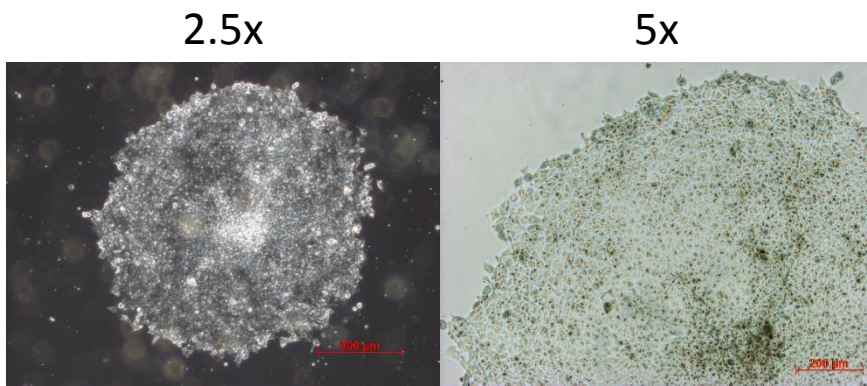
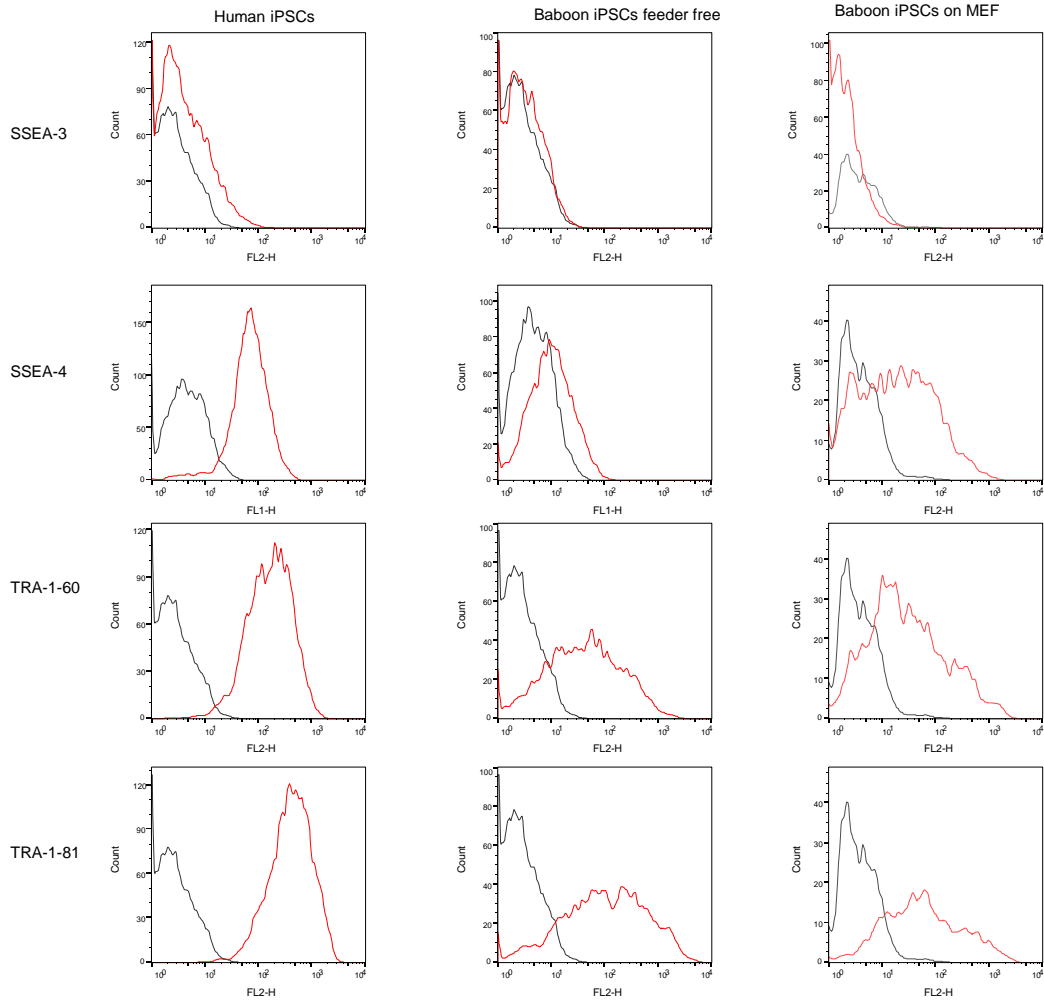
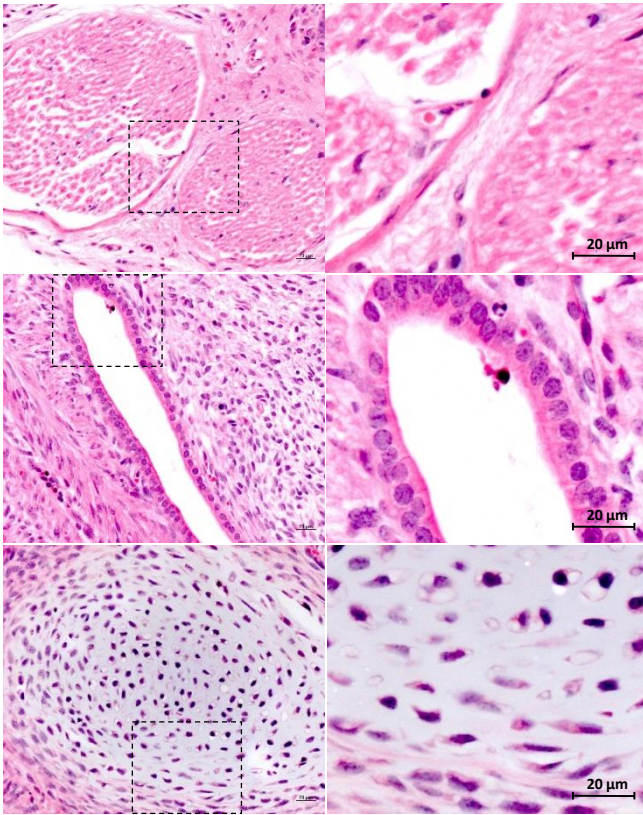


Figure S1b: **Morphology of baboon iPSCs grown on E8/vitronectin** Top: Phase contrast micrographs of baboon iPSCs grown on vitronectin .Bottom: immuno staining of baboon iPSCs grown on vitronectin and stained with DAPI, Nanog (Alexa-fluor 555) and Tra-1-60 (Alexa-fluor 488). All cells express nanog but only a subset express Tra-1-60.



**Figure S2:FACS analysis of human and baboon iPSCs grown in chemically-defined-conditions.** Black histogram: isotype controls; red histograms: baboon or human iPSCs. Baboon iPSCs express pluripotency markers albeit at lower levels than human iPSCs.

a



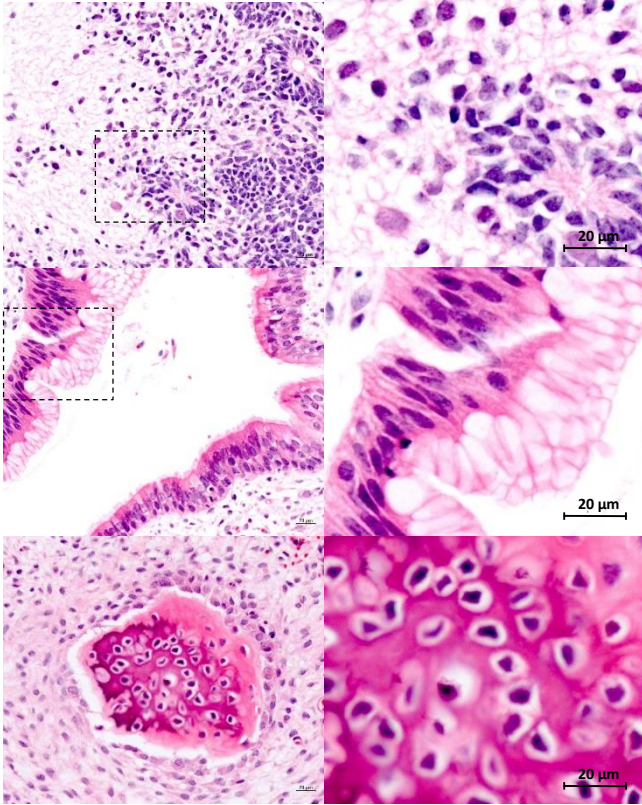
Ectoderm – peripheral nerve

Endoderm – glandular epithelium

Mesoderm - cartilage

**Figure S3a-c: Teratoma analysis.**  $1 \times 10^6$  baboon iPSCs were injected intramuscularly into the hind leg of a 6–8 week old NSG mouse. Six weeks later, tumors were fixed in 10% formalin, paraffin embedded, sectioned and stained with hematoxylin/eosin. Results from multiple tumors obtained from multiple iPSCs are shown. Structures originating from all three germ layers were found in most tumors analyzed

b



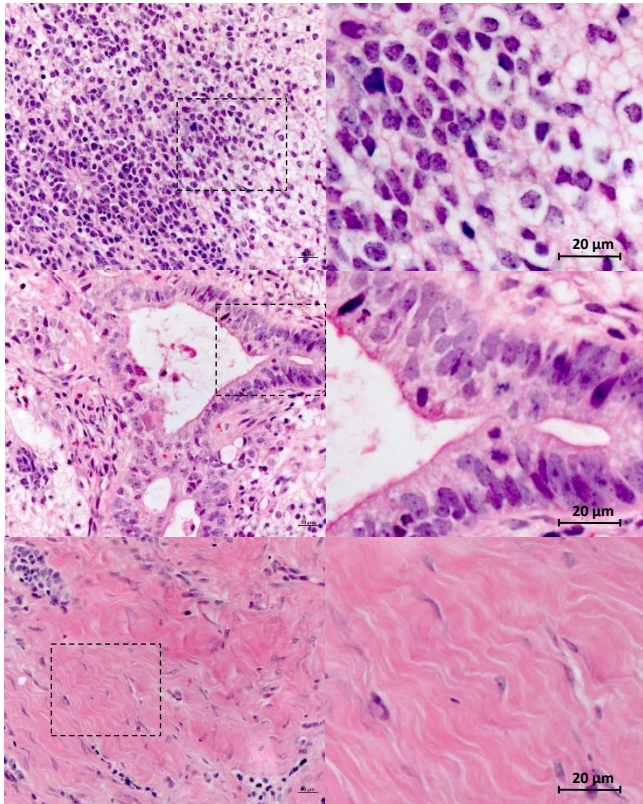
Ectoderm – nervous tissue

Endoderm - respiratory epithelium

Mesoderm – bone from a cartilage model

Figure S3b

C

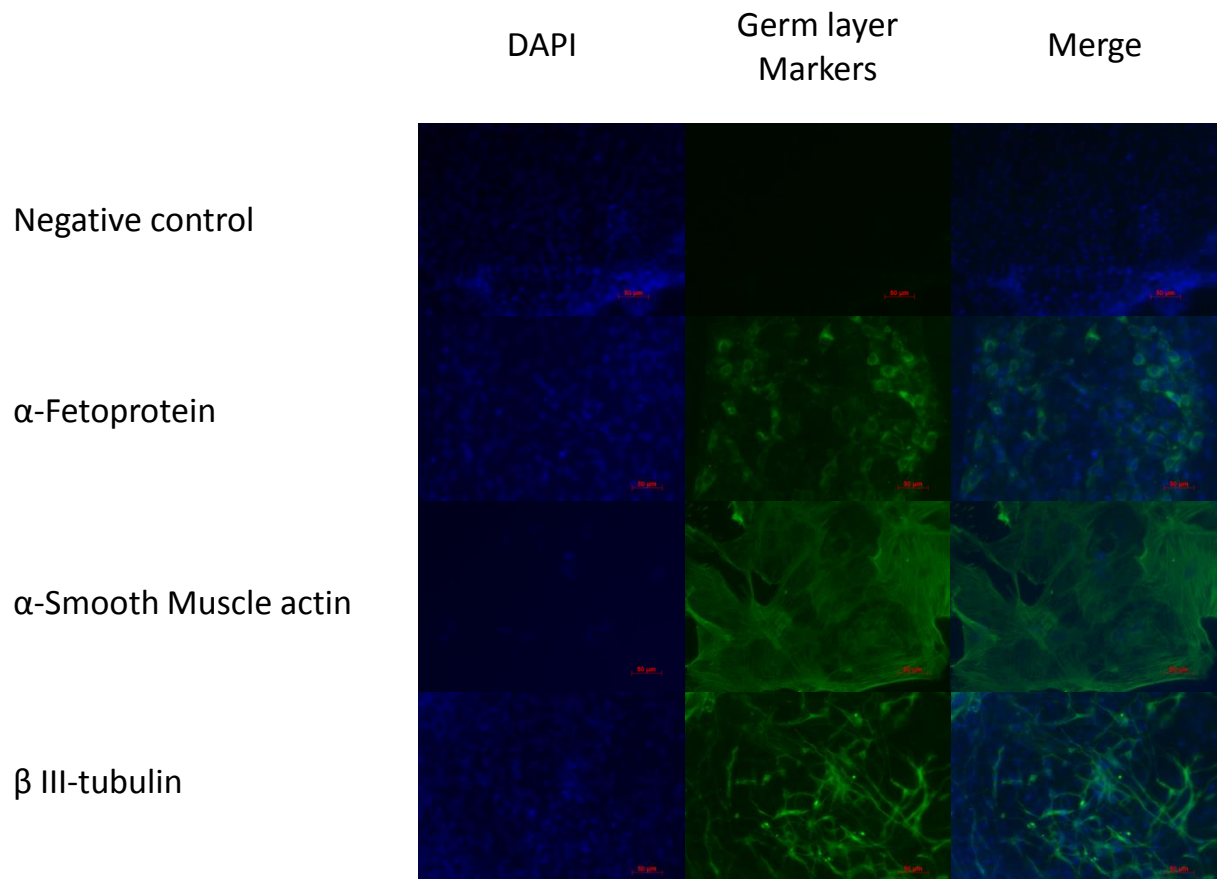


Ectoderm – nervous tissue

Endoderm – respiratory epithelium

Endo –Meso – fibrous connective tissue

Figure S3c



**Figure S4: Embryoid bodies.** Embryoid bodies were formed using the hanging drop method in 20% FBS for 10 days. Cells were fixed with paraformaldehyde, stained with indicated antibodies and counterstained with DAPI. Cells expressing  $\alpha$ -fetoprotein(endoderm),  $\alpha$ -smooth muscle actin (mesoderm) and  $\beta$ -III-tubulin were detectable in 10-day EBs. Baboon iPSCs maintained in chemically-defined conditions are pluripotent

## Supplementary Tables

<b>Reagent</b>	<b>Provider</b>	<b>Catalog Number</b>
IMDM with 1mM Glutamine	Biochrom	FG0465
RPMI 1640 with 1mM Glutamine	Gibco	61870
StemSpan SFEM	Stemcell Technologies	09650
Methyl- $\beta$ -Cyclodextrin	Sigma	C4555
Trolox	Sigma	238813
Insulin	Sigma	I9218
Chemically defined Lipids 200X	Gibco	11905
Ethanolamine	Sigma	E0135
BSA	Gibco	From Kit A1000701
$\beta$ -mercapto-ethanol 1000X	Gibco	21985
L-ascorbic acid	Sigma	A8960
Holo-Transferrin	R&D Systems/Biotechne	2914-HT
Optiferrin	FisherScience	NC9954311
FeIII-EDTA	Sigma	E6760
BMP4	R&D Systems/Biotechne	314-BP
VEGF165	Peprtech	100-20
Wnt3A	R&D Systems/Biotechne	5036-WN
Wnt5A	R&D Systems/Biotechne	645-WN
Activin A	Peprtech	120-14
GSK3 $\beta$ Inhibitor VIII	Calbiochem/EMD Millipore	361549
aFGF	Peprtech	100-17A
bFGF	Peprtech	100-18B
SCF	Peprtech	300-07
$\beta$ -Estradiol	Sigma	E2758
TPO	Peprtech	300-18
IGF1	Alfa Aesar	BT-106
IGF2	Alfa Aesar	BT-107
SB431542	Tocris/Biotechne	1614
UM171	Stemcell Technologies	72912
IBMX	Sigma	I5879
PDGF AB	Peprtech	100-00AB
ANGPTL5	R&D Systems/Biotechne	6675-AN
CCL28	Peprtech	300-57
Heparin	Sigma	H3149
EPO	Amgen	NDC 55513-126-10
Dexamethasone	Sigma	D4902
RU486	Sigma	M8046
Hydrocortisone	Sigma	H0888
FLT3L	Peprtech	300-19
IL3	Peprtech	200-03
GM-CSF	Peprtech	300-03
G-CSF	Peprtech	300-23
TRA-1-81 (PE, mouse IgM)	eBioscience	12-8883-82
TRA-1-60 (PE, mouse IgM)	eBioscience	12-8863-82
SSEA-4 (FITC, mouse IgG3)	BD Pharmingen	560126
SSEA-3 (AF488, rat IgM)	eBioscience	53-8833-73
$\alpha$ -Fetoprotein (mouse IgG1)	R&D Systems	MAB1369
$\alpha$ -smooth Muscle Actin (mouse IgG2a)	R&D Systems	MAB1420
$\beta$ -III Tubulin (mouse IgG2a)	R&D Systems	MAB1195
Goat anti-Mouse IgG (H+L), F(ab') <sub>2</sub> Fragment (Alexa fluor 488)	Cell Signalling Technology	4408S



**Table S1: Reagents**

<b>Culture media and supplements</b>	<p><b>IMIT</b> IMDM with 1mM Glutamine Methyl-<math>\beta</math>- Cyclodextrin 0.1mg/mL Trolox50<math>\mu</math>M Insulin 10<math>\mu</math>g/mL Optiferrin 50<math>\mu</math>g/mL FeIII-EDTA 4<math>\mu</math>M Chemically defined Lipids (1.5X) Ethanolamine</p> <p><b>R6</b> RPMI 1640 L-ascorbic acid 220 uM Insulin 10ug/mL Optiferrin 20 ug/mL FeIII-EDTA 4<math>\mu</math>M Chemically defined Lipids 0.5x</p>	<p><b>S1</b> BMP4 10ng/mL VEGF 165 10ng/mL Wnt3A/5A 5ng/mL each Activin A 5ng/mL Inhibitor VIII 2uM bFGF 10ng/mL</p> <p><b>S2</b> BMP4 20ng/ml VEGF 165 30ng/mL Wnt3A/5A 5ng/mL each Activin A 5ng/mL Inhibitor VIII 2uM bFGF 10ng/mL SCF 20ng/mL <math>\beta</math>-Estradiol 0.4ng/mL</p> <p><b>S3</b> BMP4 20ng/mL VEGF 165 30ng/mL bFGF 20ng/mL SCF 30ng/mL TPO 10ng/mL IGF2 10ng/mL <math>\beta</math>-Estradiol 0.4ng/mL SB431542 3<math>\mu</math>M on day 3 only IBMX 50 <math>\mu</math>M UM171 30nM after day 6 Heparin 5<math>\mu</math>g/mL</p> <p><b>S4</b> VEGF165 5ng/mL bFGF 5ng/mL SCF 15ng/mL TPO 10ng/mL IGF2 10ng/mL IBMX 30 <math>\mu</math>M PDGF AB 5ng/mL ANGPTL5 5ng/mL CCL28 5ng/mL UM171 30nM Heparin 5<math>\mu</math>g/mL</p>	<p><b>SED</b> SCF 100ng/mL EPO 4U/mL IBMX 50 <math>\mu</math>M Dexamethasone 1 <math>\mu</math>M</p> <p><b>SER</b> SCF 50ng/mL EPO 4U/mL RU486 1 <math>\mu</math>M</p> <p><b>SER2</b> SCF 10ng/mL EPO 4U/mL RU486 1 <math>\mu</math>M</p> <p><b>R</b> RU486 1 <math>\mu</math>M</p>
	<p><b>Table S2: Cell Culture media and supplements</b></p>		