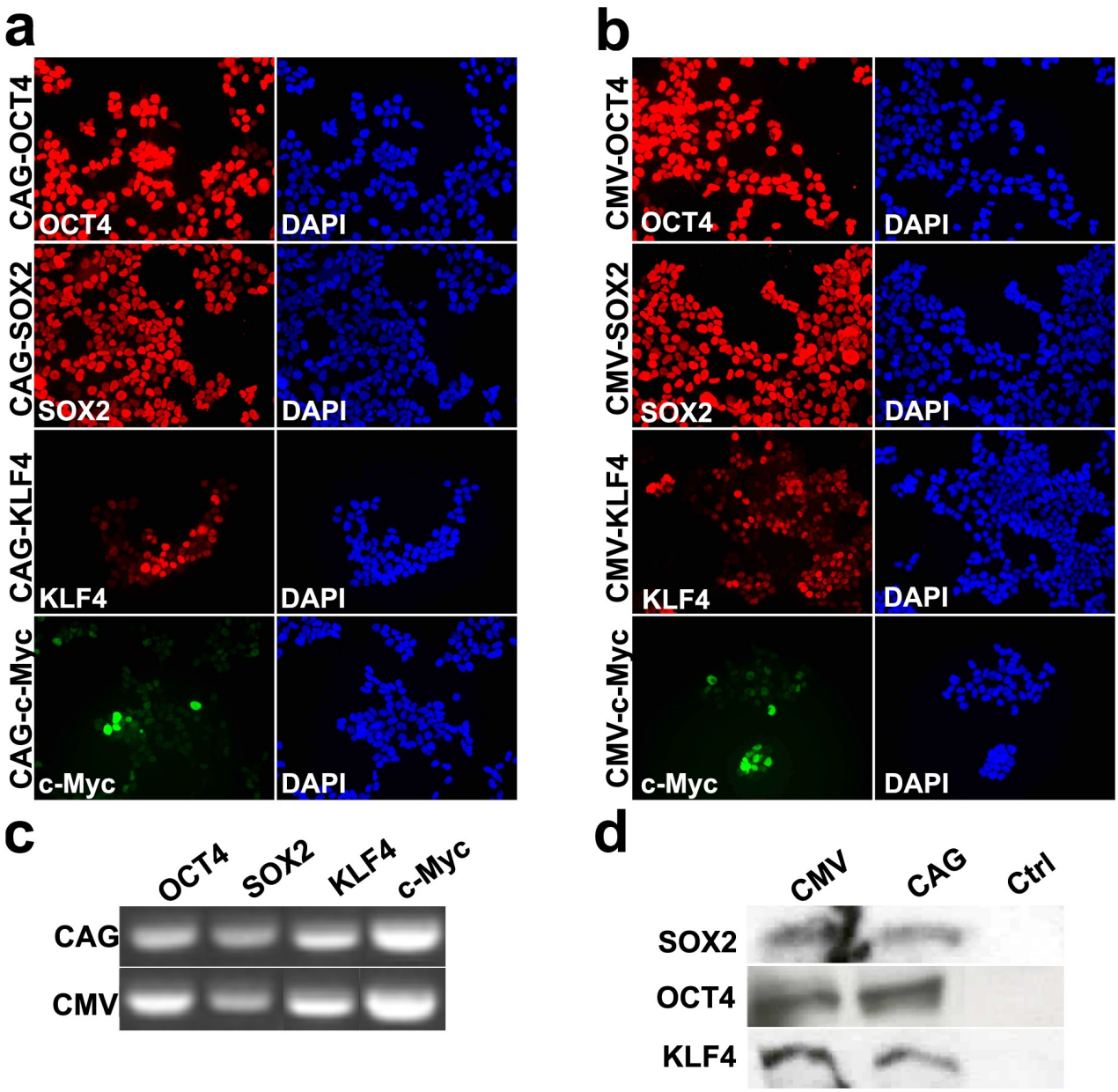
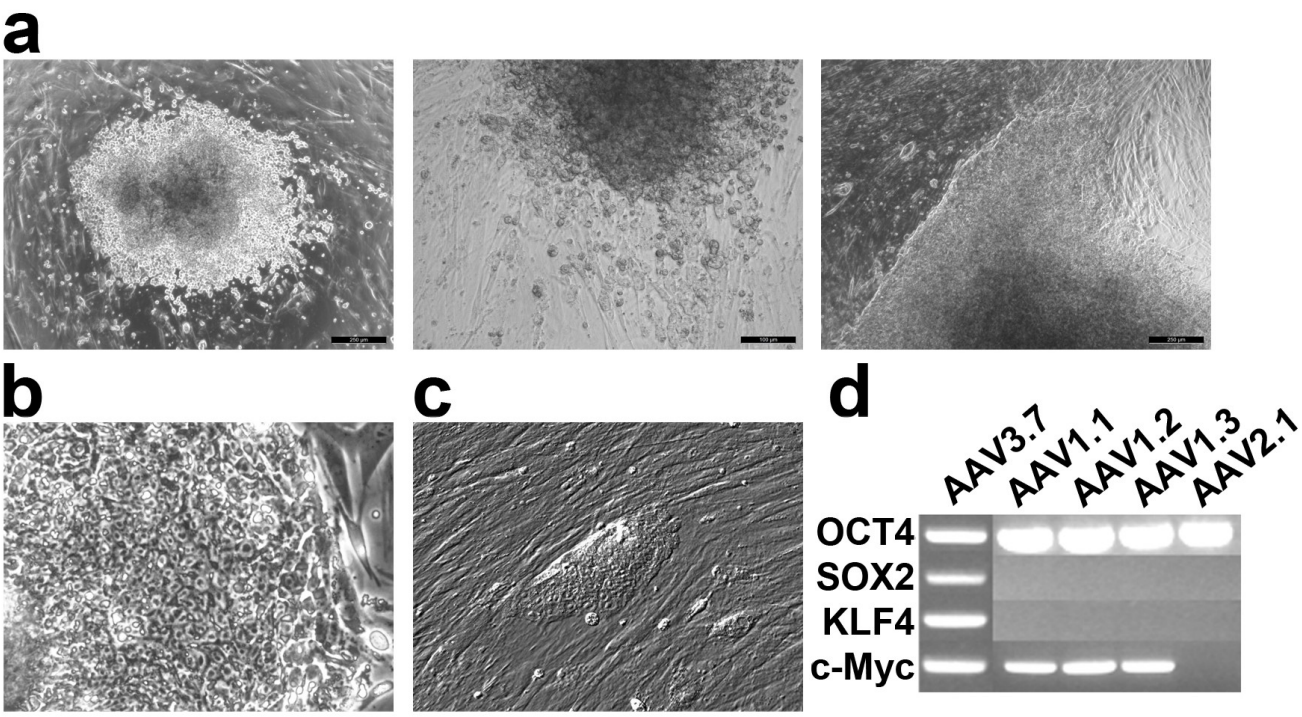


Supplementary Figure 1: Functionality of AAV viruses

a) Immunocytochemical staining of 293T cells infected with AAV2-CAG reprogramming factors. b) Immunocytochemical staining of 293T cells infected with AAV2-CMV reprogramming factors. Right DAPI staining and left are staining for SOX2, OCT4, KLF4 and c-Myc. c) Western blot of AAV2 transduced 293T cells shows correct sized bands for SOX2, OCT4 and KLF4. d) RT-PCR from AAV2 infected 293T cells shows expression of OCT4, SOX2, KLF4 and c-myc on mRNA level.



Supplementary Figure 2: AAV2 induced human colonies

a) Typical human colonies induced by AAV2 on day 21 of reprogramming. b) Early AAV2 induced human colony on day 13 of reprogramming. c) Passage 1 colony showing morphological resemblance to human pluripotent stem cells. d) RT-PCR analysis of transgene expression from five propagated human colonies shows retained expression of all or some of the reprogramming factors. Bars in a) are 250 μm, 100 μm and 250 μm.

Supplementary table 1. Summary of reprogramming experiments with human cells

Cells	Passage	AAV2 vector	Medium/ Matrix	#No of Trans-ductions	Virus genomes/cell / factor	Colony forming efficiency [%]	Clones expanded
HFF	11	CAG OSKM	hES/MEFs	1	100000	0,001	
		CAG OSKM	hES/MEFs	1	100000	0,003	
		CAG OSKM	hES/MEFs	2	100000	0,005	
		CAG OSKM	hES/MEFs	2	100000	0,002	
		CAG OSKM	hES/MEFs	3	100000	0,003	2
		CAG OSKM	hES/MEFs	3	100000	0	
		CMV OSKM	hES/MEFs	1	100000	0,001	
		CMV OSKM	hES/MEFs	1	100000	0	
		CMV OSKM	hES/MEFs	2	100000	0	
		CMV OSKM	hES/MEFs	2	100000	0,001	
		CMV OSKM	hES/MEFs	3	100000	0	
		CMV OSKM	hES/MEFs	3	100000	0,001	
HFF	11	CAG OSKM	hES/MEFs	4	15000	0,004	
		CAG OSKM	hES/MEFs	4	30000	0,006	1
		CAG OSKM	hES/MEFs	4	60000	0	
		CMV OSKM	hES/MEFs	4	15000	0,001	
		CMV OSKM	hES/MEFs	4	30000	0	
		CMV OSKM	hES/MEFs	4	60000	0,002	
AF	7	CAG OSKM	hES/MEFs	2	100000	0,015	
		CAG OSKM	hES/MEFs	4	30000	0,003	
		CMV OSKM	hES/MEFs	2	100000	0	
		CMV OSKM	hES/MEFs	4	30000	0	
HFF	13	CAG OSKM	hES/MEFs	2	100000	0,006	1
		CAG OSKM	hES/MEFs	4	30000	0	
		CAG OSKM	hES/Matrigel	2	100000	0	
		CAG OSKM	hES/Matrigel	4	30000	0,003	
		CMV OSKM	hES/MEFs	2	100000	0,002	
		CMV OSKM	hES/MEFs	4	30000	0	
		CMV OSKM	hES/Matrigel	2	100000	0,001	
		CMV OSKM	hES/Matrigel	4	30000	0,002	
HFF	10	CMV OSKM	hES/MEFs	1	20	0	
		CMV OSKM	hES/MEFs	1	200	0,001	
		CMV OSKM	hES/MEFs	1	2000	0,005	
		CMV OSKM	hES/MEFs	1	20000	0,003	
		CMV OSKM	hES/MEFs	2	20	0	
		CMV OSKM	hES/MEFs	2	200	0,002	
		CMV OSKM	hES/MEFs	2	2000	0,004	
		CMV OSKM	hES/MEFs	2	20000	0	
		CAG OSKM	hES/MEFs	1	20	0	
		CAG OSKM	hES/MEFs	1	200	0,022	
		CAG OSKM	hES/MEFs	1	2000	0,019	
		CAG OSKM	hES/MEFs	1	20000	0,036	
		CAG OSKM	hES/MEFs	2	20	0	
		CAG OSKM	hES/MEFs	2	200	0,024	
		CAG OSKM	hES/MEFs	2	2000	0,015	
		CAG OSKM	hES/MEFs	2	20000	0,029	

HFF	10	CAG OSKM	hES/MEFs	1	20000	0,065	
		CAG OSKM	CM/Matrigel	1	20000	0,035	
		CAG OSKM	hES/MEFs	2	20000	0,007	
		CAG OSKM	CM/Matrigel	2	20000	0,003	
		CAG OSKM	hES/MEFs	2	20000	0,045	
		CAG OSKM	CM/Matrigel	2	20000	0,021	
		CAG OSKM	hES/MEFs	1	20000	0,012	
		CAG OSKM	CM/Matrigel	1	20000	0,016	
		CAG OSKM	hES/MEFs	2	20000	0,014	2
		CAG OSKM	CM/Matrigel	2	20000	0,005	
		CAG OSKM	hES/MEFs	2	20000	0,03	4
		CAG OSKM	CM/Matrigel	2	20000	0,014	1
HFF	9	CAG OSKM	hES+PD+SB / Matrigel	2	20000	0,006	
		CAG OSKM	hES+PD+SB / Matrigel	2	20000	0,002	
		CAG OSKM	hES+PD+SB +VPA/Matrigel	2	20000	0,019	
		CAG OSKM	hES+PD+SB +VPA/Matrigel	2	20000	0,003	
		CAG OSKM	hES + NaB/MEFs	1	20000	0,003	
		CAG OSKM	hES + NaB/MEFs	1	20000	0,001	
HFF	7	CAG OSKM	hES/MEFs	2	20000	0,011	
		CAG OSKM	hES/MEFs	2	20000	0,011	
		CAG OSKM	hES+NaB/MEFs	2	20000	0,008	
		CAG OSKM	hES/MEFs	4	20000	0,015	
		CAG OSKM	hES+NaB/MEFs	4	20000	0,01	
		CAG OSKM	hES+PD+SB +NaB/Matrigel	2	20000	0,002	
		CAG OSKM	hES+PD+SB +NaB/Matrigel	2	20000	0,005	1

Supplementary table 2. Summary of reprogramming experiments with mouse cells

Cells	Passage	AAV2 vector	Medium	#No of Trans-ductions	Virus genomes/ cell/factor	Colony forming efficiency [%]	clones expanded
ICR	1	CMV OSKM	mES	1	20000	0,001	0
		CMV OSKM	mES	2	20000	0,005	0
		CMV OSKM	mES	3	20000	0,001	0
		CMV OSKM	mES	2	20000	0,003	0
		CMV OSKM	mES	3	20000	0,006	0
		CMV OSKM	mES	3	20000	0,001	0
		CAG OSKM	mES	1	20000	0,04	1
		CAG OSKM	mES	2	20000	0,033	3
		CAG OSKM	mES	3	20000	0,022	1
		CAG OSKM	mES	2	20000	0,091	1
		CAG OSKM	mES	3	20000	0,048	2
		CAG OSKM	mES	3	20000	0,042	2
ICR	1	CAG OSKM	mES	1	200000	0,072	12
		CAG OSKM	mES	1	20000	0,009	2
		CAG OSKM	mES	1	2000	0	0
		CAG OSKM	mES	1	200	0	0
		CAG OSKM	mES	2	20000	0	0
		CAG OSKM	mES	2	2000	0	0
		CAG OSKM	mES	2	200	0	0
ICR	2	CAG OSKM	mES	1	20000	0,003	0
		CAG OSKM	mES	1	2000	0	0
		CAG OSKM	mES	1	200	0	0
		CAG OSKM	mES	2	20000	0,015	0
		CAG OSKM	mES	2	2000	0	0
		CAG OSKM	mES	2	200	0	0
		CAG OSKM	mES+NaB	1	20000	0,006	0
		CAG OSKM	mES+NaB	1	2000	0	0
		CAG OSKM	mES+NaB	1	200	0	0
		CAG OSKM	mES+NaB	2	20000	0,006	0
		CAG OSKM	mES+NaB	2	2000	0	0
		CAG OSKM	mES+NaB	2	200	0	0

Supplementary table 3 PCR primers used

Primer	Forward	Reverse	Reference
Oct4 endo	TTGGGCTAGAGAAGGATGTG	GAGTAGAGTGTGGTGAAGTG	
Sox2 endo	GAAACGACAGCTGCGGAAA	TCTAGTCGGCATCACGGTTTT	Gonzalez et al. 2009
Klf4 endo	AACATGCCCGGACTTACAAA	TTCAAGGGAATCCTGGTCTTC	Stadtfeldt et al. 2008
c-myc endo	TAACTCGAGGAGGAGCTGGA	GCCAAGGTTGTGAGGTTAGG	Stadtfeldt et al. 2008
Nanog	CTCAGCCTCCAGCAGATGC	GGGATAGCTGCAATGGATGC	
Rex1	TGTCCTCAGGCTGGGTAGTC	TGATTTTCCGACGTATGCAA	Gonzalez et al. 2009
Oct4 exo	TCCCCCTGTCTCCGTCACCAC	GCGGCCCAAAGGGAGATCCG	
Sox2 exo	CCTACTCGCAGCAGGGCACC	GCGGCCCAAAGGGAGATCCG	
Klf4 exo	TAAACACACGGGGCACCGCC	GCGGCCCAAAGGGAGATCCG	
C-myc exo	AAACGACAAGAGGCGGACAC	GCGGCCCAAAGGGAGATCCG	
WPRE	TGAGTTTGGACAAACCACAAC	TTGTTGTTAACTTGTTTATTGCAGC	