Fig. 1


A
pCEB-hSK-O (16.9 kb)
CAG
SOX2 - KLF4
WPRE
pA
pUCori
Amp'
oriP
EBNA-1
pA
WPRE
OCT4
CAG
B
pCEB-hUL-G (17.0 kb)
CAG
LMYC -LIN28
WPRE
pA
pUCori
Amp'
oriP
EBNA-1
pA
WPRE
GLIS1
CAG

Fig. 2

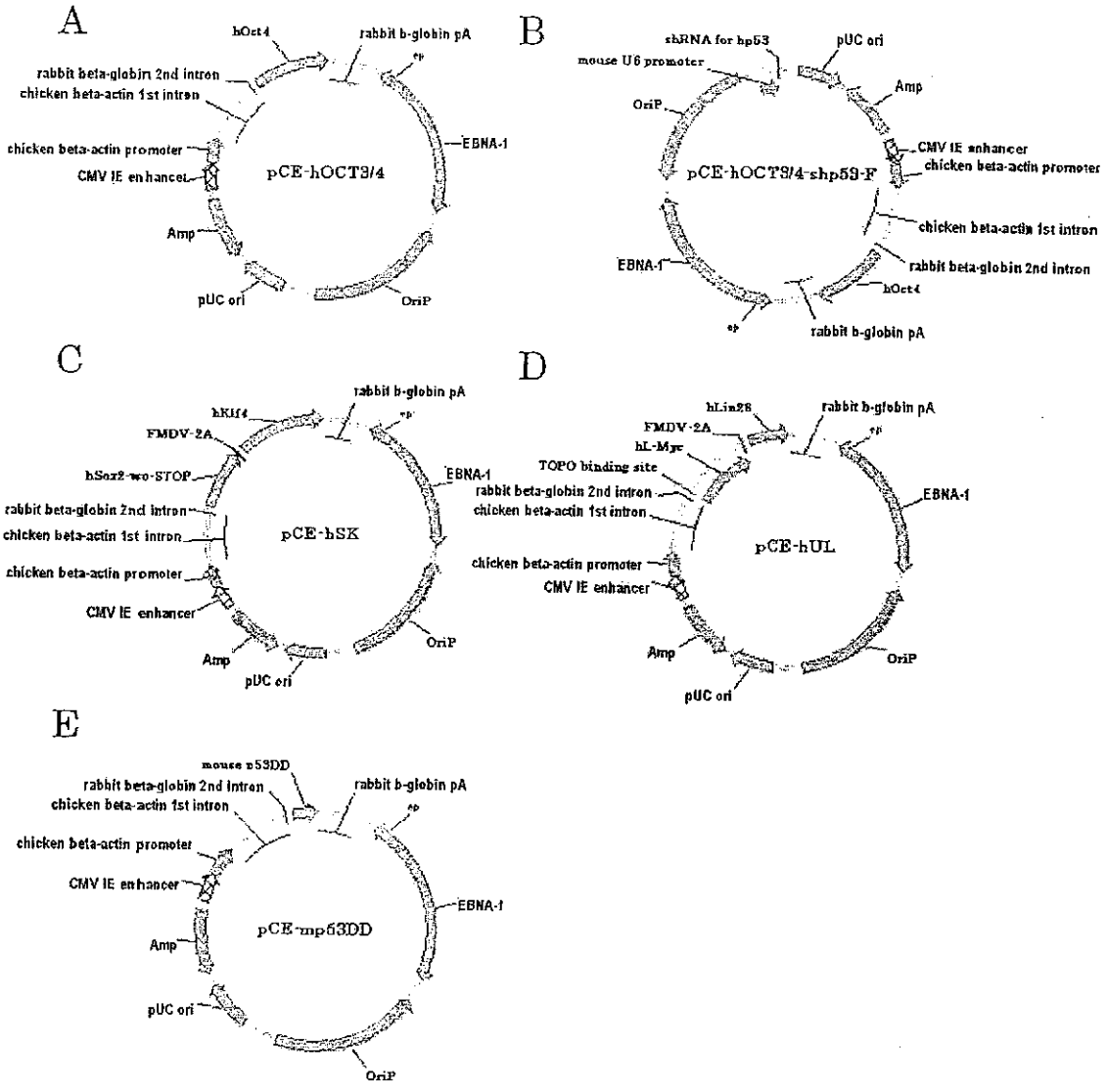

A
hOct4
rabbit b-globin pA
rabbit beta-globin 2nd intron
chicken beta-actin 1st intron
chicken beta-actin promoter
CMV IE enhancer
EBNA-1
pCE-hOCT3/4
Amp
pUC ori
OriP
B
shRNA for hp53
pUC ori
mouse U6 promoter
Amp
OriP
CMV IE enhancer
chicken beta-actin promoter
pCE-hOCT3/4-shp53-F
chicken beta-actin 1st intron
EBNA-1
rabbit beta-globin 2nd intron
hOct4
rabbit b-globin pA
C
rabbit b-globin pA
hKlf4
FMDV-2A
EBNA-1
hSox2-wo-STOP
rabbit beta-globin 2nd intron
chicken beta-actin 1st intron
pCE-hSK
chicken beta-actin promoter
CMV IE enhancer
OriP
Amp
pUC ori
D
hLin28
rabbit b-globin pA
FMDV-2A
hL-Myc
TOPO binding site
EBNA-1
rabbit beta-globin 2nd intron
chicken beta-actin 1st intron
pCE-hUL
chicken beta-actin promoter
CMV IE enhancer
Amp
OriP
pUC ori
E
mouse p53DD
rabbit beta-globin 2nd intron
rabbit b-globin pA
chicken beta-actin 1st intron
chicken beta-actin promoter
CMV IE enhancer
EBNA-1
pCE-mp53DD
Amp
pUC ori
OriP

Fig. 3

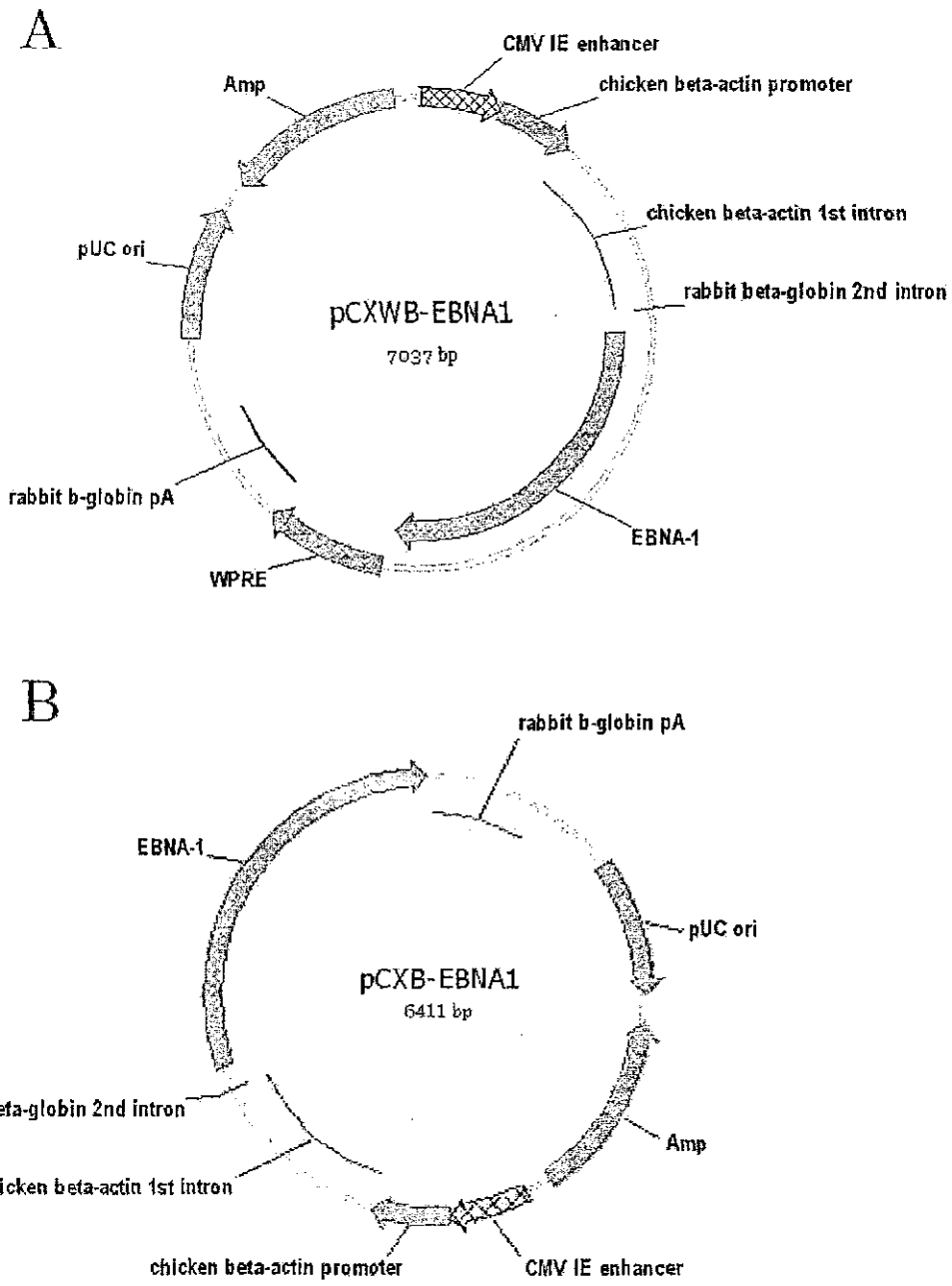

A
CMV IE enhancer
chicken beta-actin promoter
chicken beta-actin 1st intron
rabbit beta-globin 2nd intron
EBNA-1
WPRE
rabbit b-globin pA
pUC ori
Amp
pCXWB-EBNA1
7037 bp
B
rabbit b-globin pA
pUC ori
Amp
CMV IE enhancer
chicken beta-actin promoter
chicken beta-actin 1st intron
rabbit beta-globin 2nd intron
EBNA-1
pCXB-EBNA1
6411 bp

Fig. 4

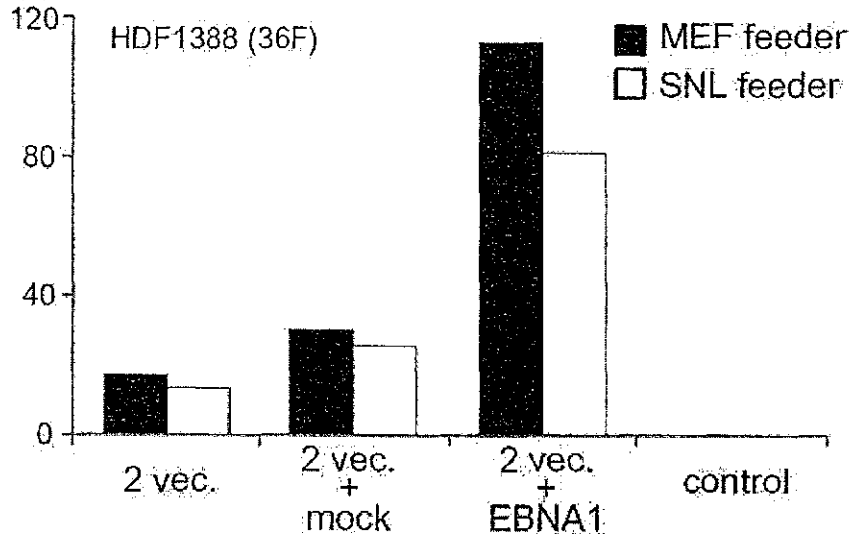

120
80
40
0
HDF1388 (36F)
MEF feeder
SNL feeder
2 vec.
2 vec. + mock
2 vec. + EBNA1
control

Fig. 5

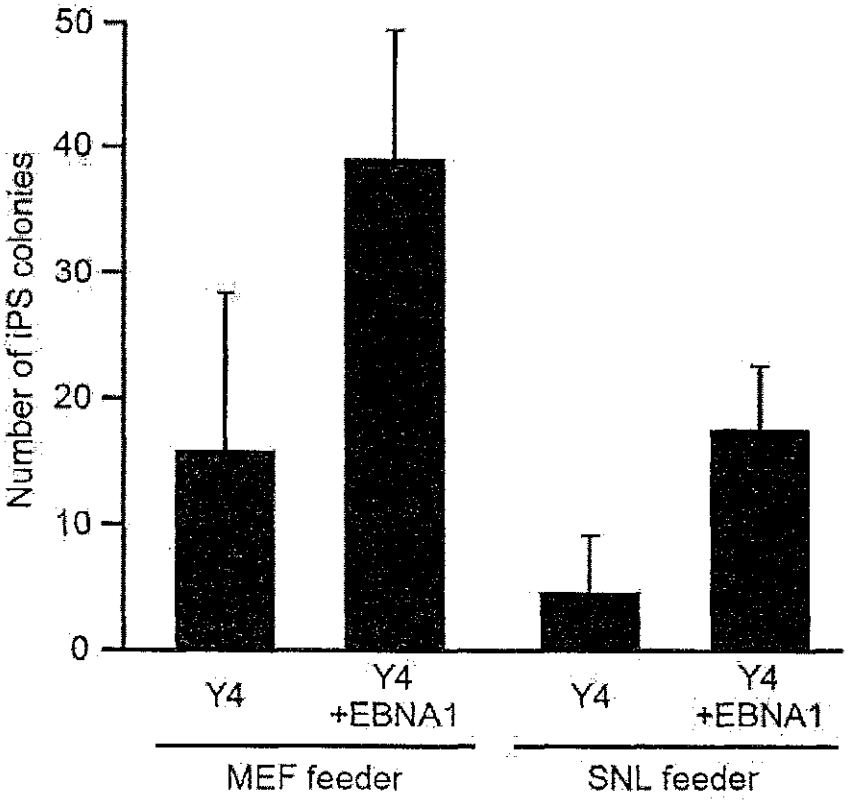

50
40
30
20
10
0
Number of iPS colonies
Y4
Y4 +EBNA1
Y4
Y4 +EBNA1
MEF feeder
SNL feeder

Fig. 6

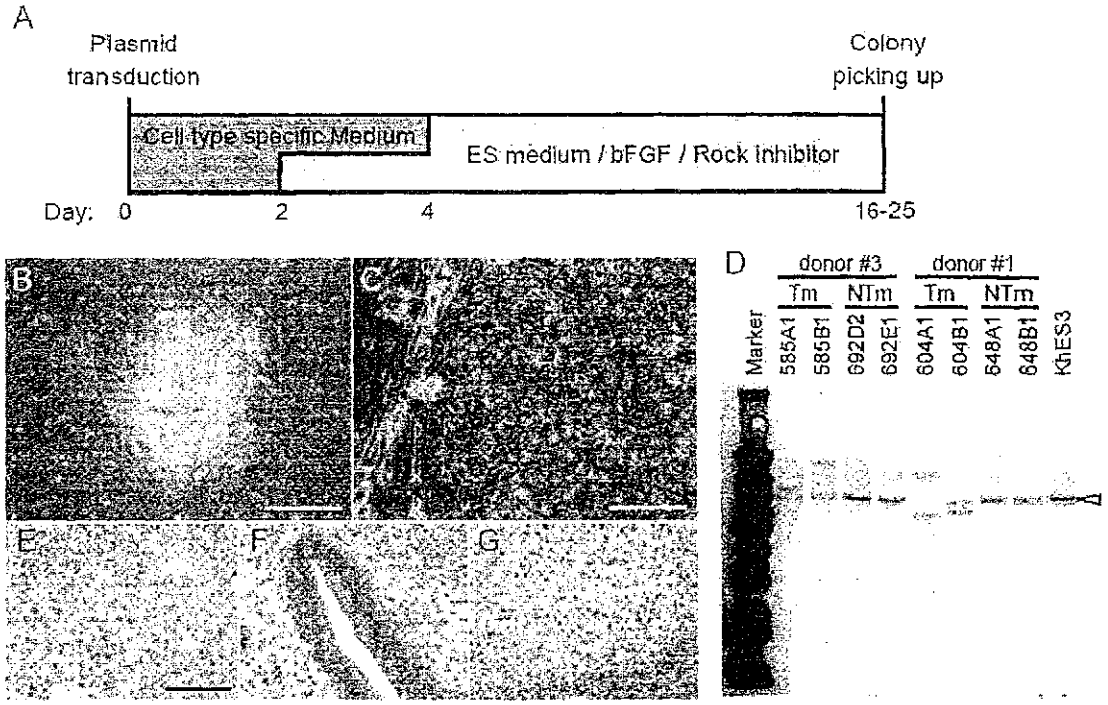
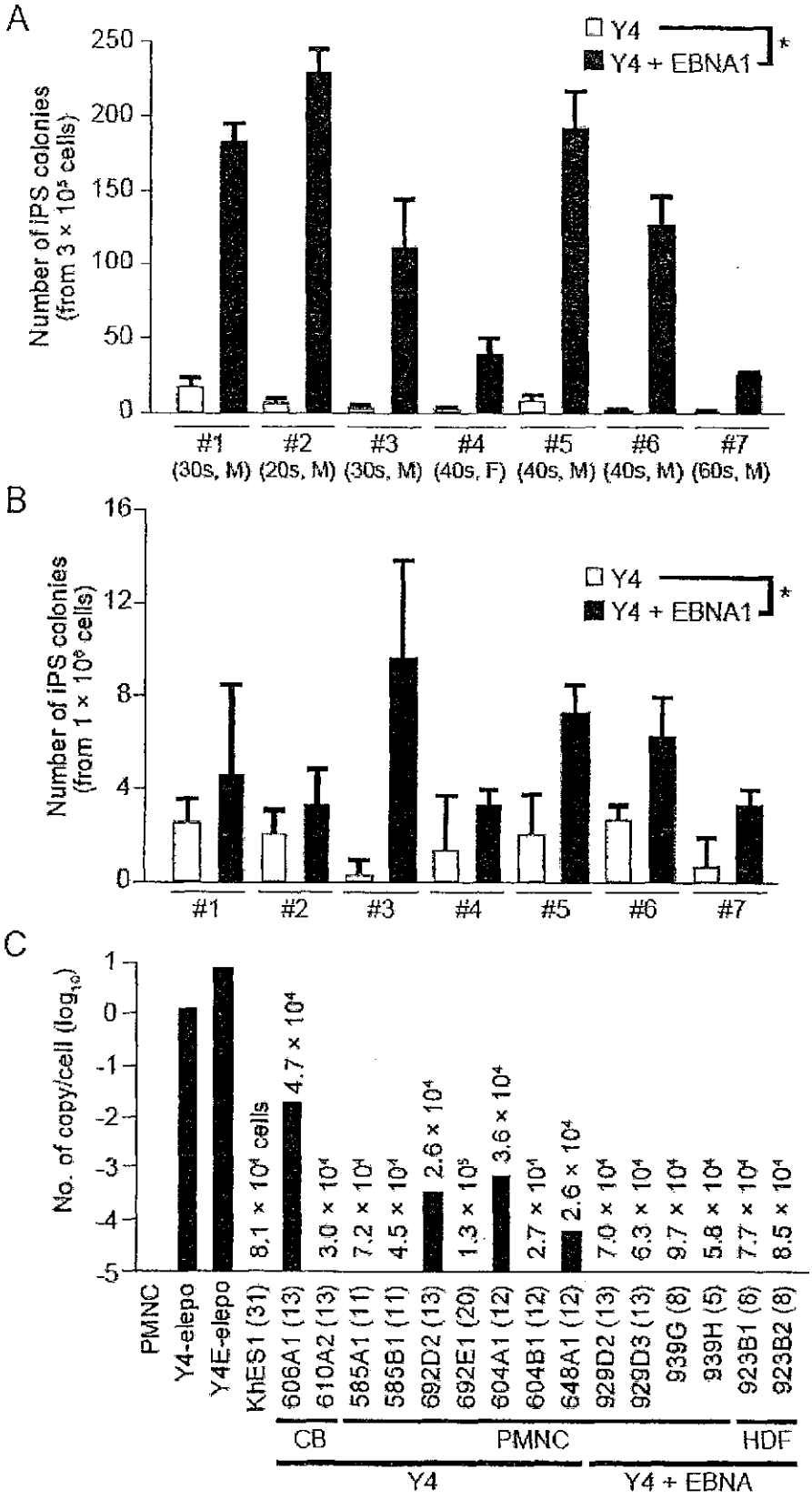

A
Plasmid transduction
Colony picking up
Cell type specific Medium
ES medium / bFGF / Rock inhibitor
Day: 0
2
4
16-25
B
C
D
donor #3
donor #1
Tm
NTm
Tm
NTm
Marker
585A1
585B1
692D2
692E1
604A1
604B1
648A1
648B1
KhES3
E
F
G

Fig. 7


A
Y4
Y4 + EBNA1
*
Number of iPS colonies (from 3 × 10⁵ cells)
250
200
150
100
50
0
#1 (30s, M)
#2 (20s, M)
#3 (30s, M)
#4 (40s, F)
#5 (40s, M)
#6 (40s, M)
#7 (60s, M)
B
Y4
Y4 + EBNA1
*
Number of iPS colonies (from 1 × 10⁶ cells)
16
12
8
4
0
#1
#2
#3
#4
#5
#6
#7
C
No. of copy/cell (log10)
1
0
-1
-2
-3
-4
-5
PMNC
Y4-elepo
Y4E-elepo
KhES1 (31)
606A1 (13)
610A2 (13)
585A1 (11)
585B1 (11)
692D2 (13)
692E1 (20)
604A1 (12)
604B1 (12)
648A1 (12)
929D2 (13)
929D3 (13)
939G (8)
939H (5)
923B1 (6)
923B2 (8)
8.1 × 10⁴ cells
4.7 × 10⁴
3.0 × 10⁴
7.2 × 10⁴
4.5 × 10⁴
2.6 × 10⁴
1.3 × 10⁵
3.6 × 10⁴
2.7 × 10⁴
2.6 × 10⁴
7.0 × 10⁴
6.3 × 10⁴
9.7 × 10⁴
5.8 × 10⁴
7.7 × 10⁴
8.5 × 10⁴
CB
PMNC
HDF
Y4
Y4 + EBNA