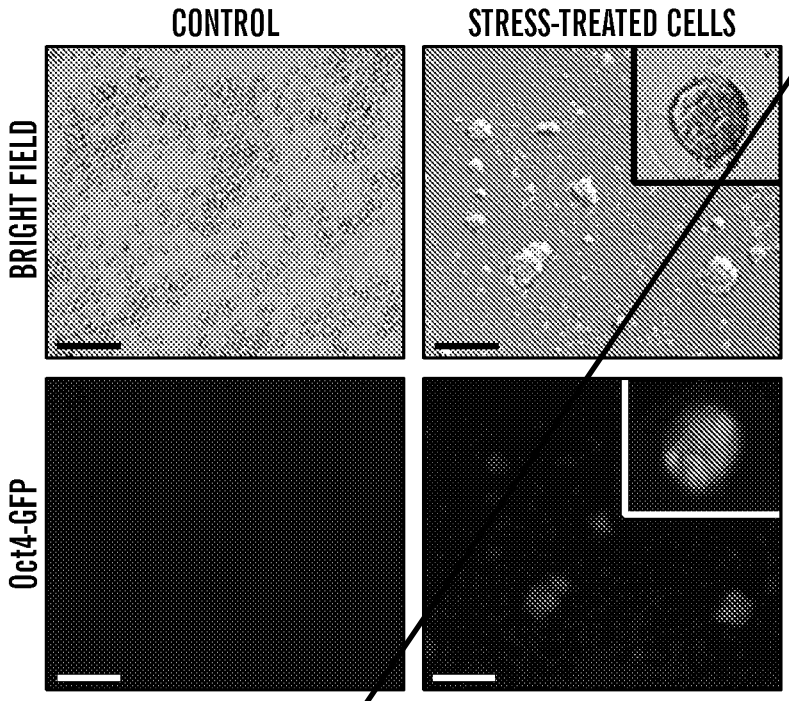

CONTROL
STRESS-TREATED CELLS
BRIGHT FIELD
Oct4-GFP

FIG. 1A

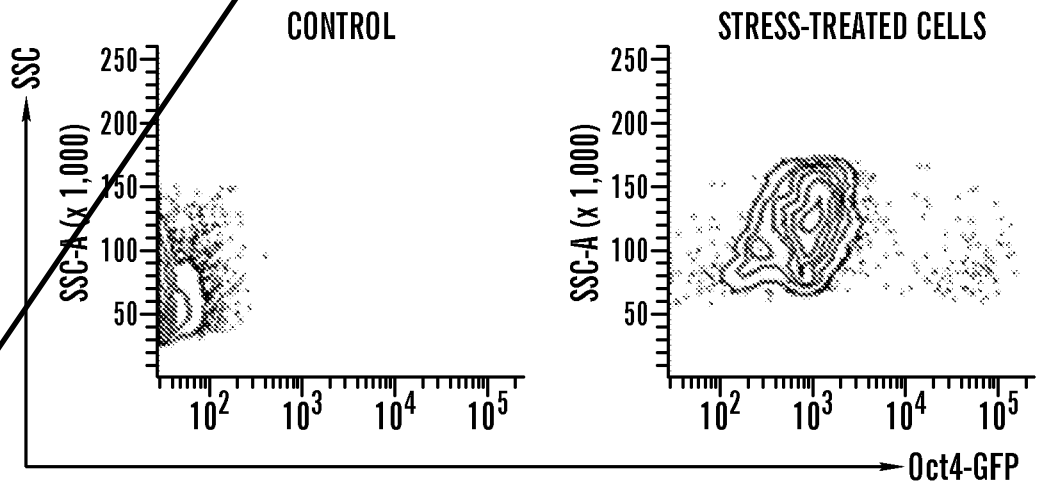

CONTROL
STRESS-TREATED CELLS
SSC
SSC-A (x 1,000)
250
200
150
100
50
10^2
10^3
10^4
10^5
Oct4-GFP

FIG. 1B

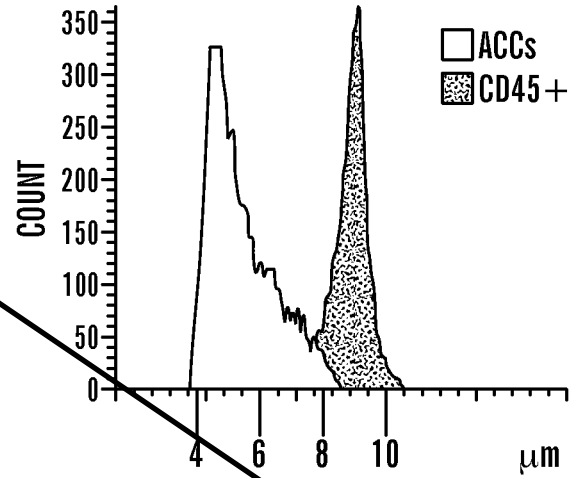

350
300
250
200
150
100
50
0
COUNT
ACCs
CD45+
4
6
8
10
μm

FIG. 1C

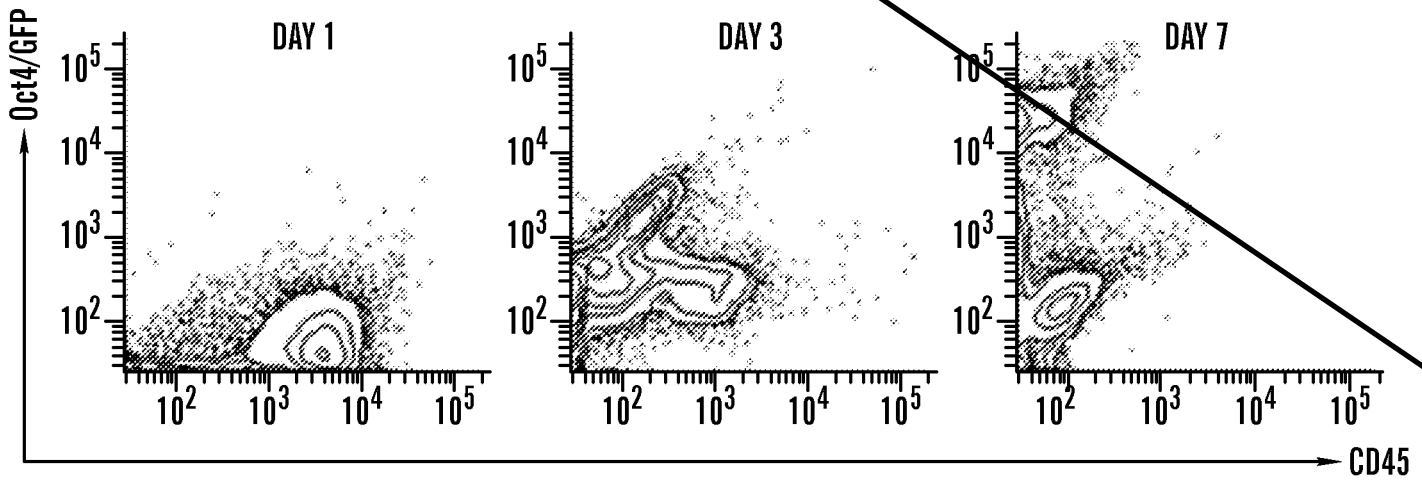

Oct4/GFP
DAY 1
DAY 3
DAY 7
10^5
10^4
10^3
10^2
CD45

FIG. 1D

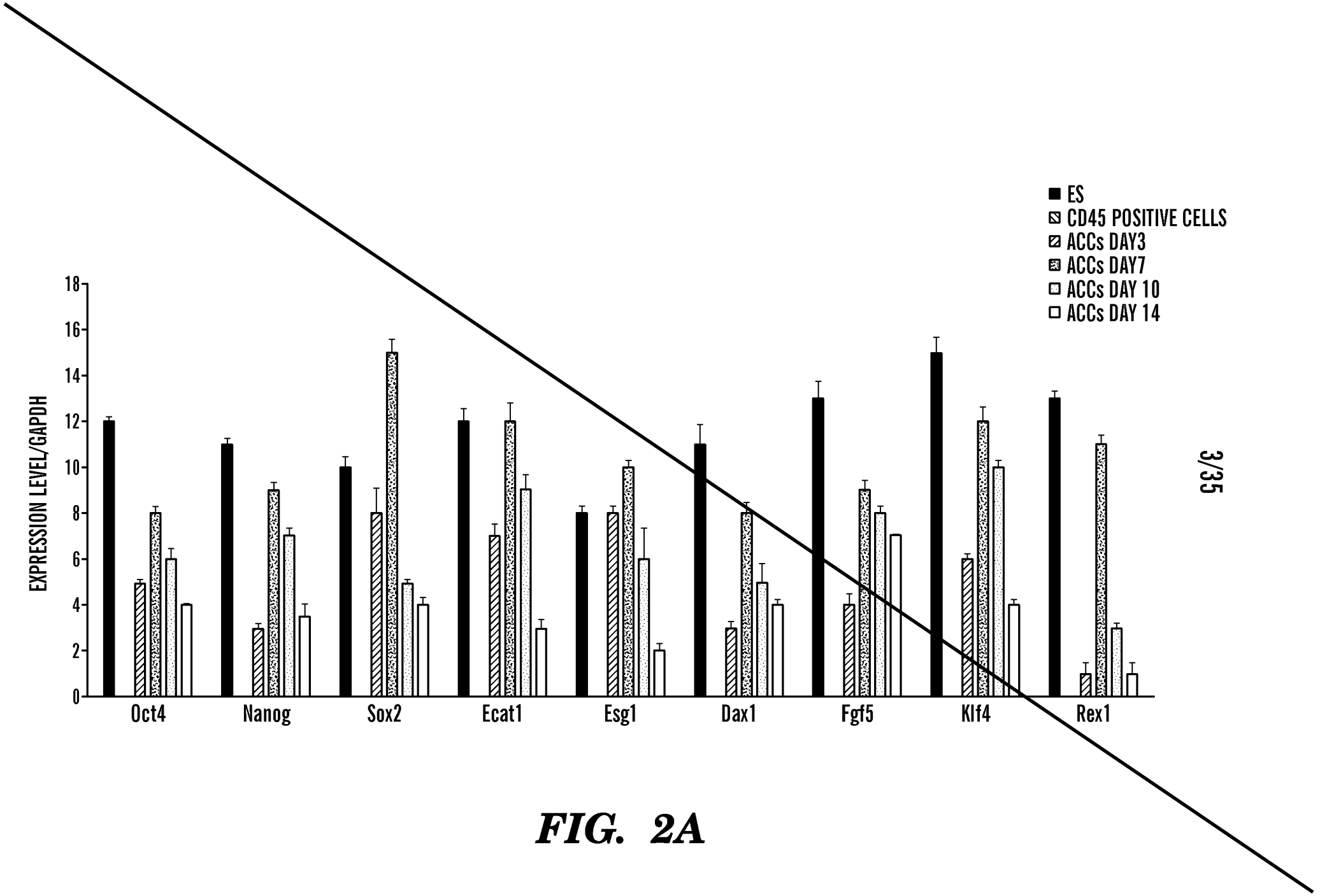

ES
CD45 POSITIVE CELLS
ACCs DAY3
ACCs DAY7
ACCs DAY 10
ACCs DAY 14
EXPRESSION LEVEL/GAPDH
0
2
4
6
8
10
12
14
16
18
Oct4
Nanog
Sox2
Ecat1
Esg1
Dax1
Fgf5
Klf4
Rex1

FIG. 2A

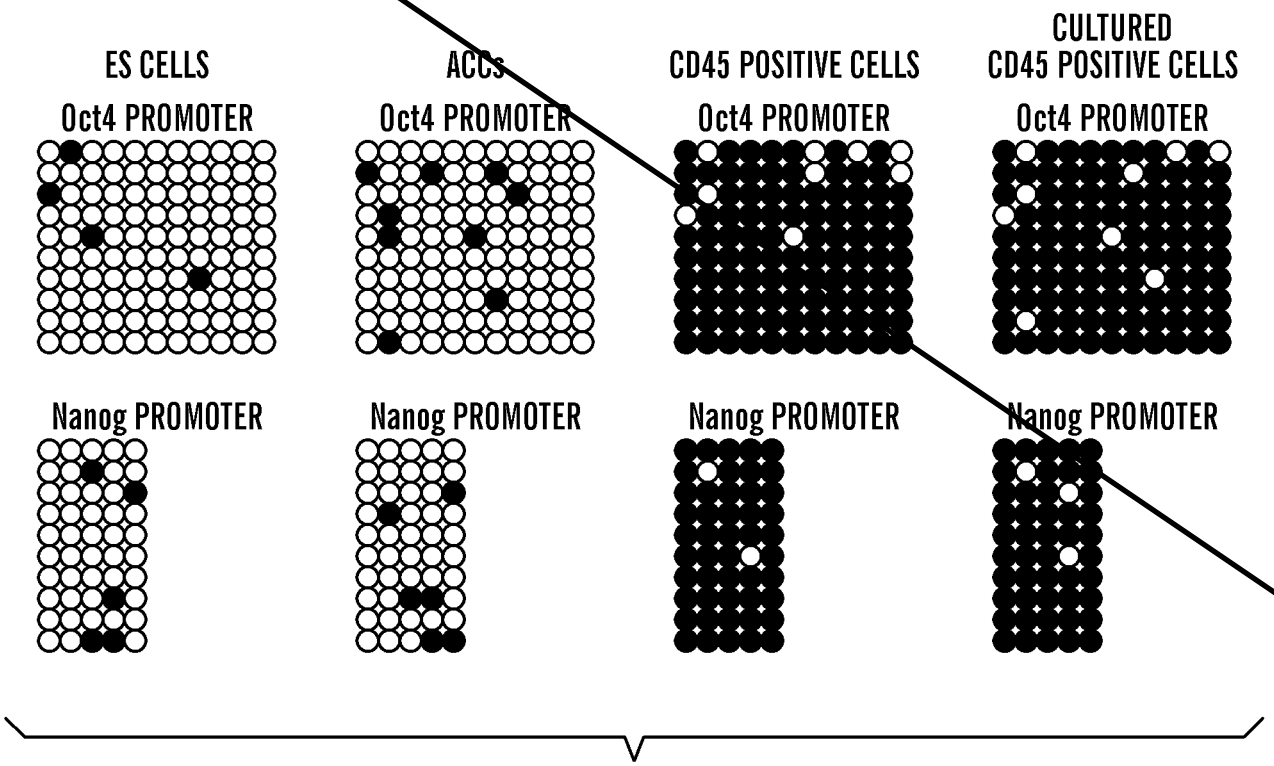

ES CELLS
Oct4 PROMOTER
Nanog PROMOTER
ACCs
Oct4 PROMOTER
Nanog PROMOTER
CD45 POSITIVE CELLS
Oct4 PROMOTER
Nanog PROMOTER
CULTURED
CD45 POSITIVE CELLS
Oct4 PROMOTER
Nanog PROMOTER

FIG. 2B

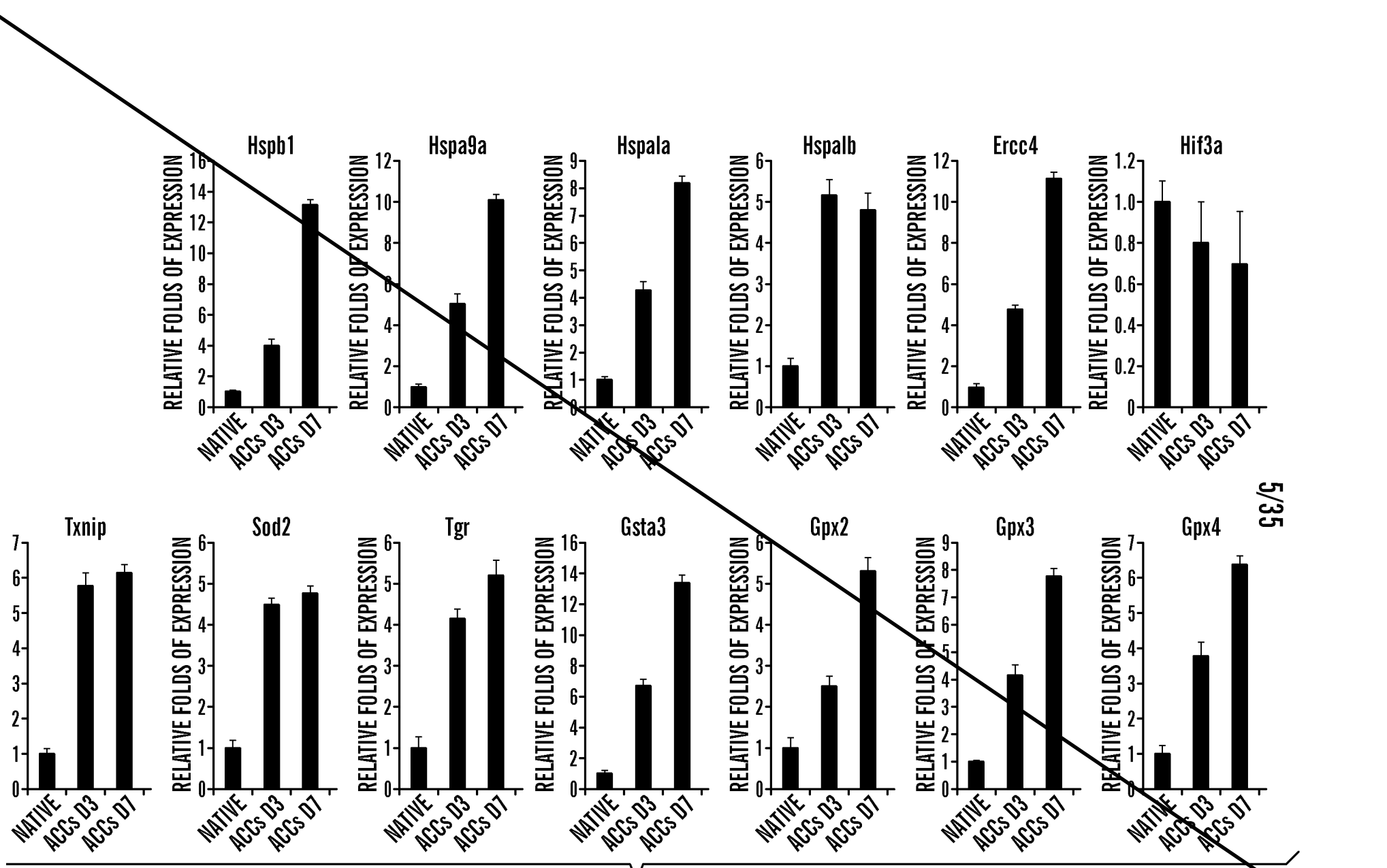

Hspb1
Hspa9a
Hspala
Hspalb
Ercc4
Hif3a
Txnip
Sod2
Tgr
Gsta3
Gpx2
Gpx3
Gpx4
RELATIVE FOLDS OF EXPRESSION
NATIVE
ACCs D3
ACCs D7

FIG. 3A

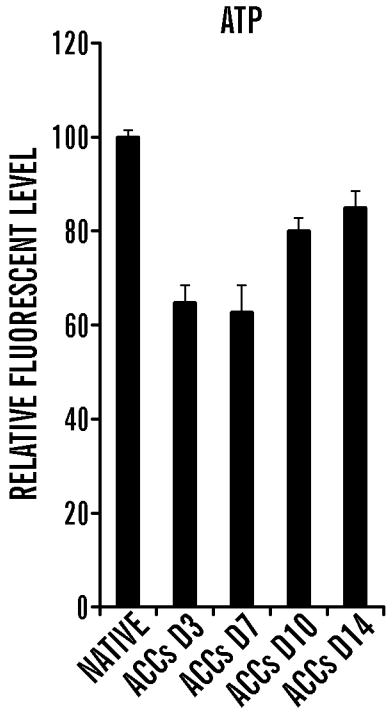


FIG. 3B

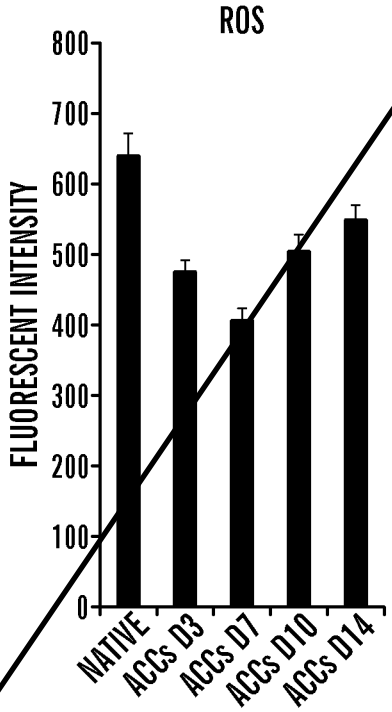


FIG. 3C

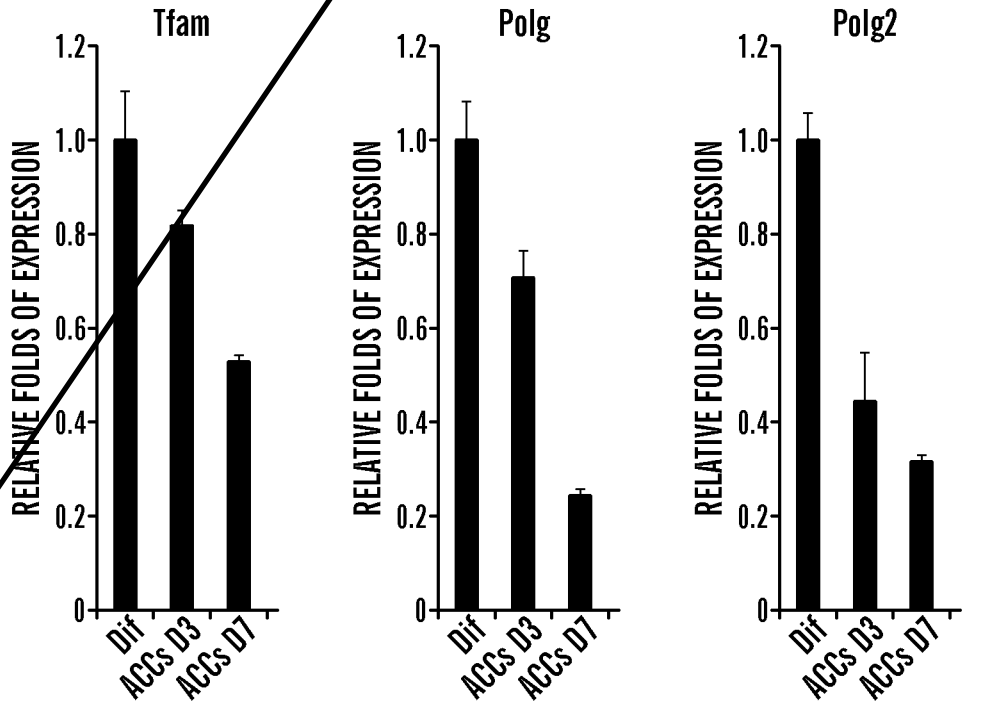


FIG. 3D

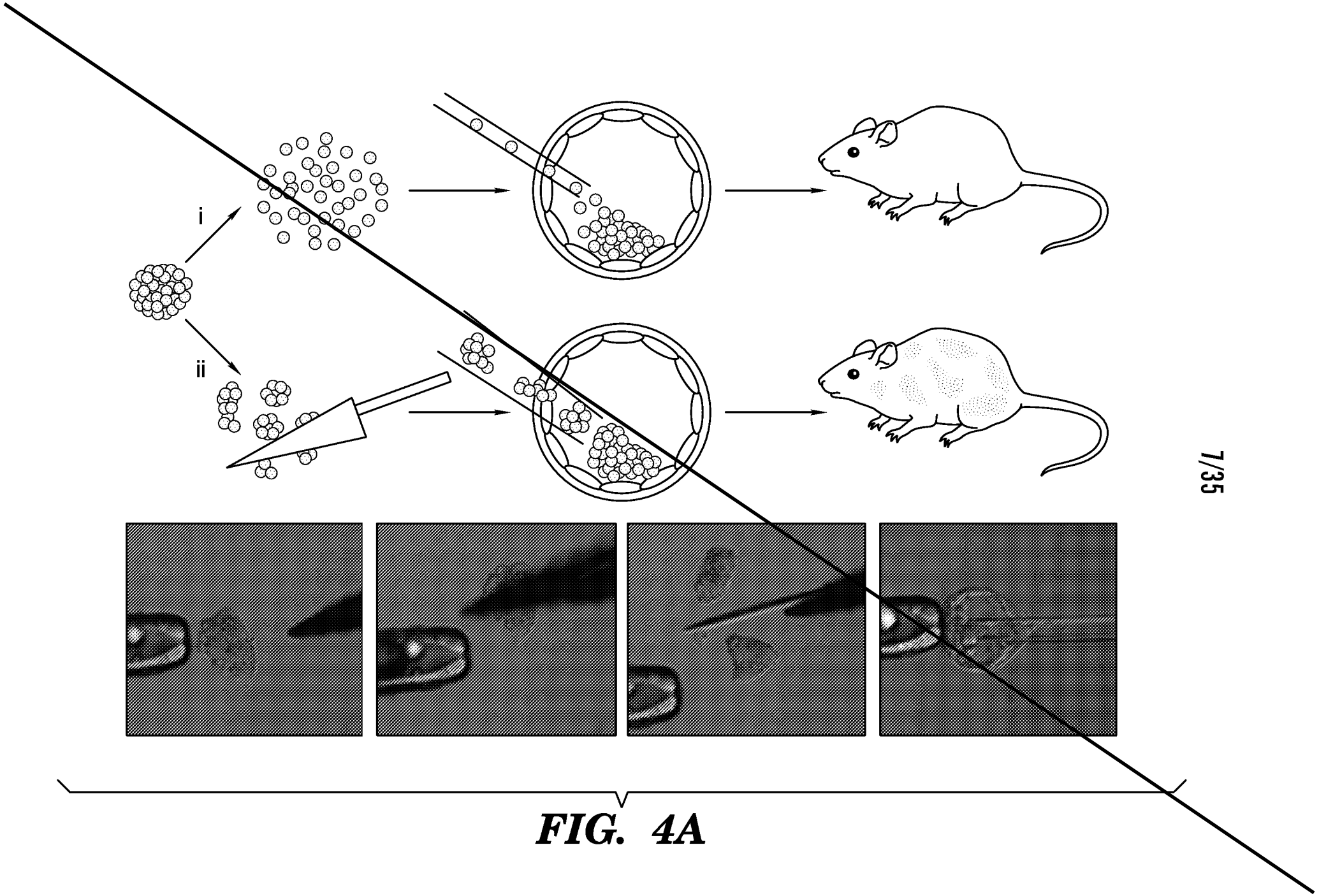


FIG. 4A

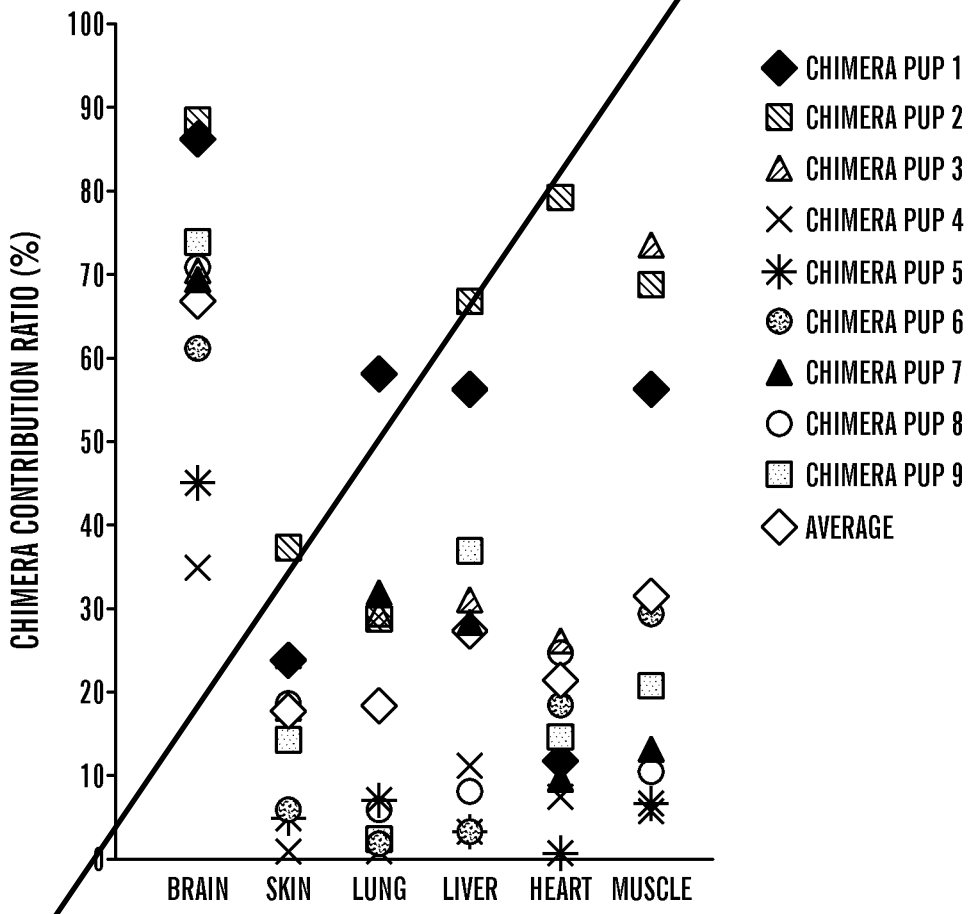

CHIMERA CONTRIBUTION RATIO (%)
100
90
80
70
60
50
40
30
20
10
0
BRAIN
SKIN
LUNG
LIVER
HEART
MUSCLE
CHIMERA PUP 1
CHIMERA PUP 2
CHIMERA PUP 3
CHIMERA PUP 4
CHIMERA PUP 5
CHIMERA PUP 6
CHIMERA PUP 7
CHIMERA PUP 8
CHIMERA PUP 9
AVERAGE

FIG. 4B

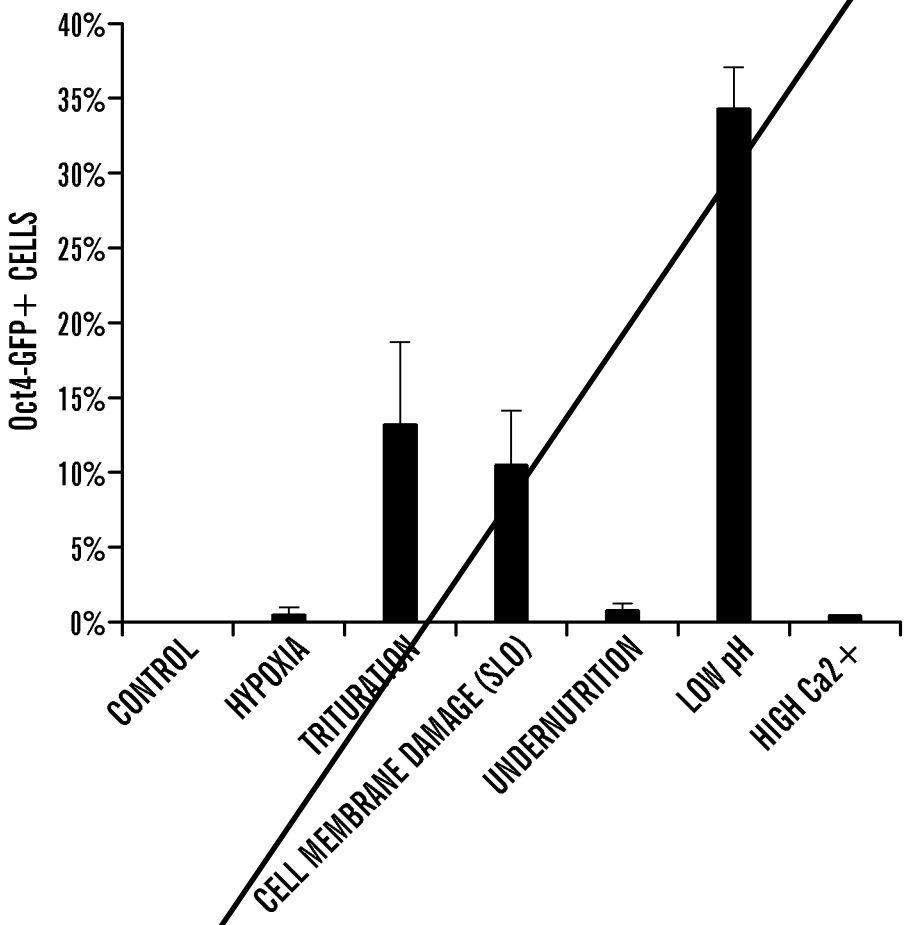

40%
35%
30%
25%
20%
15%
10%
5%
0%
Oct4-GFP+ CELLS
CONTROL
HYPOXIA
TRITURATION
CELL MEMBRANE DAMAGE (SLO)
UNDERNUTRITION
LOW pH
HIGH Ca2+

FIG. 5A

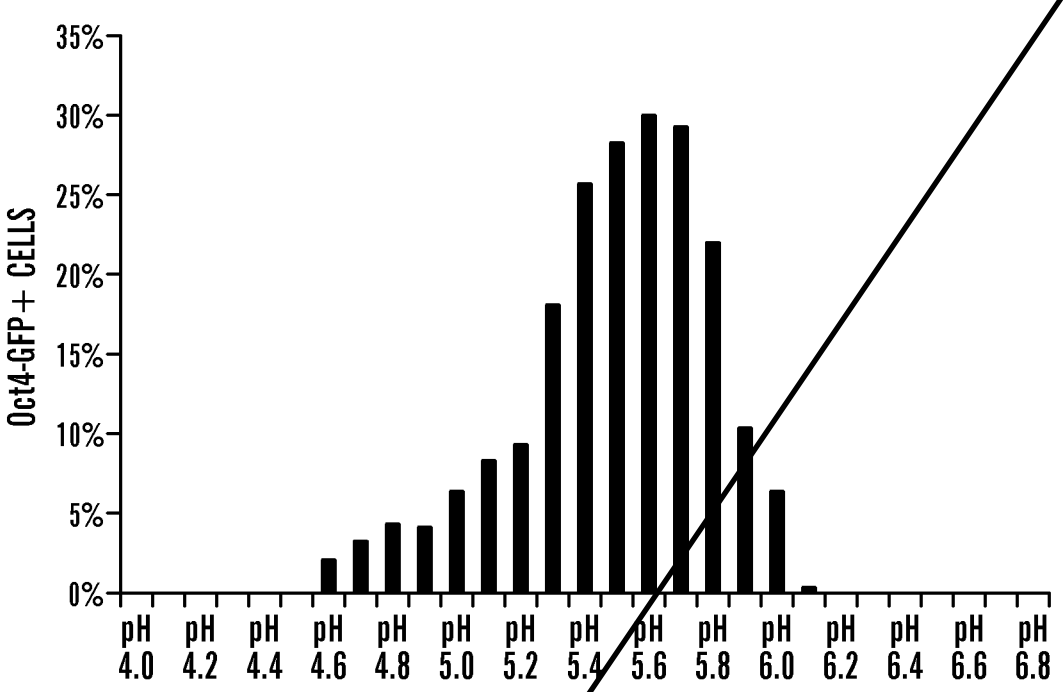

35%
30%
25%
20%
15%
10%
5%
0%
Oct4-GFP+ CELLS
pH 4.0
pH 4.2
pH 4.4
pH 4.6
pH 4.8
pH 5.0
pH 5.2
pH 5.4
pH 5.6
pH 5.8
pH 6.0
pH 6.2
pH 6.4
pH 6.6
pH 6.8

FIG. 5B

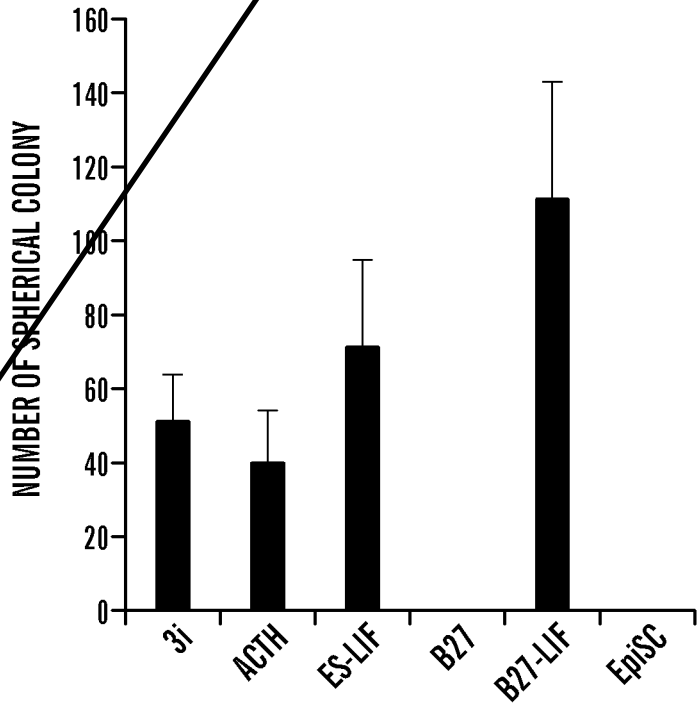

160
140
120
100
80
60
40
20
0
NUMBER OF SPHERICAL COLONY
3i
ACTH
ES-LIF
B27
B27-LIF
EpiSC

FIG. 5C

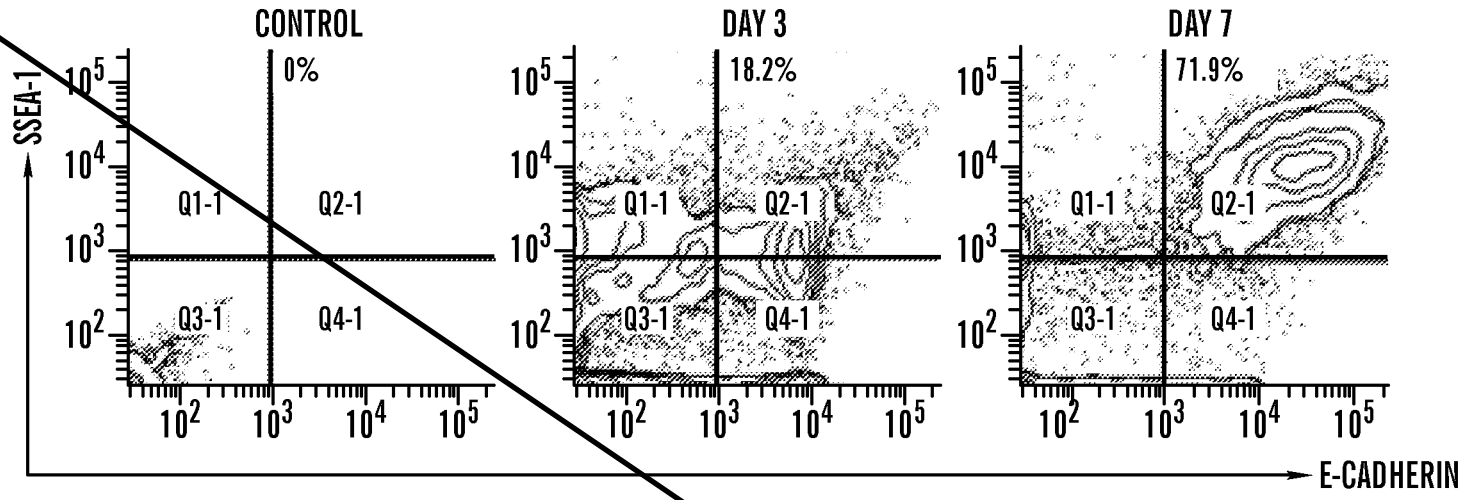

CONTROL
DAY 3
DAY 7
0%
18.2%
71.9%
SSEA-1
E-CADHERIN
Q1-1
Q2-1
Q3-1
Q4-1
10^2
10^3
10^4
10^5

FIG. 6A

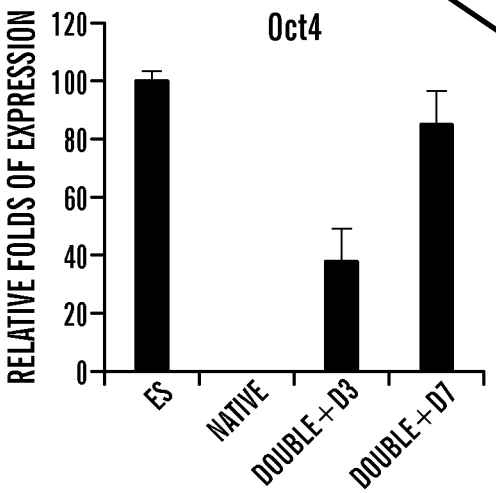

Oct4
RELATIVE FOLDS OF EXPRESSION
0
20
40
60
80
100
120
ES
NATIVE
DOUBLE+D3
DOUBLE+D7

FIG. 6B

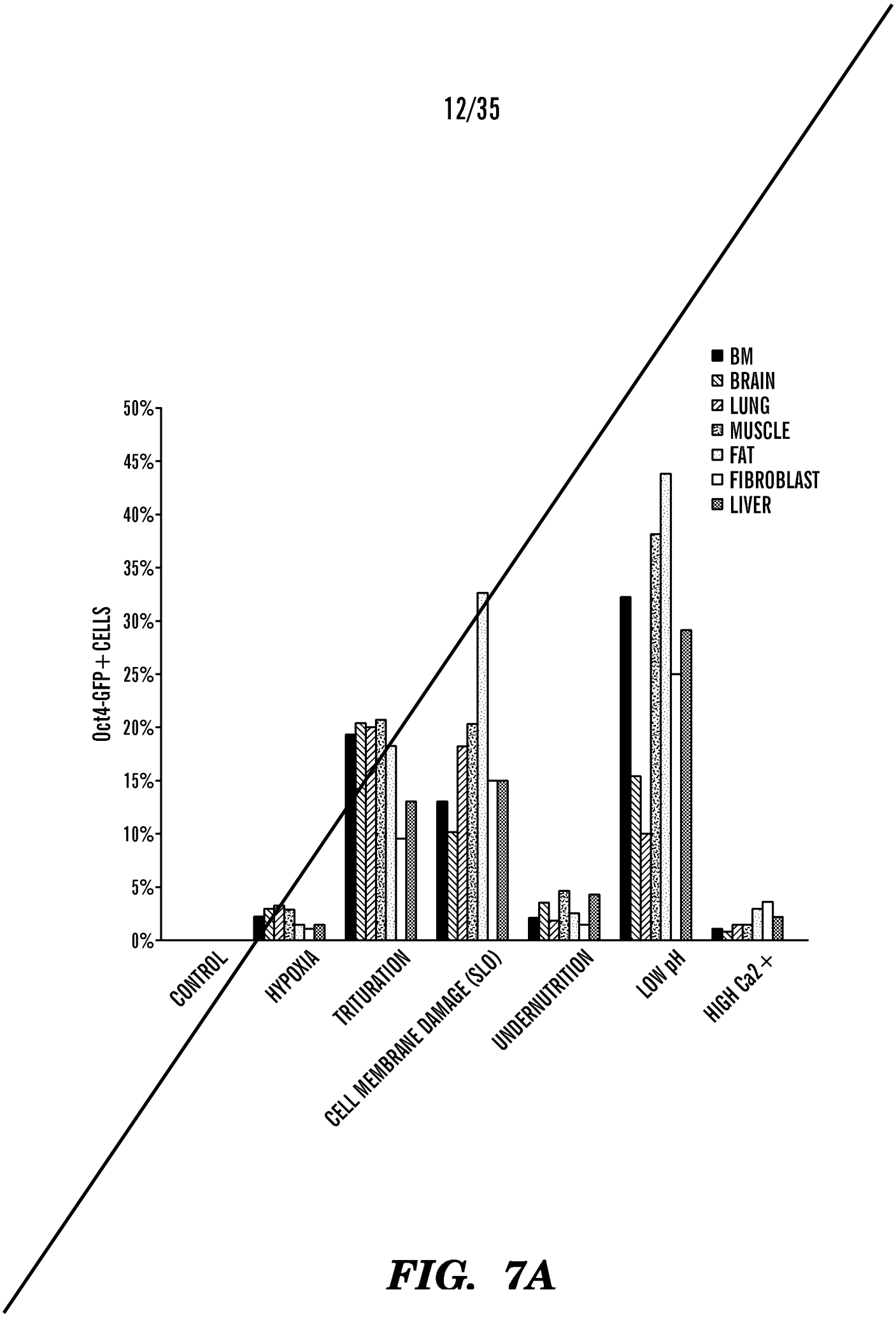

BM
BRAIN
LUNG
MUSCLE
FAT
FIBROBLAST
LIVER
50%
45%
40%
35%
30%
25%
20%
15%
10%
5%
0%
Oct4-GFP+CELLS
CONTROL
HYPOXIA
TRITURATION
CELL MEMBRANE DAMAGE (SLO)
UNDERNUTRITION
LOW pH
HIGH Ca2+

FIG. 7A

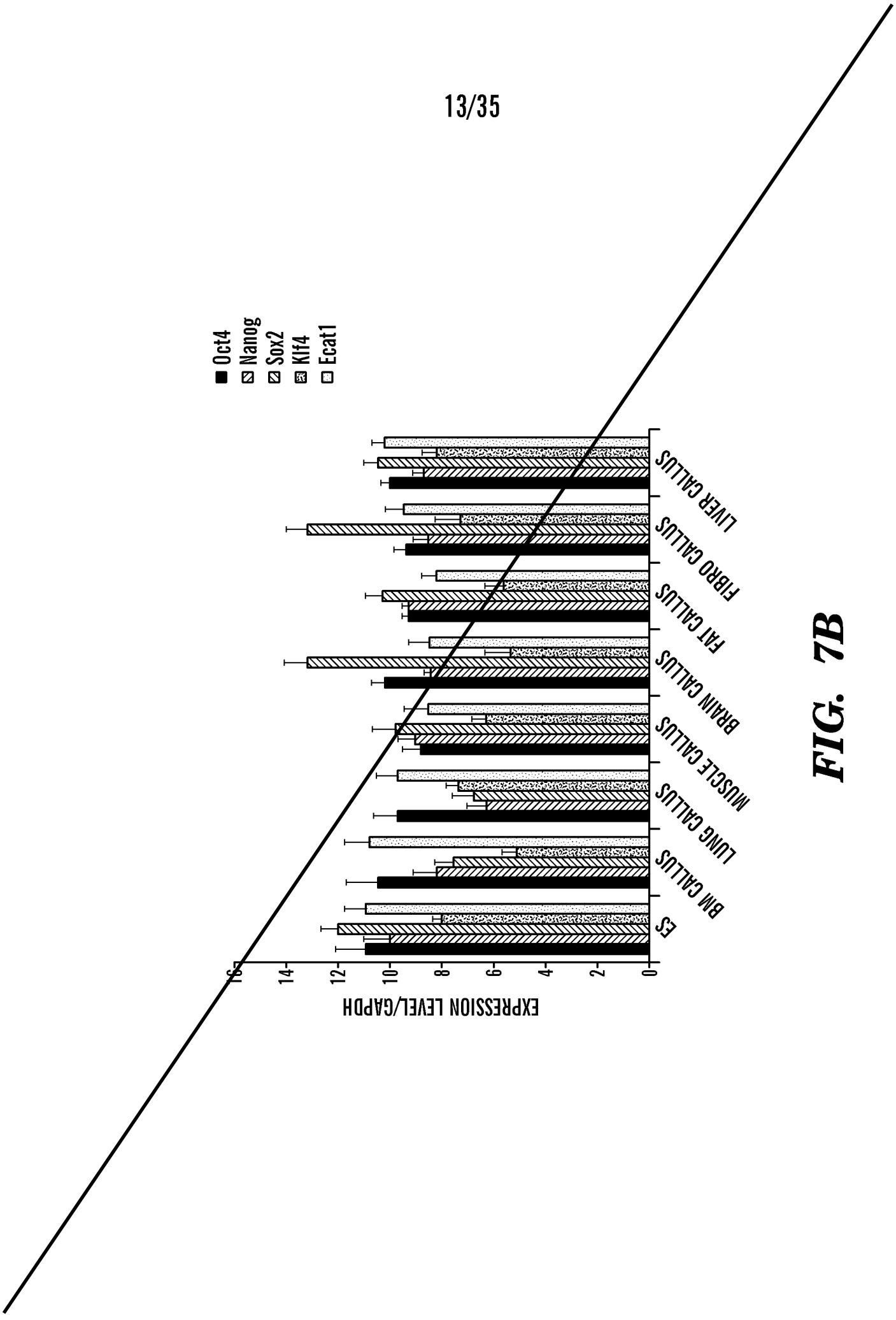

Oct4
Nanog
Sox2
Klf4
Ecat1
EXPRESSION LEVEL/GAPDH
0
2
4
6
8
10
12
14
16
ES
BM CALLUS
LUNG CALLUS
MUSCLE CALLUS
BRAIN CALLUS
FAT CALLUS
FIBRO CALLUS
LIVER CALLUS

FIG. 7B

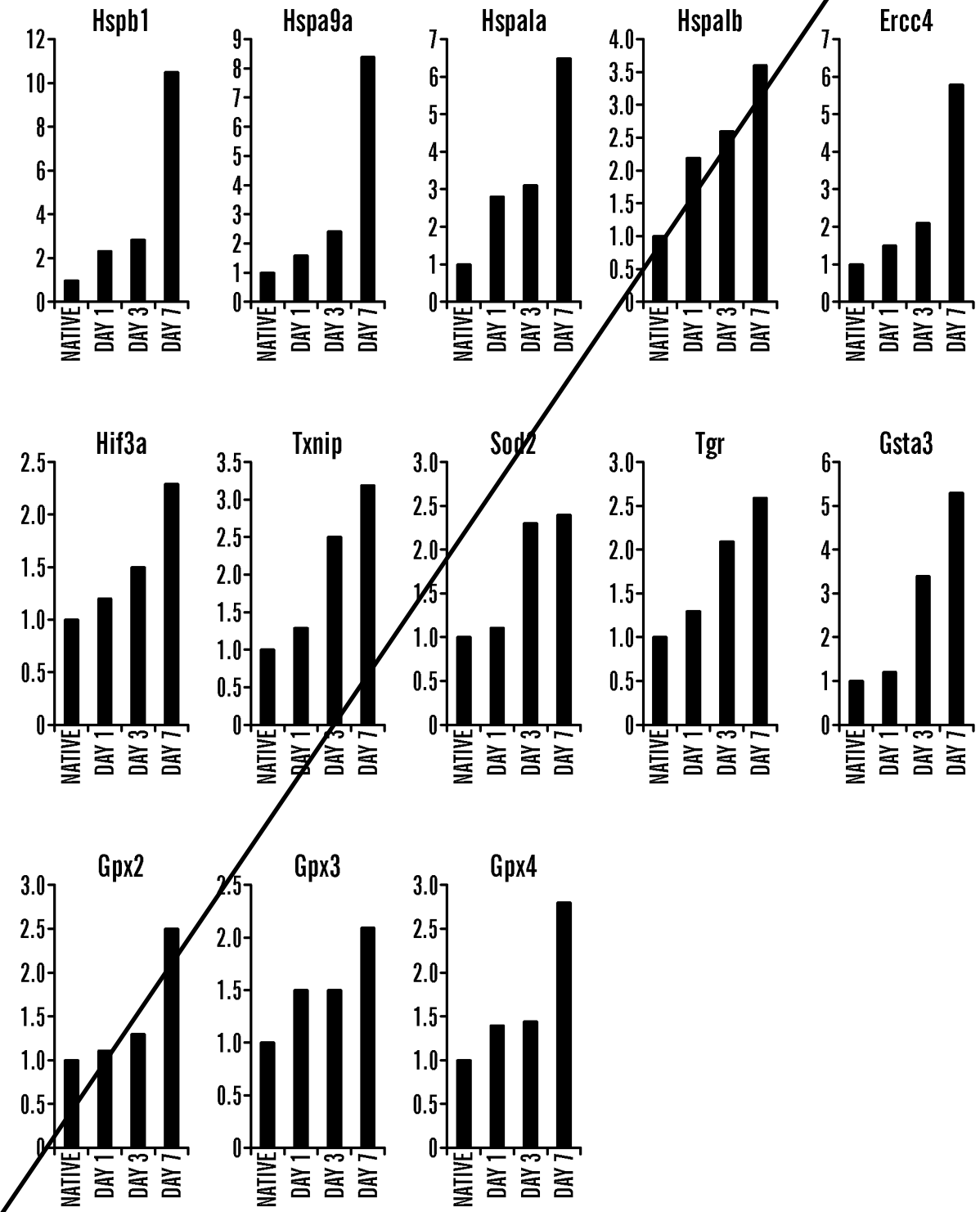

Hspb1
Hspa9a
Hspa1a
Hspa1b
Ercc4
Hif3a
Txnip
Sod2
Tgr
Gsta3
Gpx2
Gpx3
Gpx4
NATIVE
DAY 1
DAY 3
DAY 7

FIG. 8

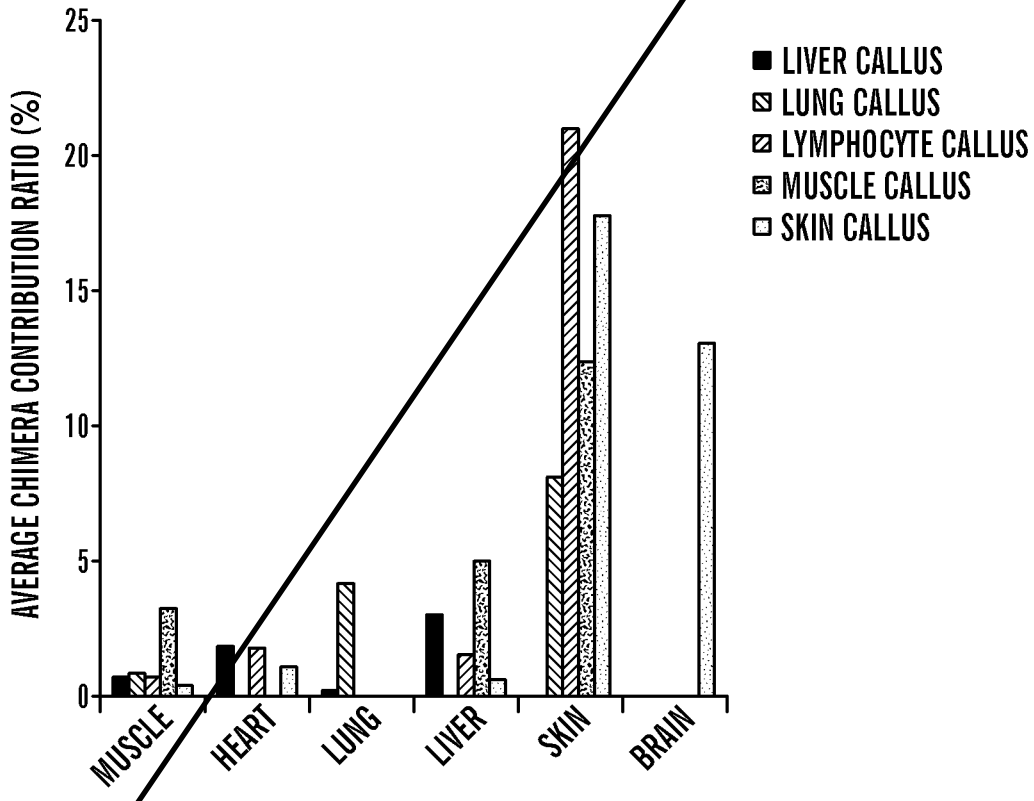

AVERAGE CHIMERA CONTRIBUTION RATIO (%)
25
20
15
10
5
0
MUSCLE
HEART
LUNG
LIVER
SKIN
BRAIN
LIVER CALLUS
LUNG CALLUS
LYMPHOCYTE CALLUS
MUSCLE CALLUS
SKIN CALLUS

FIG. 9

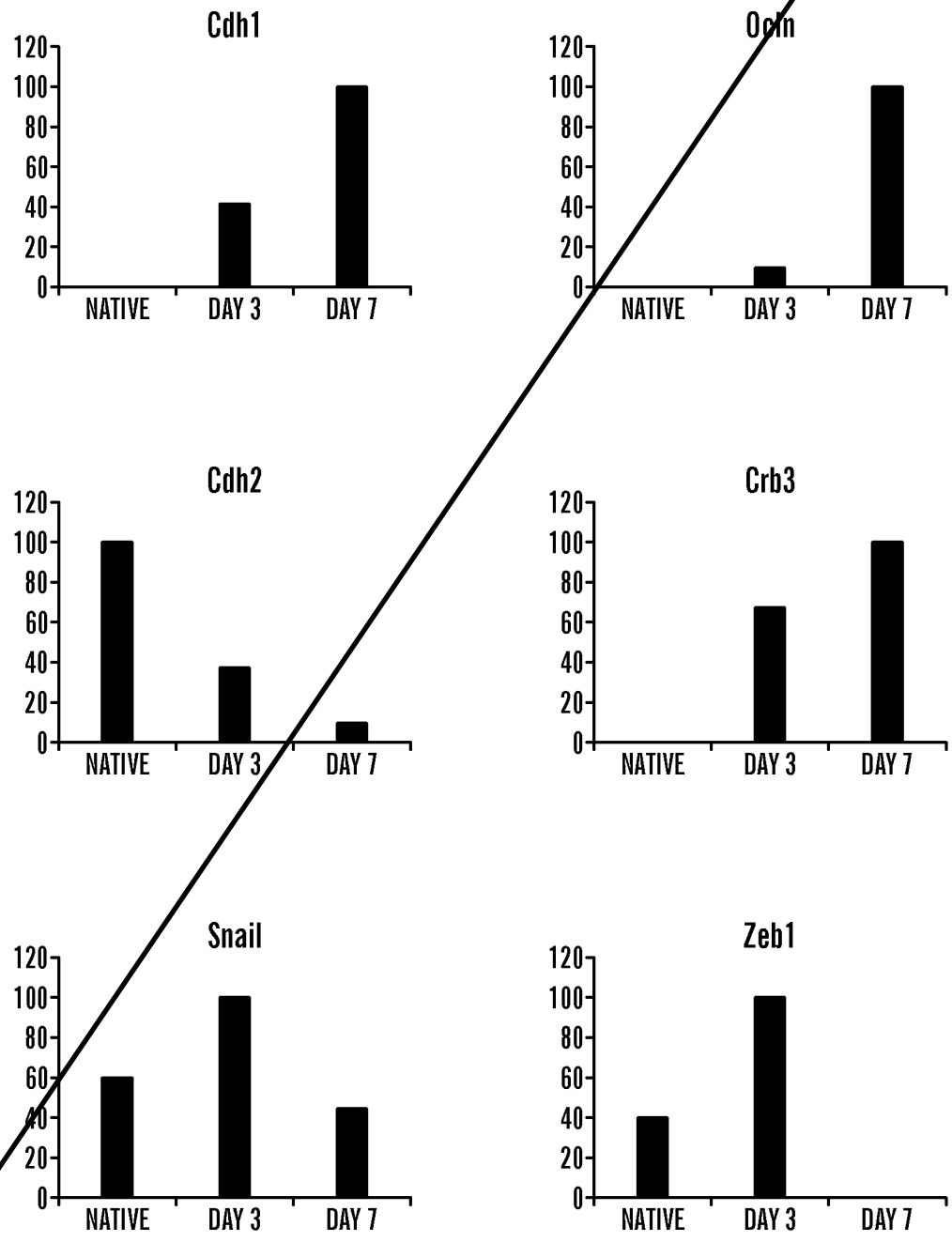

Cdh1
Ocln
Cdh2
Crb3
Snail
Zeb1
120
100
80
60
40
20
0
NATIVE
DAY 3
DAY 7

FIG. 10

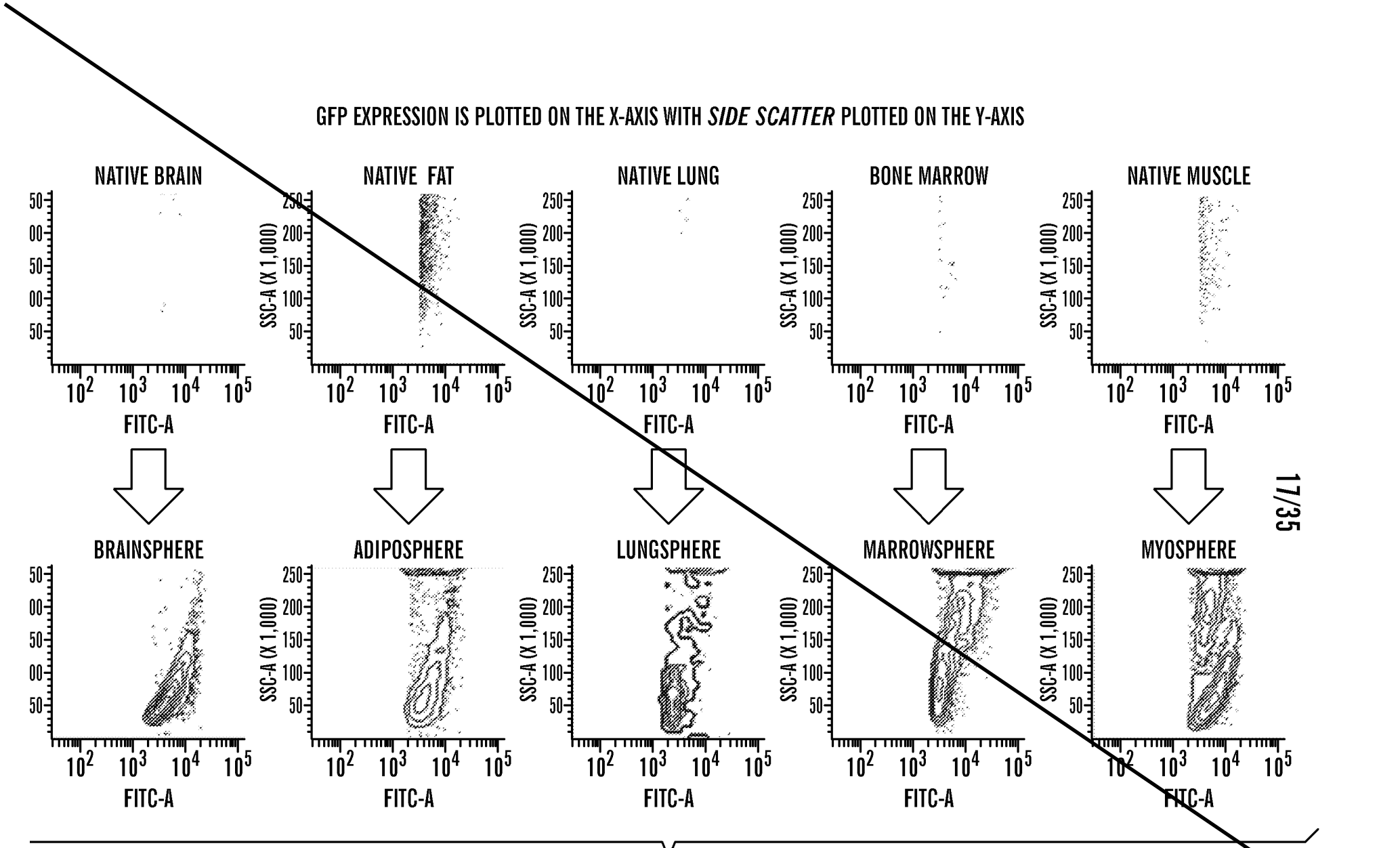

GFP EXPRESSION IS PLOTTED ON THE X-AXIS WITH *SIDE SCATTER* PLOTTED ON THE Y-AXIS
NATIVE BRAIN
NATIVE FAT
NATIVE LUNG
BONE MARROW
NATIVE MUSCLE
BRAINSPHERE
ADIPOSPHERE
LUNGSPHERE
MARROWSPHERE
MYOSPHERE
SSC-A (X 1,000)
FITC-A
17/35

FIG. 11

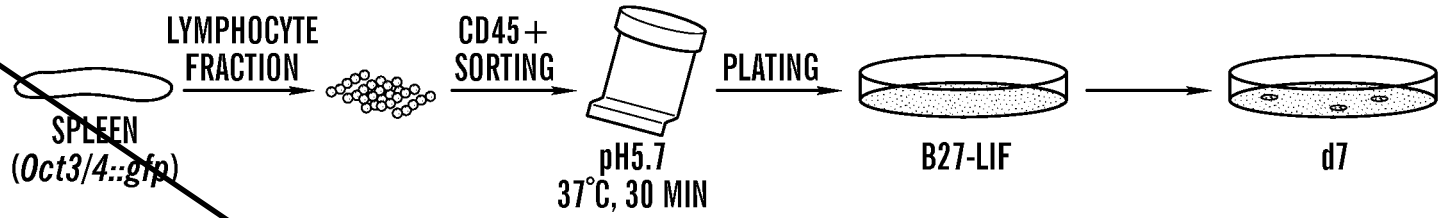


FIG. 12A

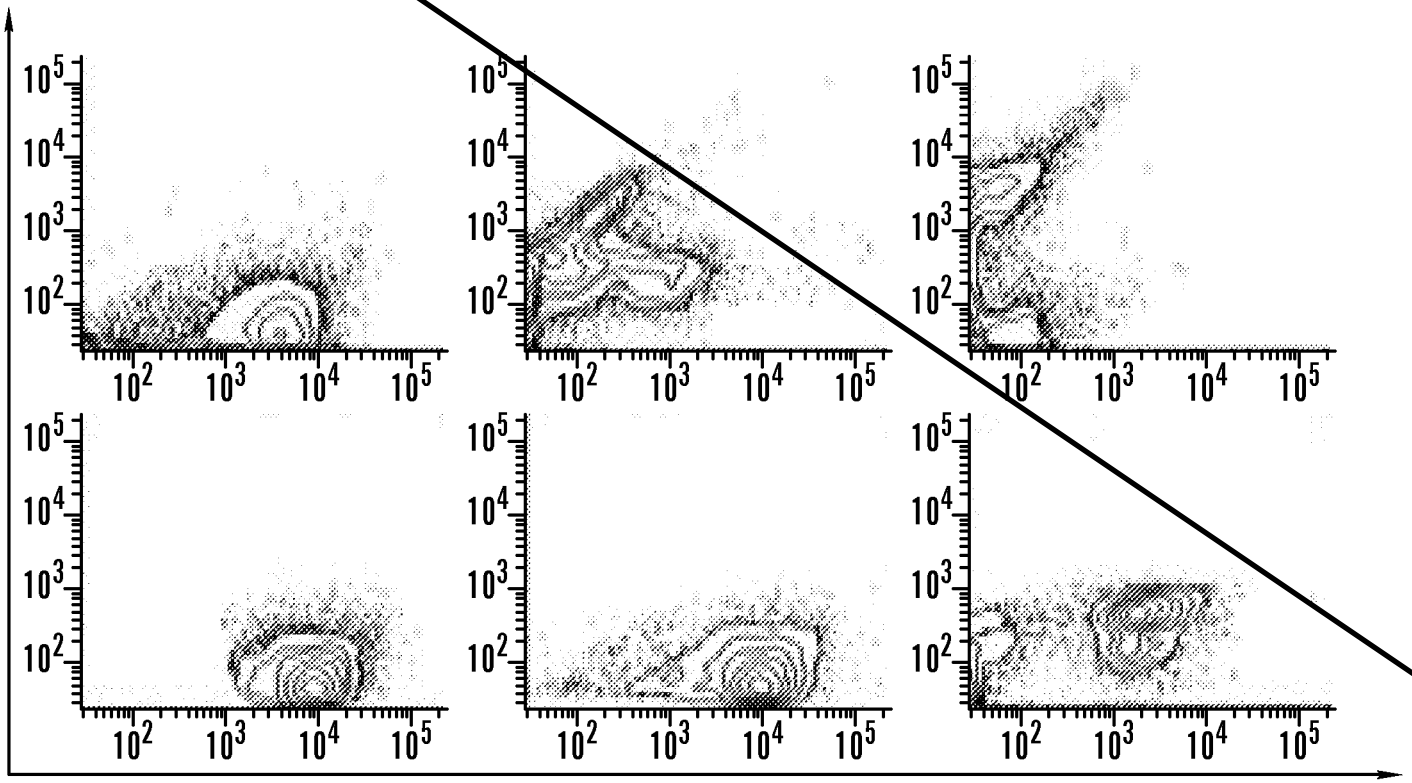


FIG. 12B

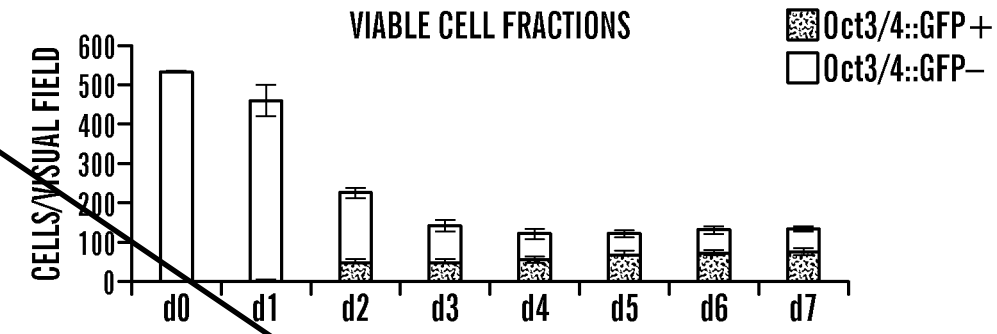


FIG. 12C

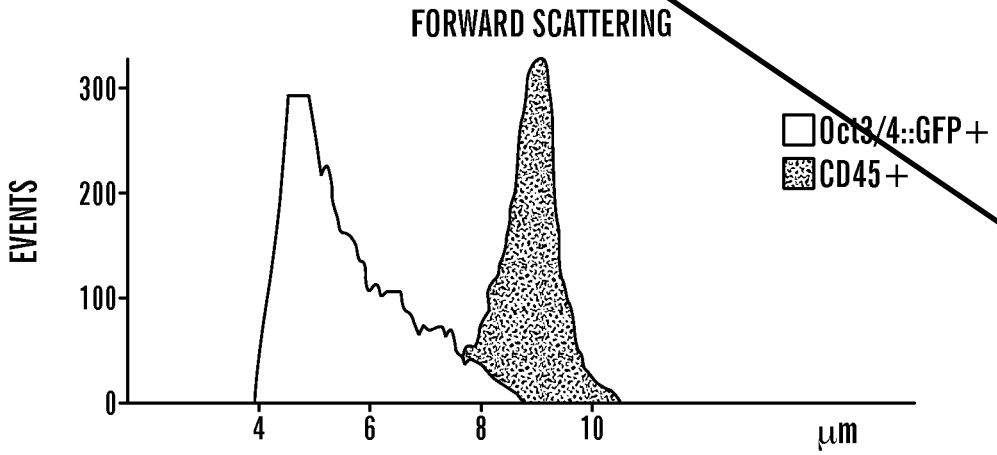


FIG. 12D

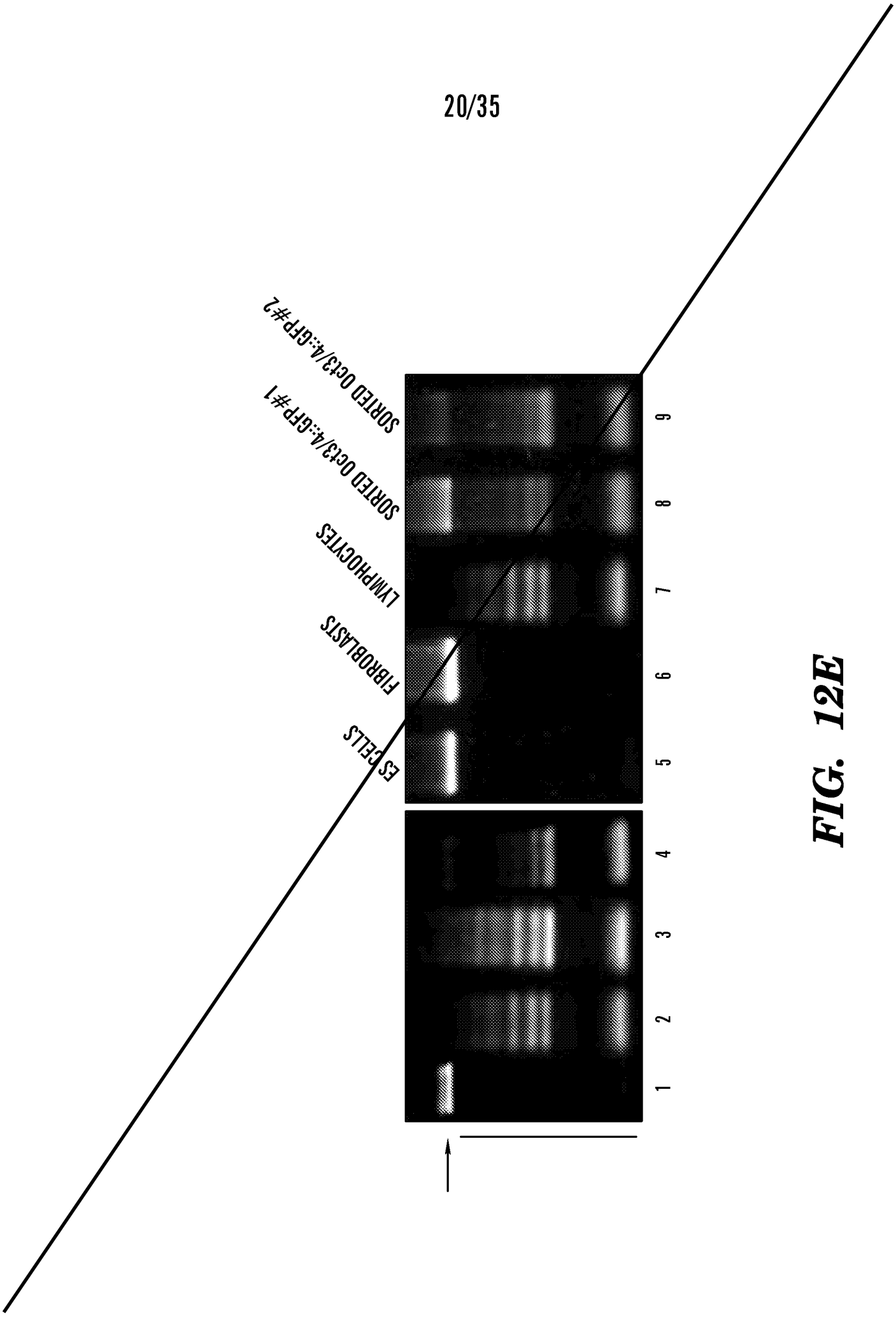

ES CELLS
FIBROBLASTS
LYMPHOCYTES
SORTED Oct3/4::GFP#1
SORTED Oct3/4::GFP#2
1
2
3
4
5
6
7
8
9

FIG. 12E

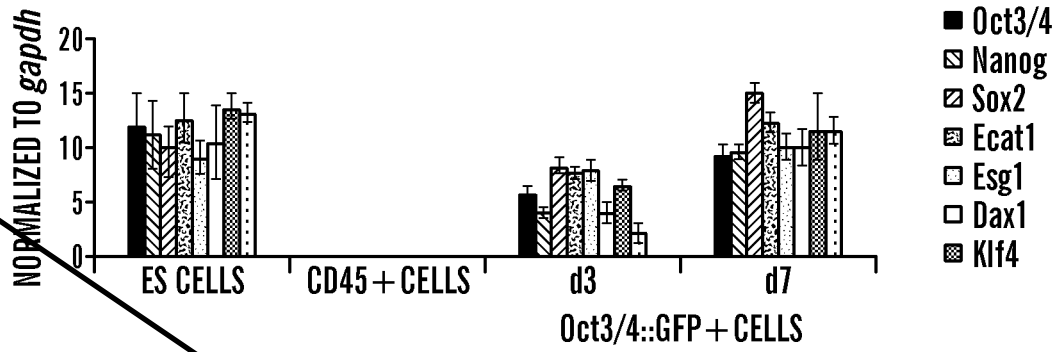


FIG. 13A

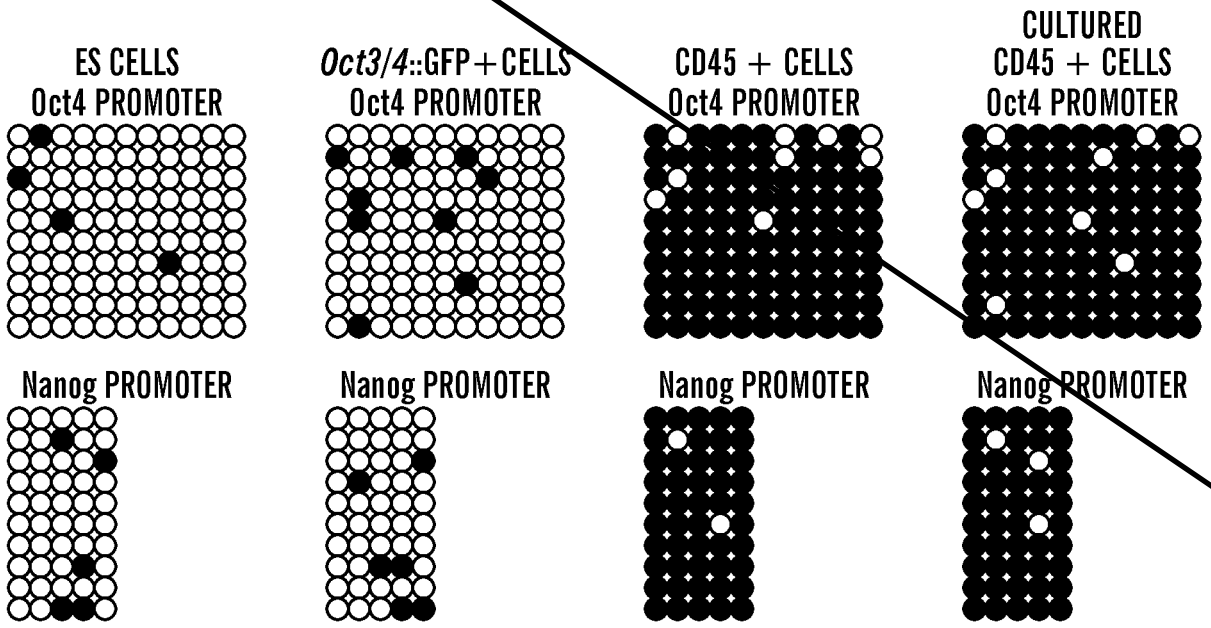


FIG. 13B

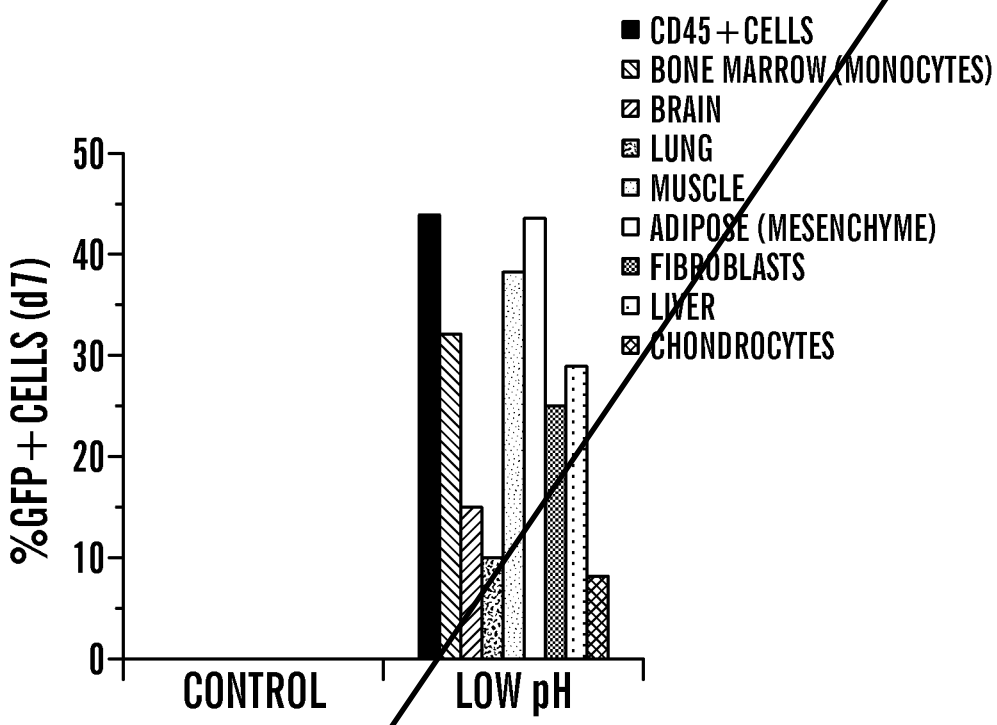


FIG. 14A

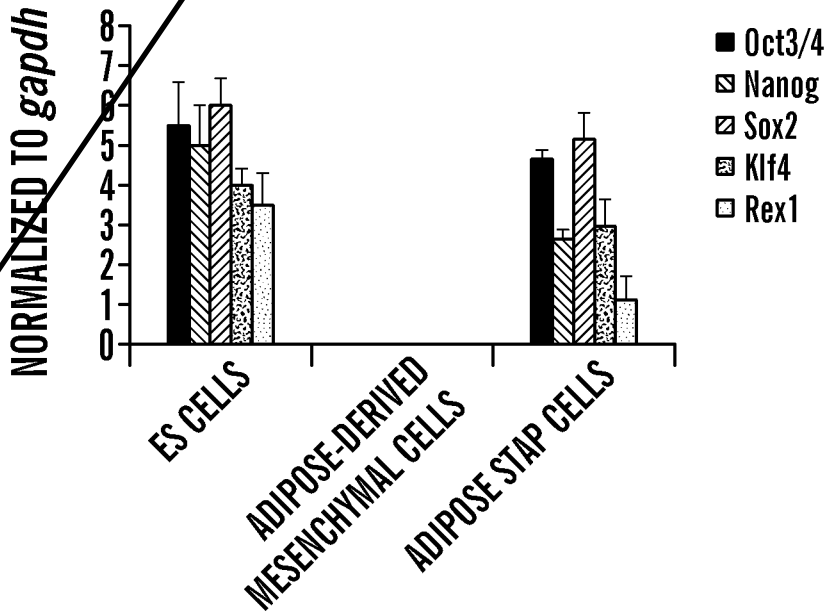


FIG. 14B

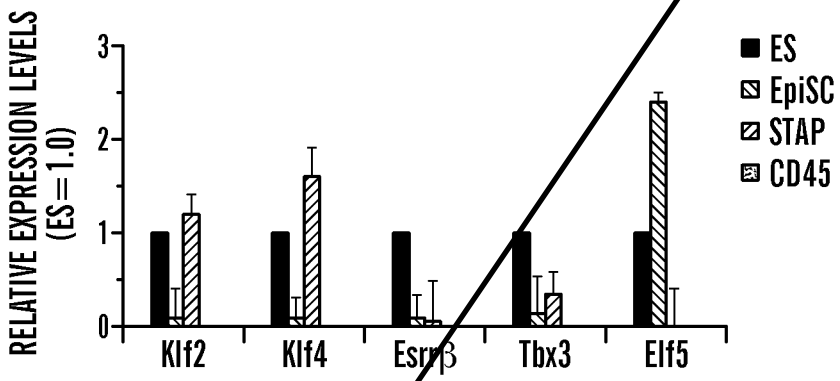


FIG. 15A

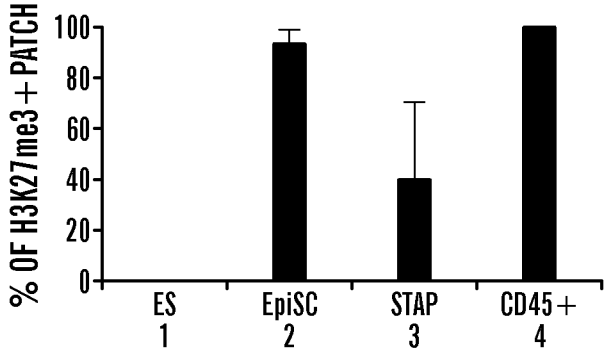


FIG. 15B

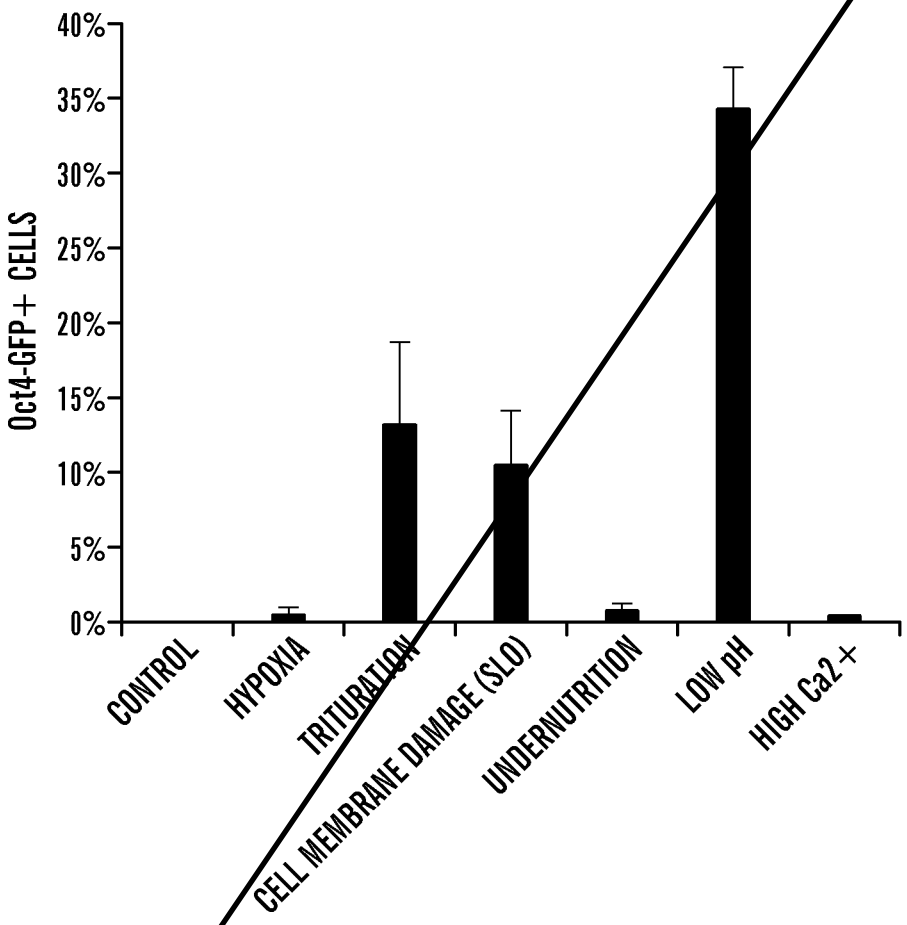

40%
35%
30%
25%
20%
15%
10%
5%
0%
Oct4-GFP+ CELLS
CONTROL
HYPOXIA
TRITURATION
CELL MEMBRANE DAMAGE (SLO)
UNDERNUTRITION
LOW pH
HIGH Ca2+

FIG. 16A

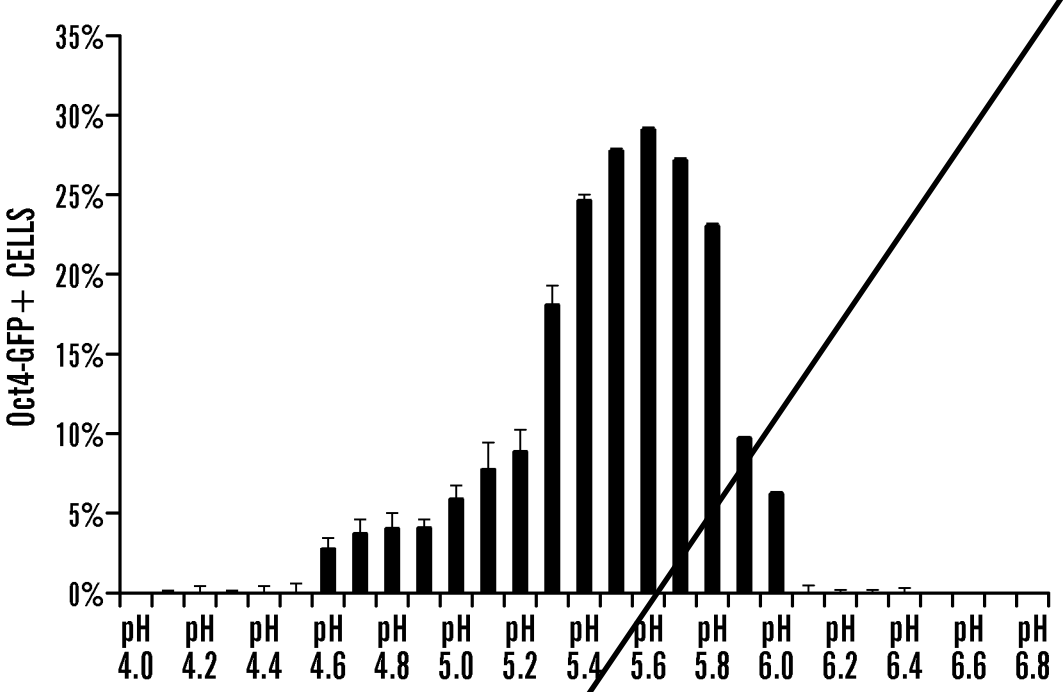


FIG. 16B

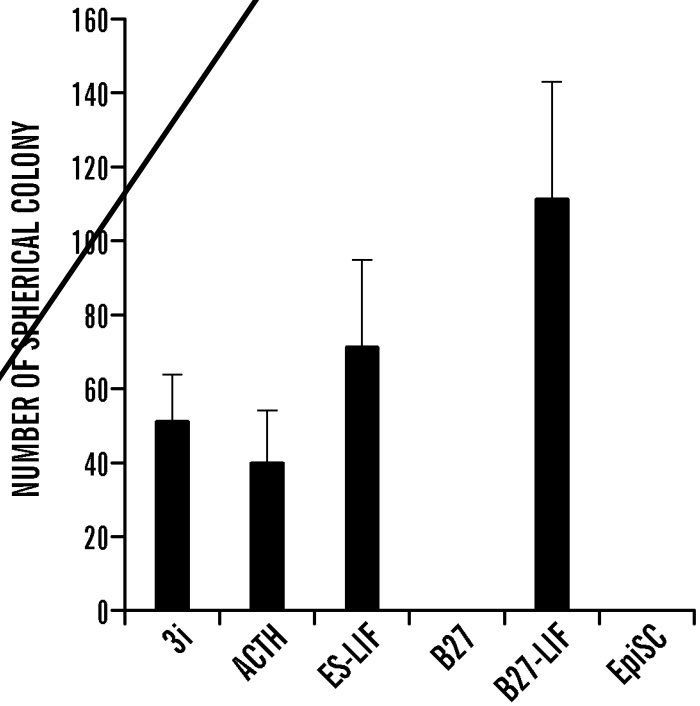


FIG. 16C

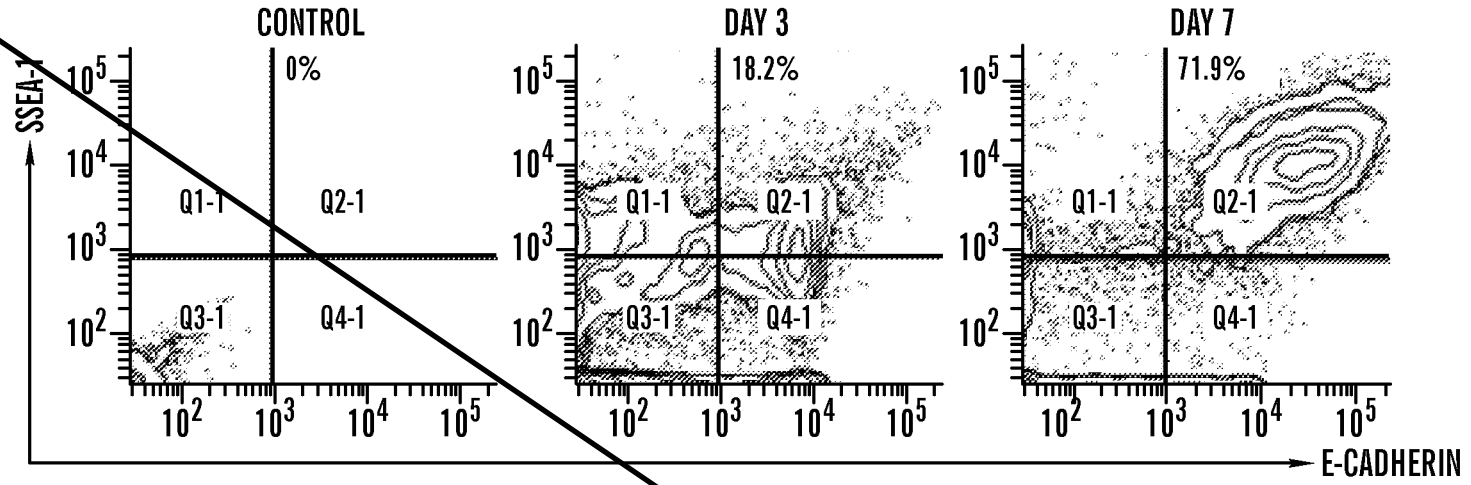


FIG. 17A

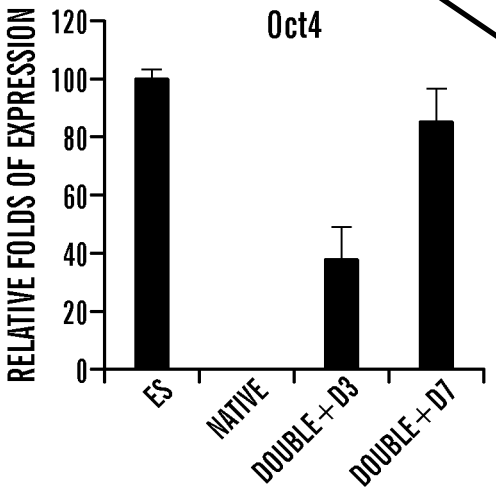


FIG. 17B

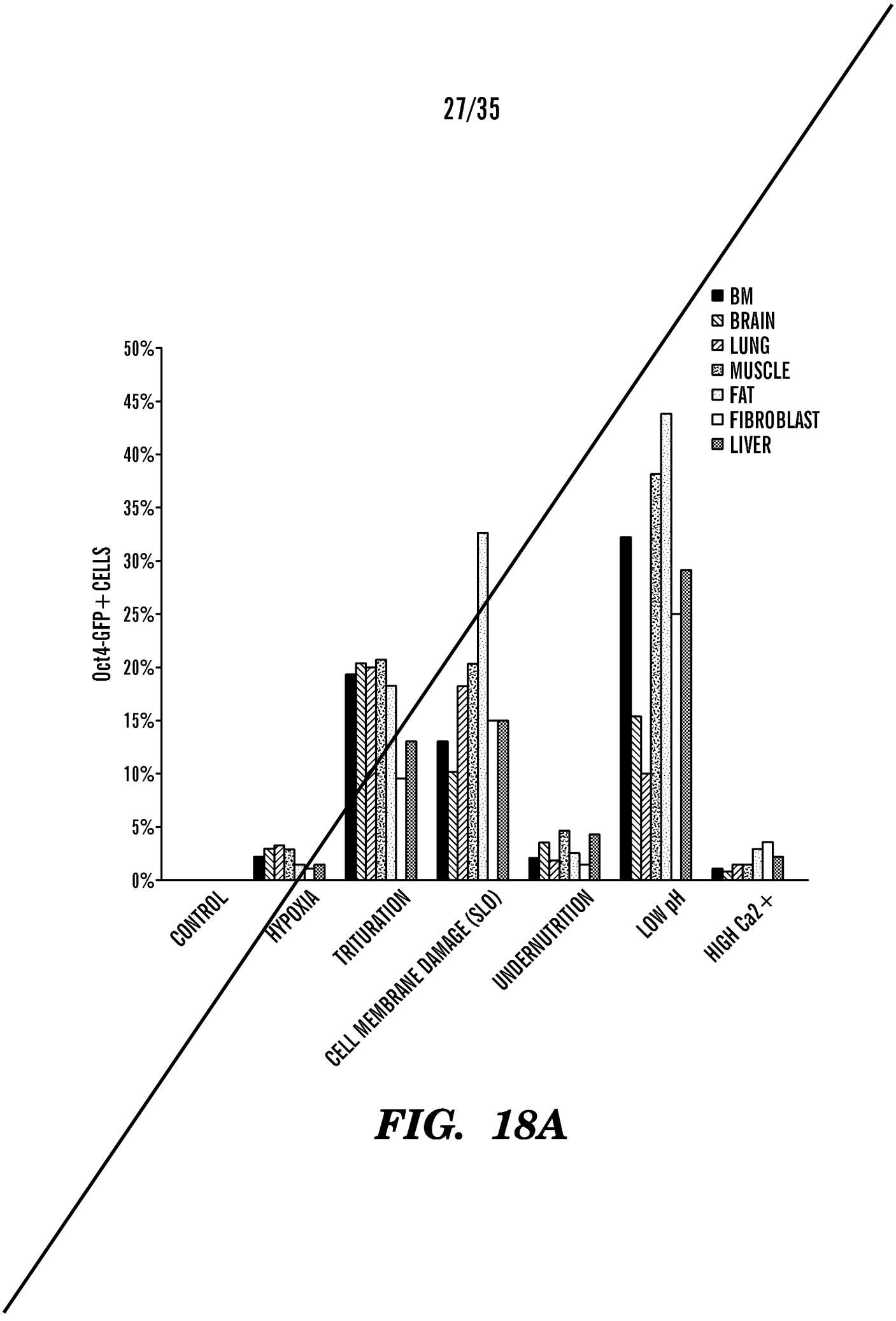

BM
BRAIN
LUNG
MUSCLE
FAT
FIBROBLAST
LIVER
50%
45%
40%
35%
30%
25%
20%
15%
10%
5%
0%
Oct4-GFP+CELLS
CONTROL
HYPOXIA
TRITURATION
CELL MEMBRANE DAMAGE (SLO)
UNDERNUTRITION
LOW pH
HIGH Ca2+

FIG. 18A

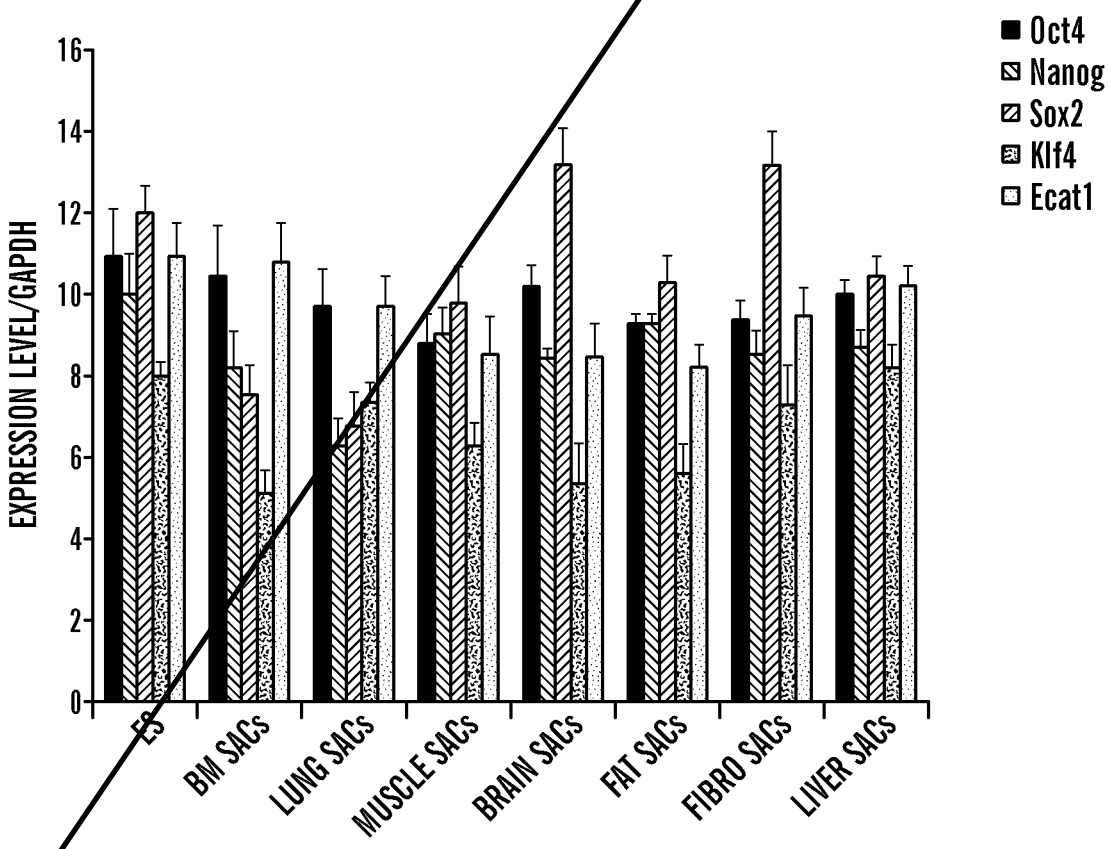

EXPRESSION LEVEL/GAPDH
16
14
12
10
8
6
4
2
0
ES
BM SACs
LUNG SACs
MUSCLE SACs
BRAIN SACs
FAT SACs
FIBRO SACs
LIVER SACs
Oct4
Nanog
Sox2
Klf4
Ecat1

FIG. 18B

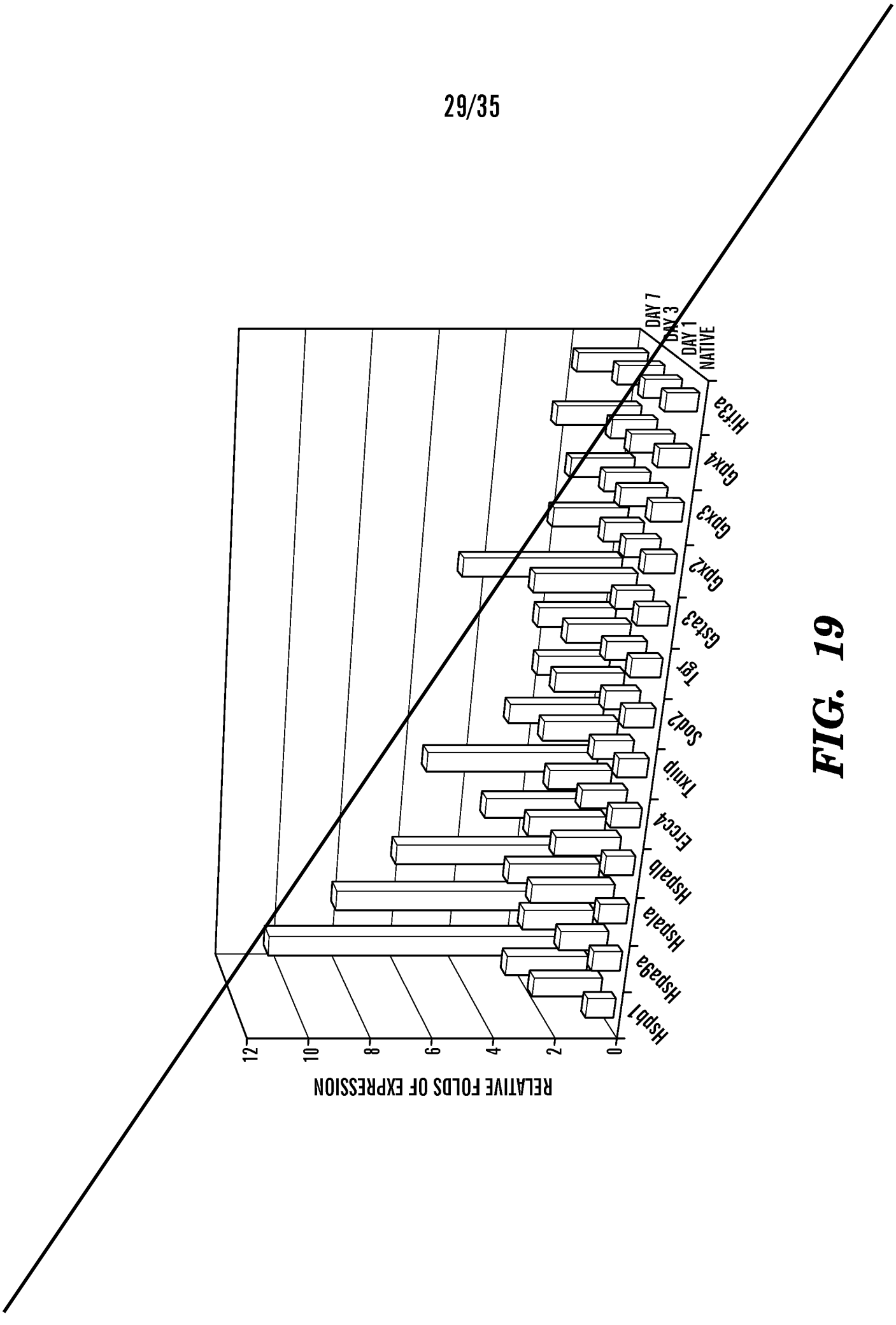

RELATIVE FOLDS OF EXPRESSION
0
2
4
6
8
10
12
Hsbb1
Hspa9a
Hspa1a
Hspa1b
Ercc4
Txnip
Sod2
Tgr
Gsta3
Gpx2
Gpx3
Gpx4
Hif3a
NATIVE
DAY 1
DAY 3
DAY 7

FIG. 19

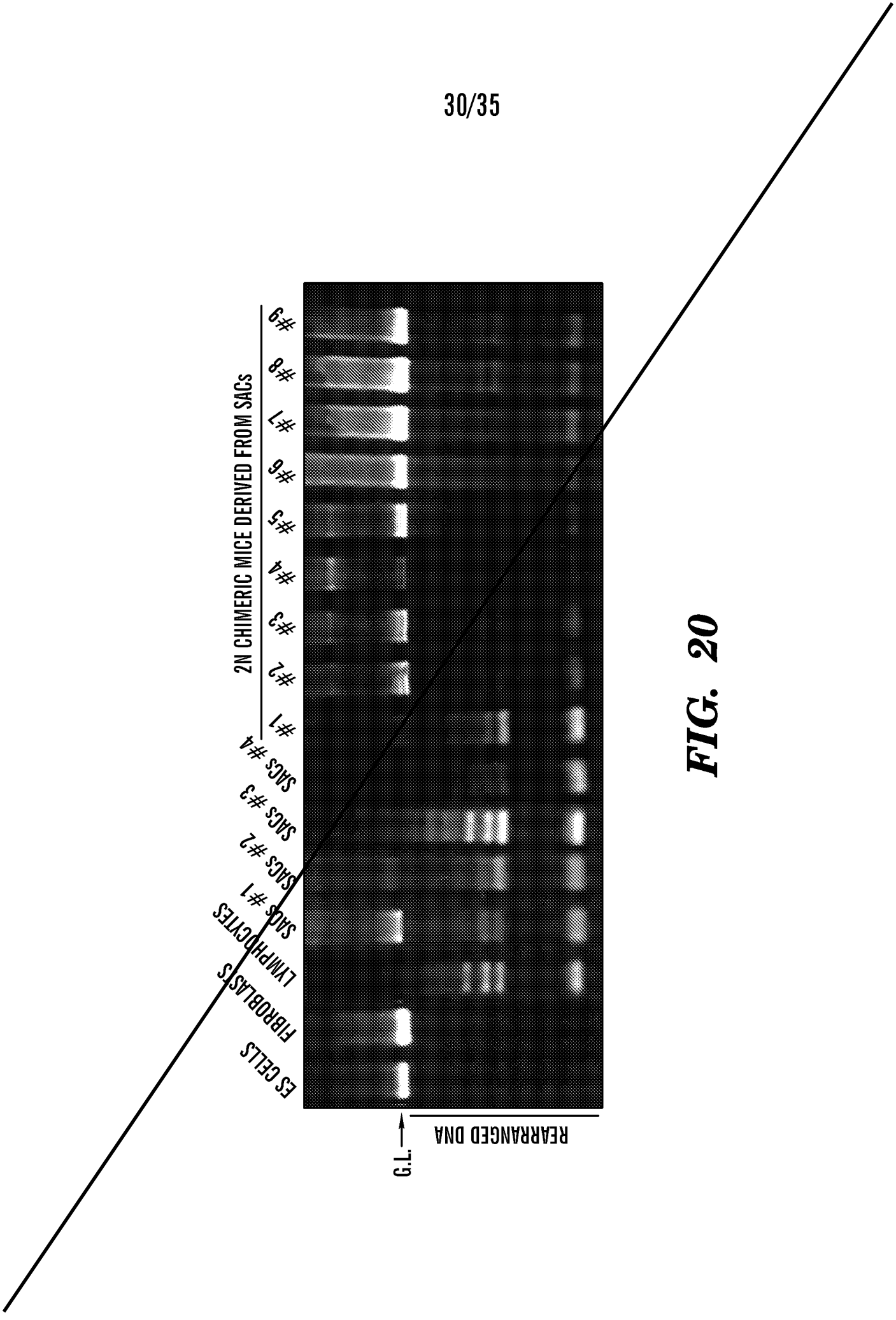

REARRANGED DNA
G.L.
ES CELLS
FIBROBLASTS
LYMPHOCYTES
SACs #1
SACs #2
SACs #3
SACs #4
2N CHIMERIC MICE DERIVED FROM SACs
#1
#2
#3
#4
#5
#6
#7
#8
#9

FIG. 20

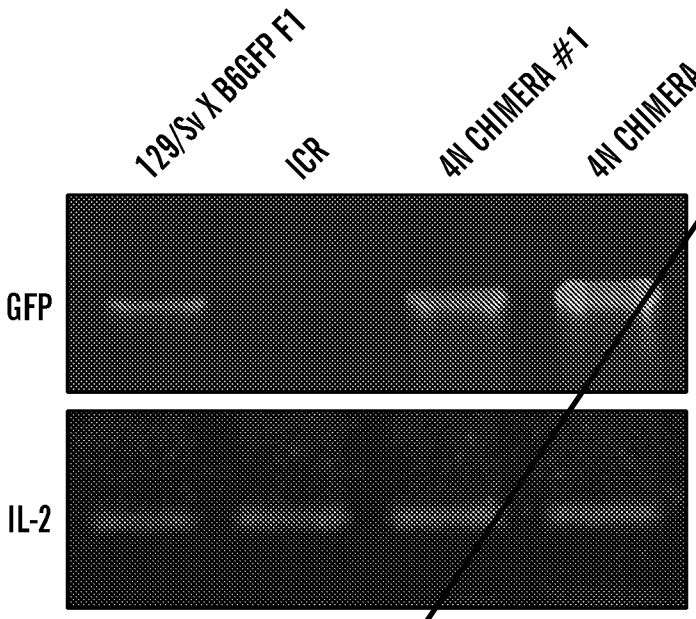

129/Sv X B6GFP F1
ICR
4N CHIMERA #1
4N CHIMERA #2
GFP
IL-2

FIG. 21

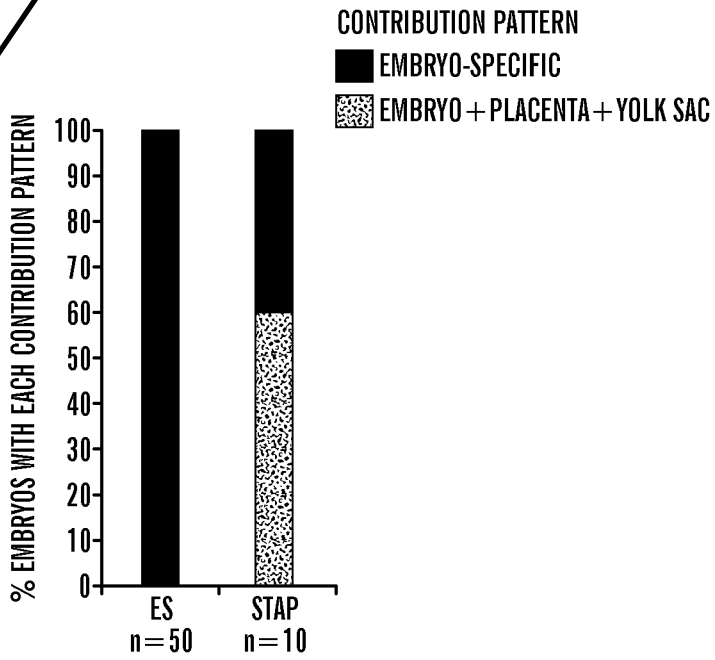

CONTRIBUTION PATTERN
EMBRYO-SPECIFIC
EMBRYO + PLACENTA + YOLK SAC
% EMBRYOS WITH EACH CONTRIBUTION PATTERN
100
90
80
70
60
50
40
30
20
10
0
ES
n=50
STAP
n=10

FIG. 22

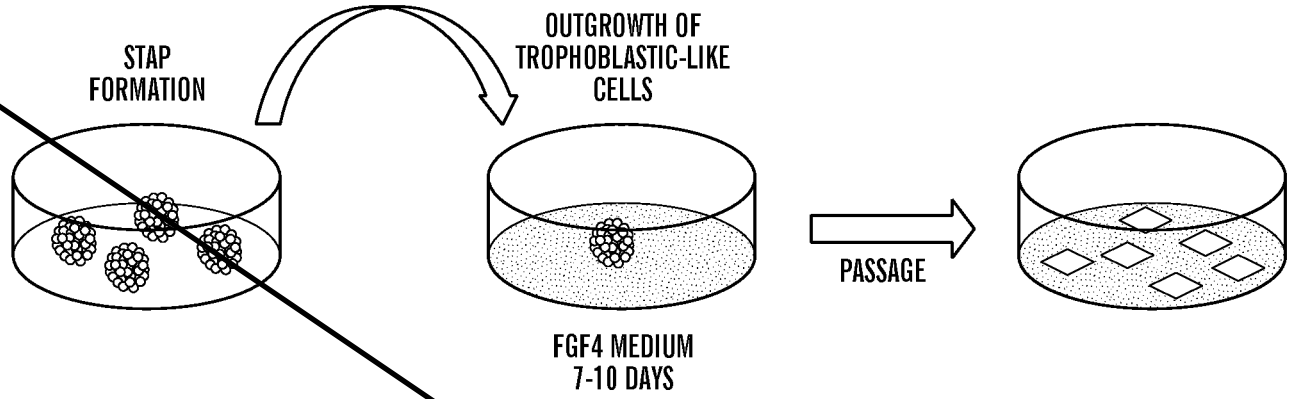


FIG. 23A

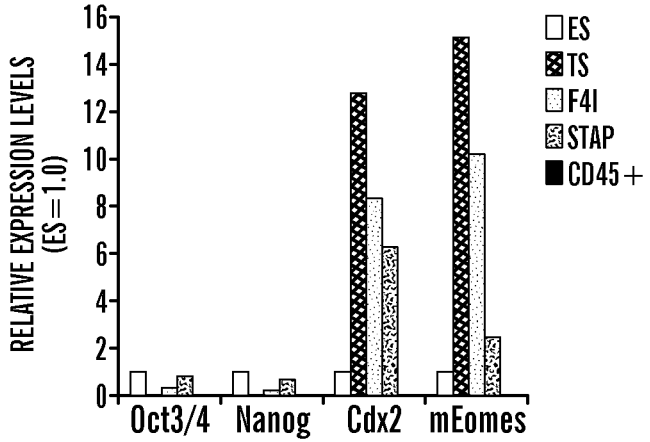


FIG. 23B

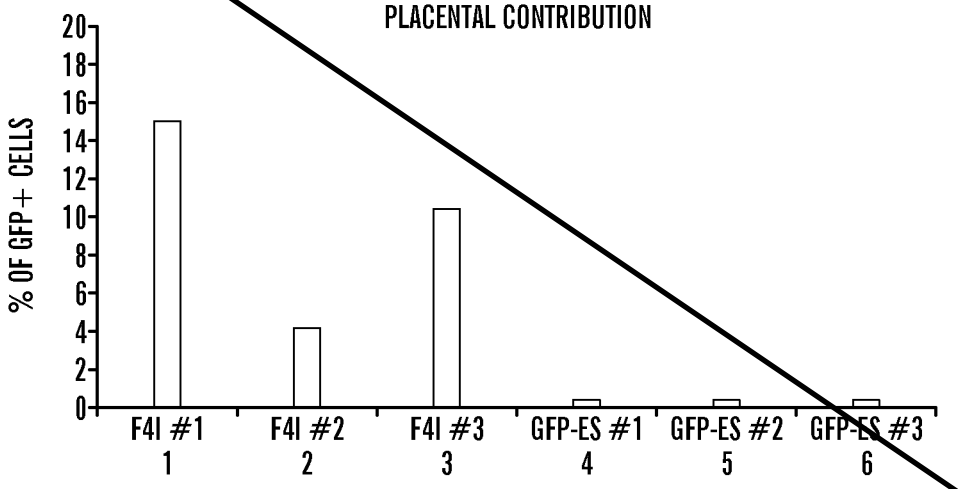


FIG. 23C

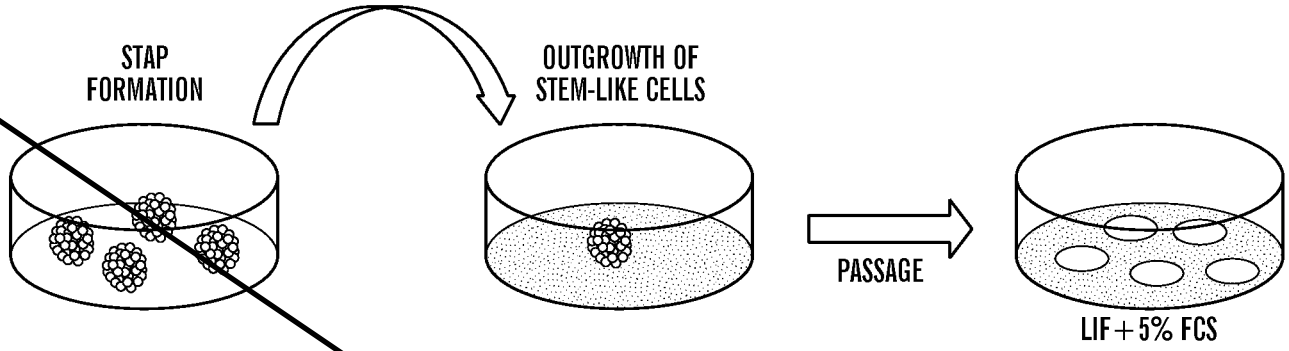


FIG. 24A

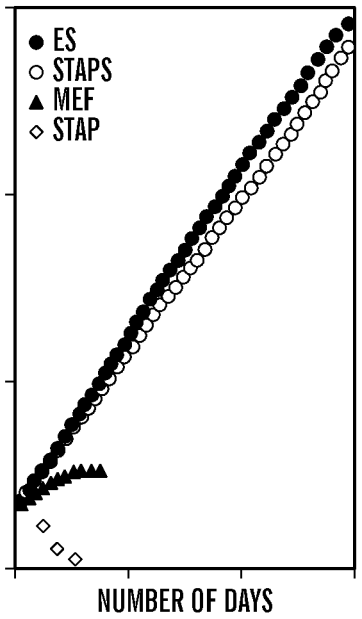


FIG. 24B

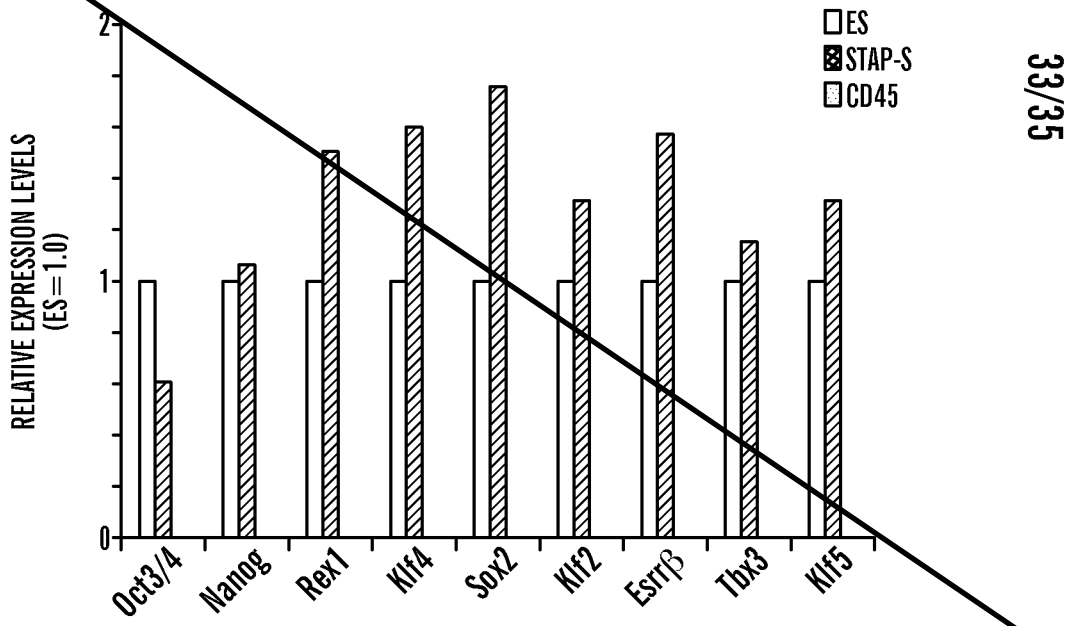


FIG. 24C

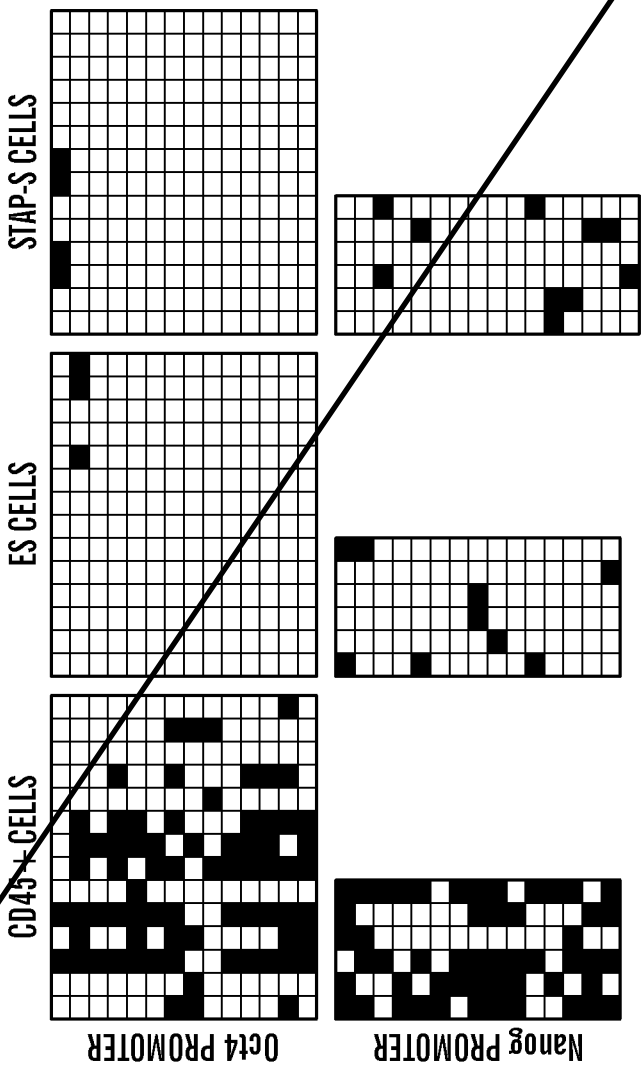

STAP-S CELLS
ES CELLS
CD45+ CELLS
Oct4 PROMOTER
Nanog PROMOTER

FIG. 24D

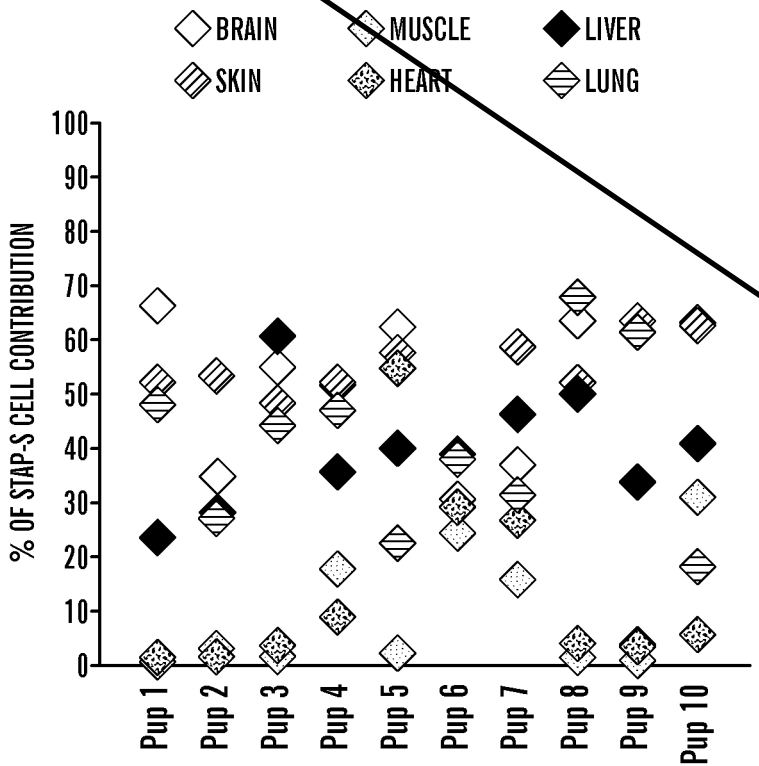


FIG. 25A

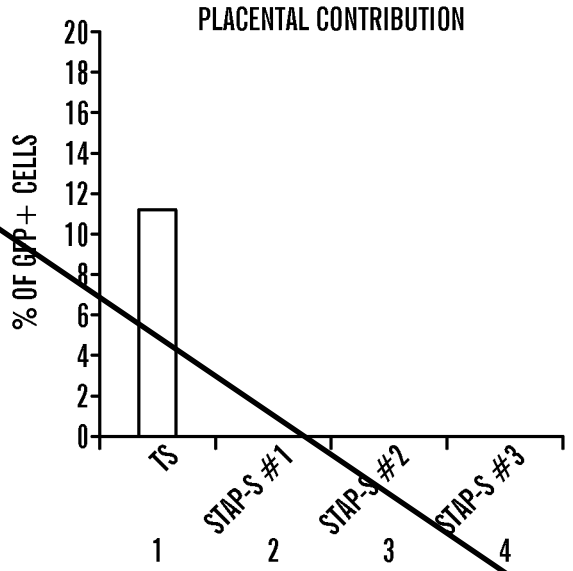


FIG. 25B

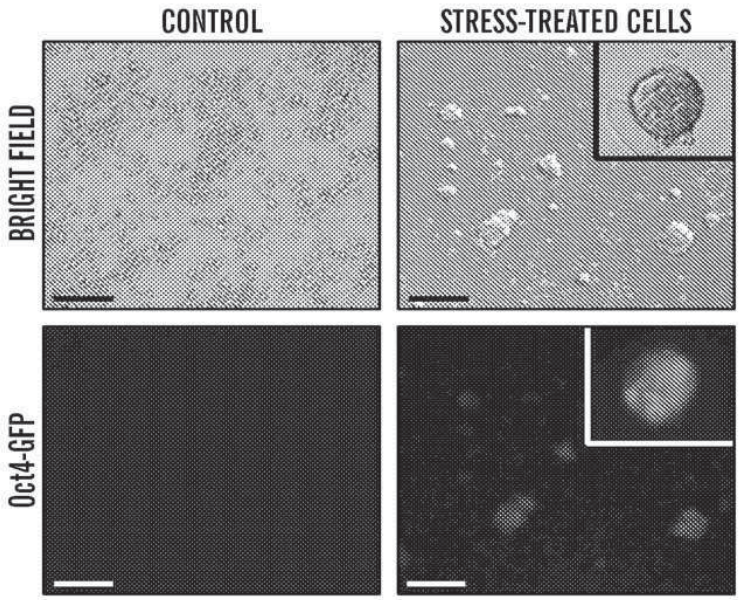

CONTROL
STRESS-TREATED CELLS
BRIGHT FIELD
Oct4-GFP

FIG. 1A

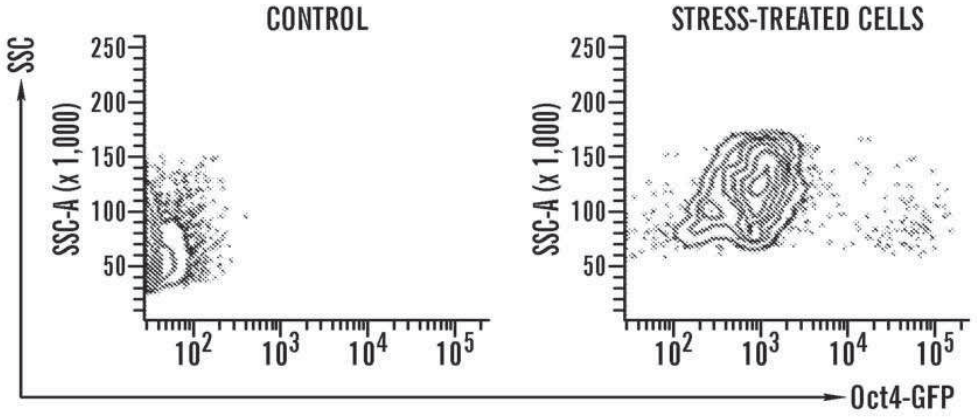

CONTROL
STRESS-TREATED CELLS
SSC
SSC-A (x 1,000)
250
200
150
100
50
10^2
10^3
10^4
10^5
Oct4-GFP

FIG. 1B

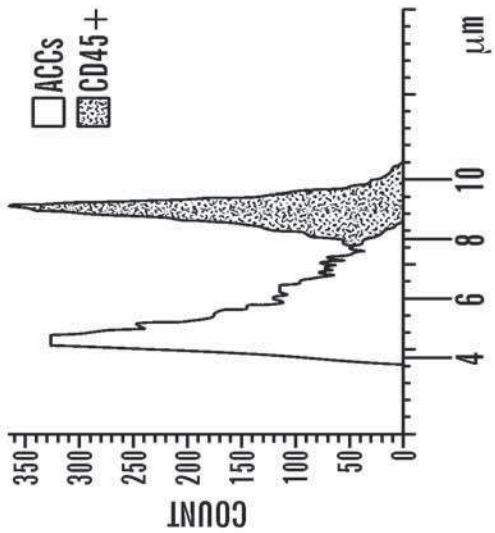

ACCs
CD45+
COUNT
350
300
250
200
150
100
50
0
4
6
8
10
μm

FIG. 1C

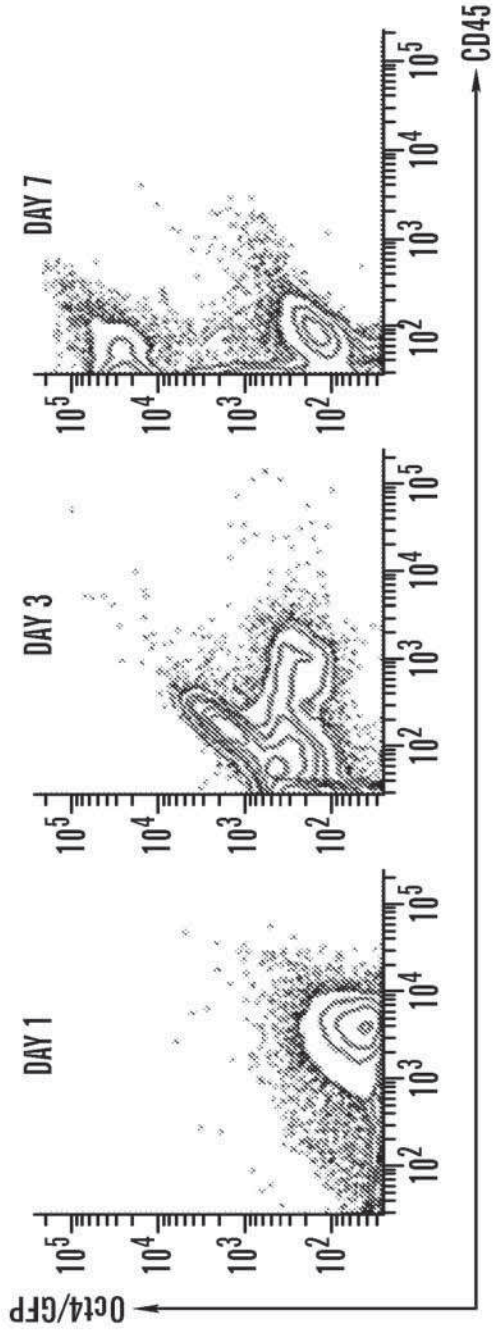

DAY 1
DAY 3
DAY 7
Oct4/GFP
CD45
10^2
10^3
10^4
10^5

FIG. 1D

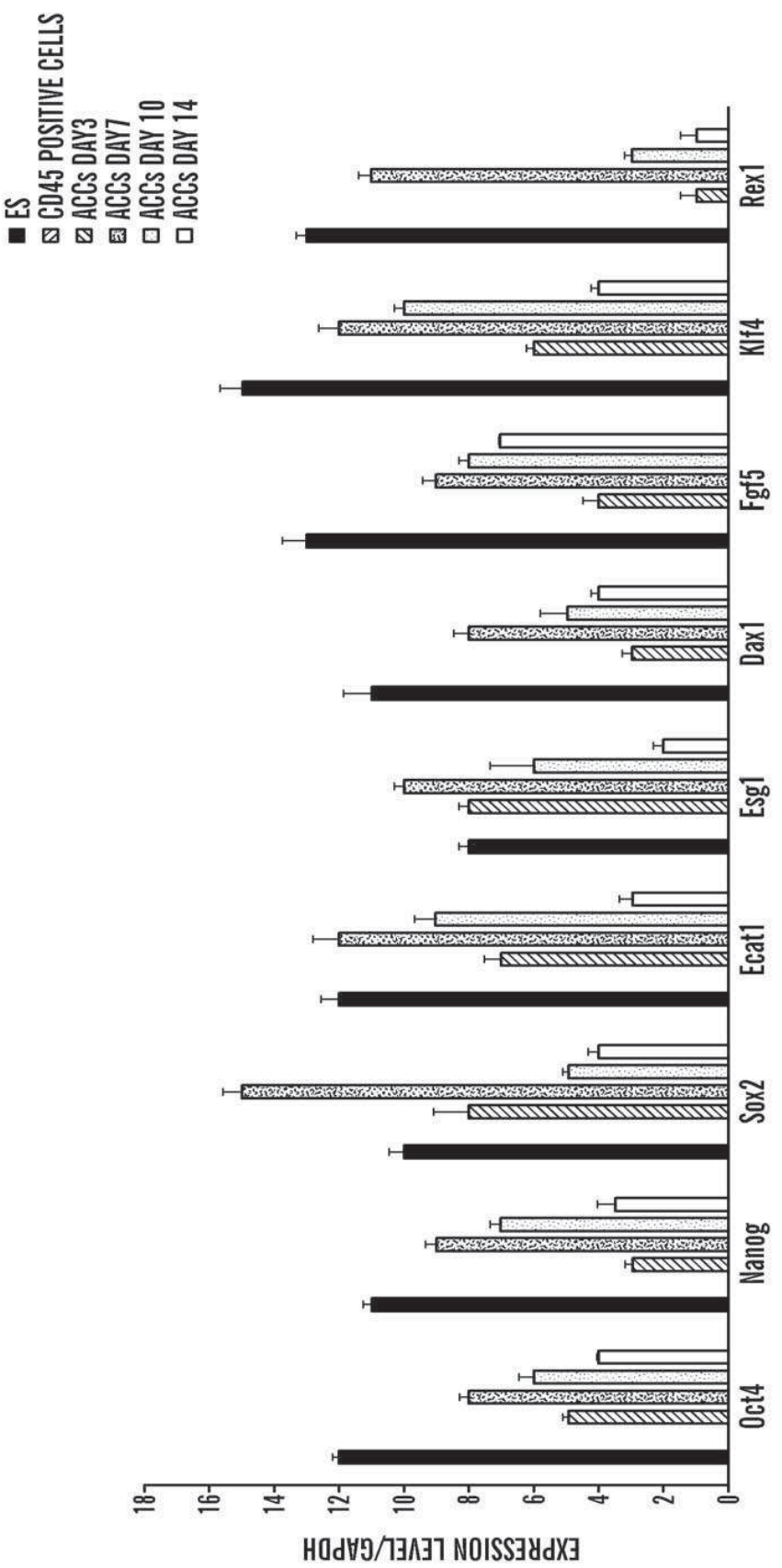

ES
CD45 POSITIVE CELLS
ACCs DAY3
ACCs DAY7
ACCs DAY 10
ACCs DAY 14
EXPRESSION LEVEL/GAPDH
0
2
4
6
8
10
12
14
16
18
Oct4
Nanog
Sox2
Ecat1
Esg1
Dax1
Fgf5
Klf4
Rex1

FIG. 2A

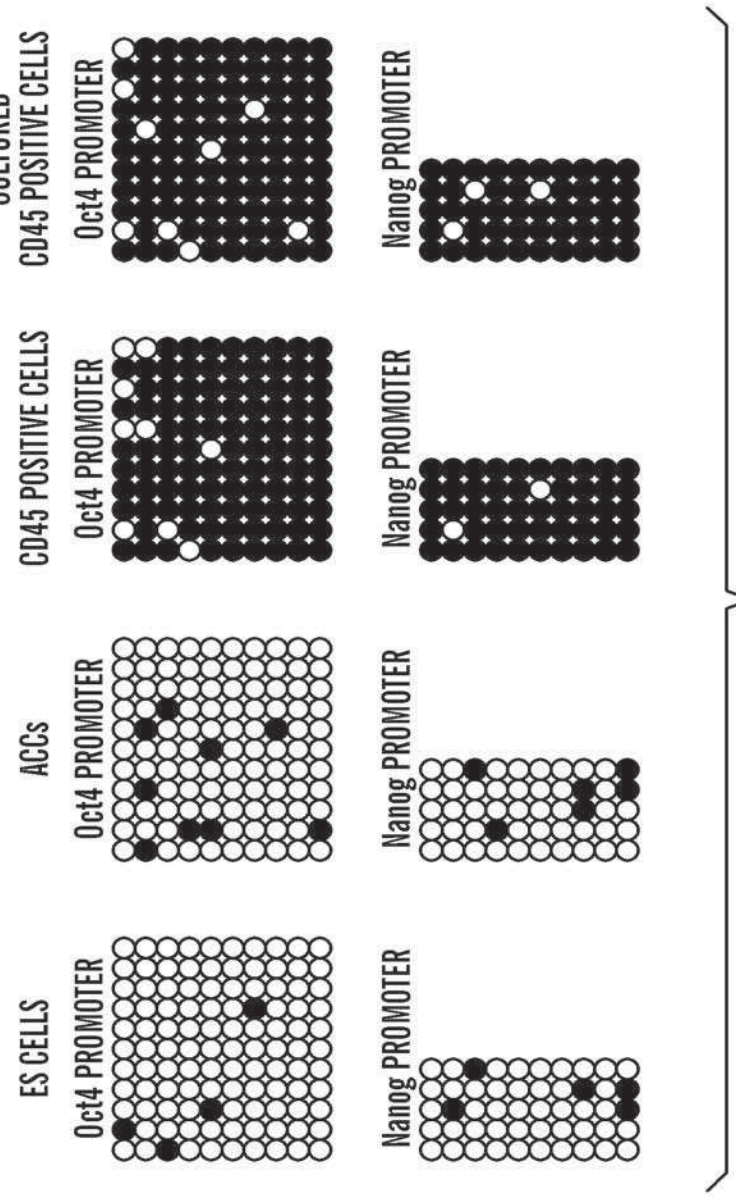

ES CELLS
Oct4 PROMOTER
Nanog PROMOTER
ACCs
Oct4 PROMOTER
Nanog PROMOTER
CD45 POSITIVE CELLS
Oct4 PROMOTER
Nanog PROMOTER
CULTURED
CD45 POSITIVE CELLS
Oct4 PROMOTER
Nanog PROMOTER

FIG. 2B

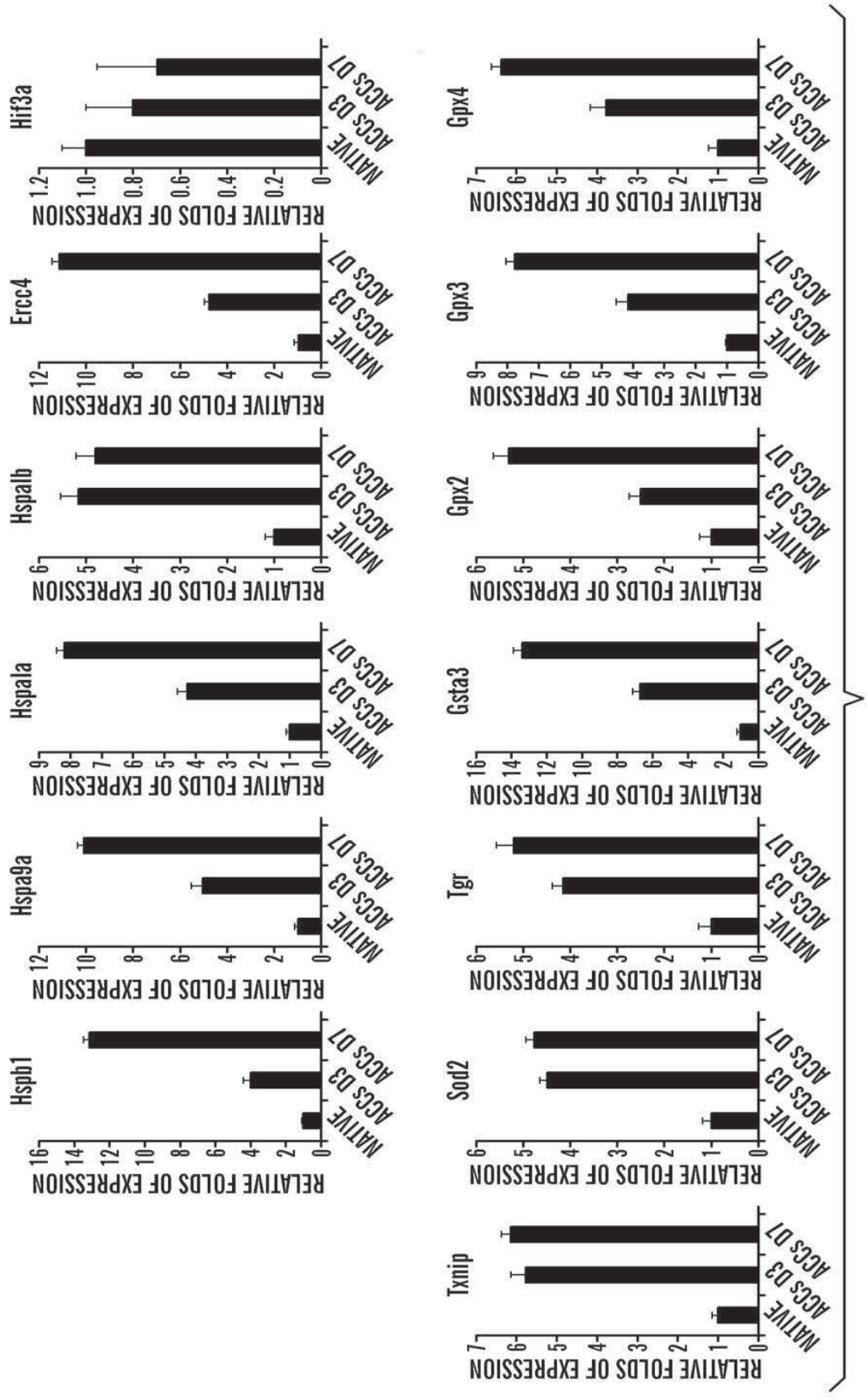

Txnip
Sod2
Tgr
Gsta3
Gpx2
Gpx3
Gpx4
Hspb1
Hspa9a
Hspala
Hspalb
Ercc4
Hif3a
RELATIVE FOLDS OF EXPRESSION
NATIVE
ACCS D3
ACCS D7

FIG. 3A

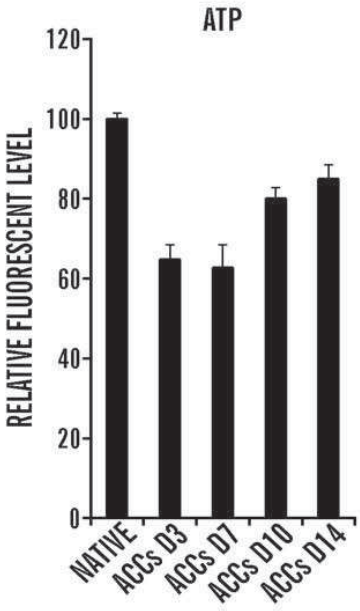


FIG. 3B

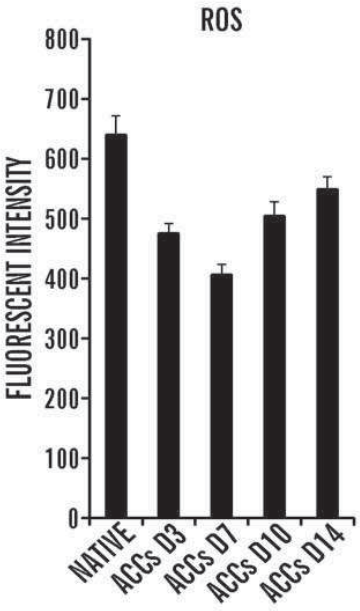


FIG. 3C

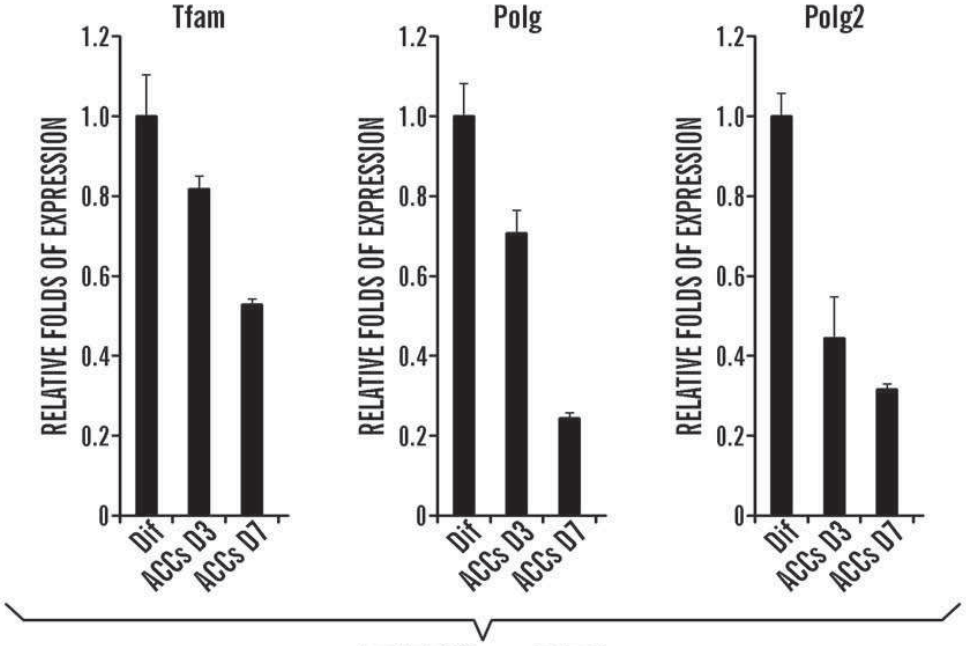


FIG. 3D

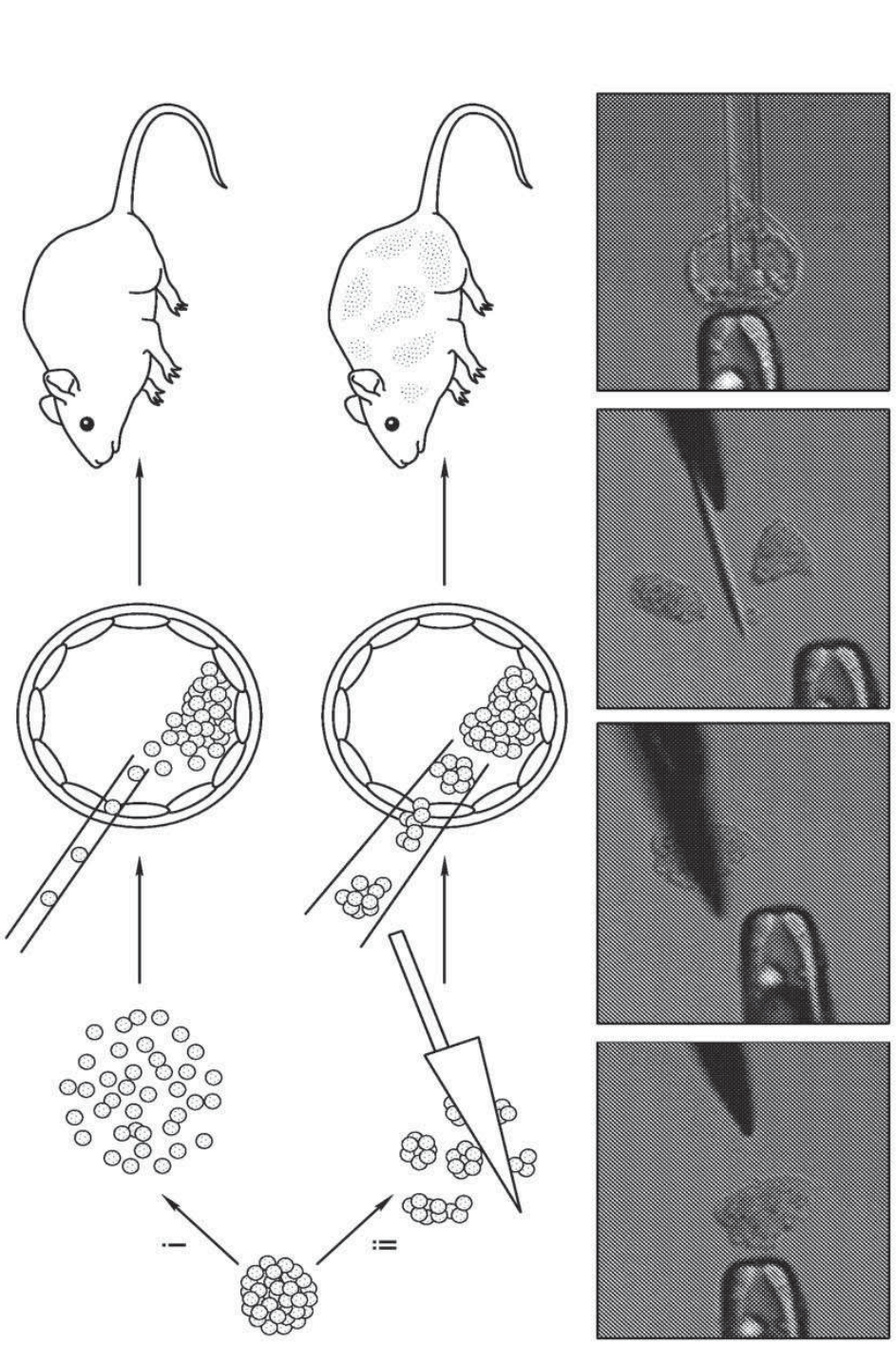


FIG. 4A

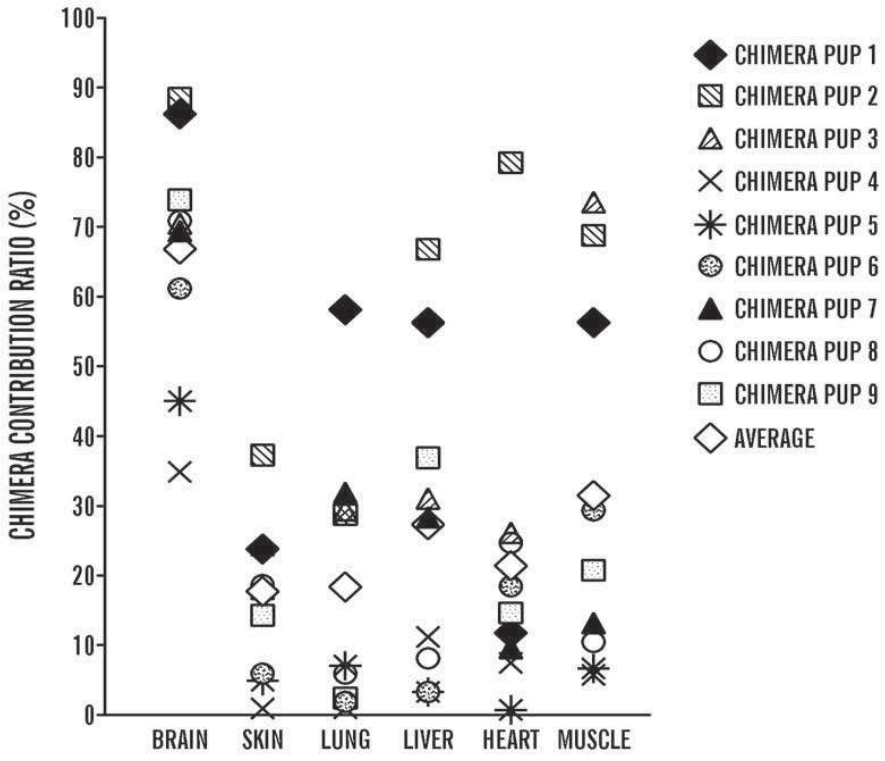

CHIMERA CONTRIBUTION RATIO (%)
100
90
80
70
60
50
40
30
20
10
0
BRAIN
SKIN
LUNG
LIVER
HEART
MUSCLE
CHIMERA PUP 1
CHIMERA PUP 2
CHIMERA PUP 3
CHIMERA PUP 4
CHIMERA PUP 5
CHIMERA PUP 6
CHIMERA PUP 7
CHIMERA PUP 8
CHIMERA PUP 9
AVERAGE

FIG. 4B

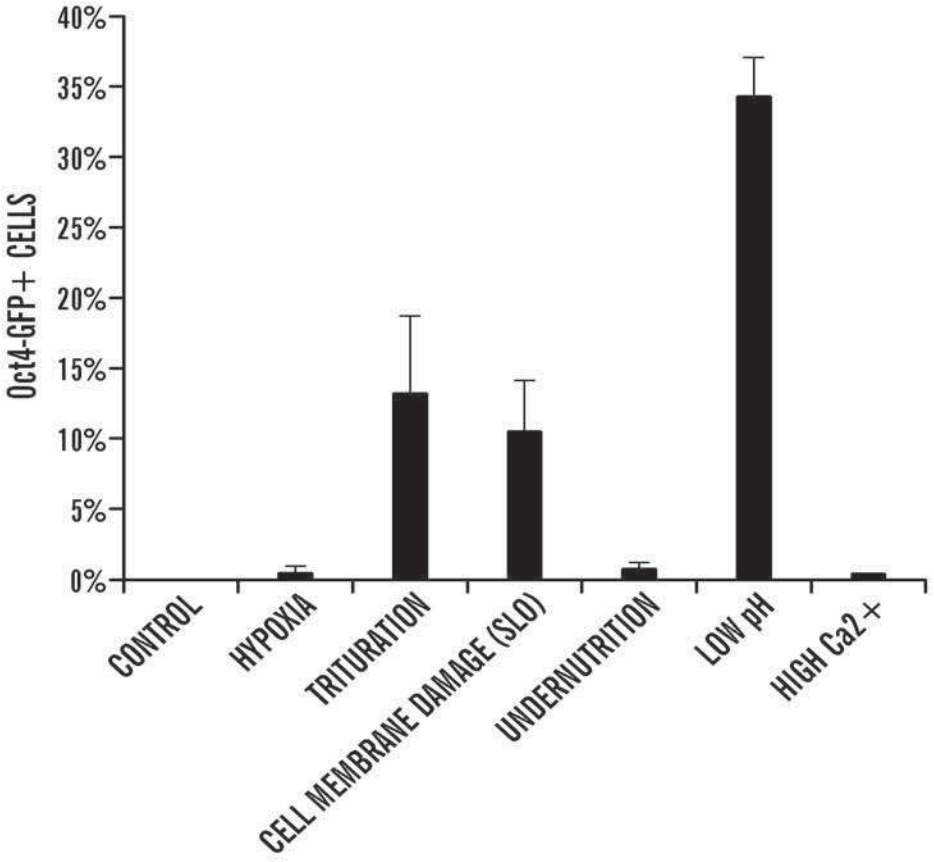

40%
35%
30%
25%
20%
15%
10%
5%
0%
Oct4-GFP+ CELLS
CONTROL
HYPOXIA
TRITURATION
CELL MEMBRANE DAMAGE (SLO)
UNDERNUTRITION
LOW pH
HIGH Ca2+

FIG. 5A

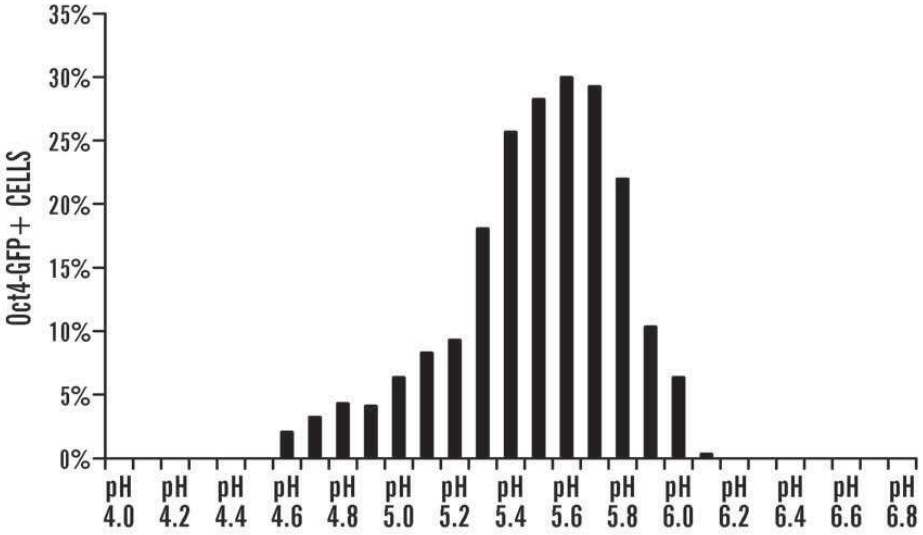

35%
30%
25%
20%
15%
10%
5%
0%
Oct4-GFP+ CELLS
pH 4.0
pH 4.2
pH 4.4
pH 4.6
pH 4.8
pH 5.0
pH 5.2
pH 5.4
pH 5.6
pH 5.8
pH 6.0
pH 6.2
pH 6.4
pH 6.6
pH 6.8

FIG. 5B

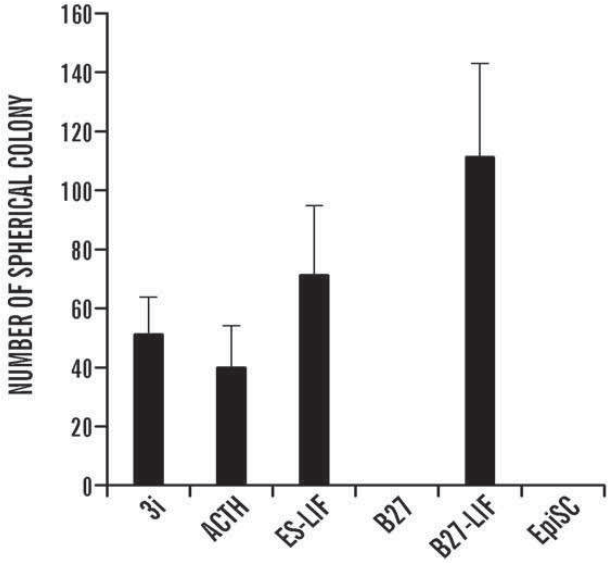

160
140
120
100
80
60
40
20
0
NUMBER OF SPHERICAL COLONY
3i
ACTH
ES-LIF
B27
B27-LIF
EpiSC

FIG. 5C

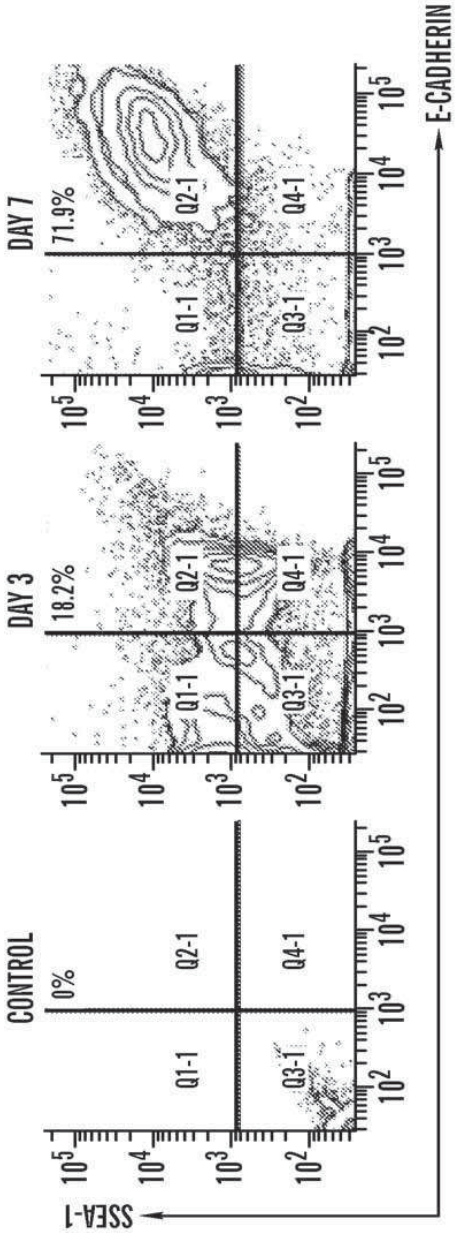

CONTROL
0%
Q1-1
Q2-1
Q3-1
Q4-1
DAY 3
18.2%
DAY 7
71.9%
SSEA-1
E-CADHERIN

FIG. 6A

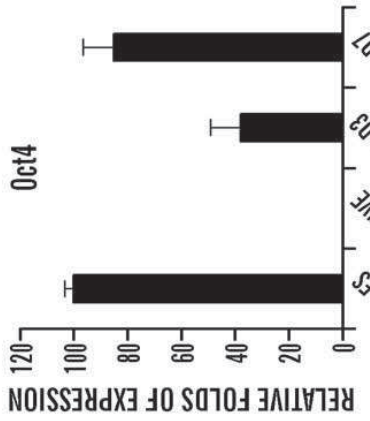

Oct4
RELATIVE FOLDS OF EXPRESSION
120
100
80
60
40
20
0
ES
NATIVE
DOUBLE+D3
DOUBLE+D7

FIG. 6B

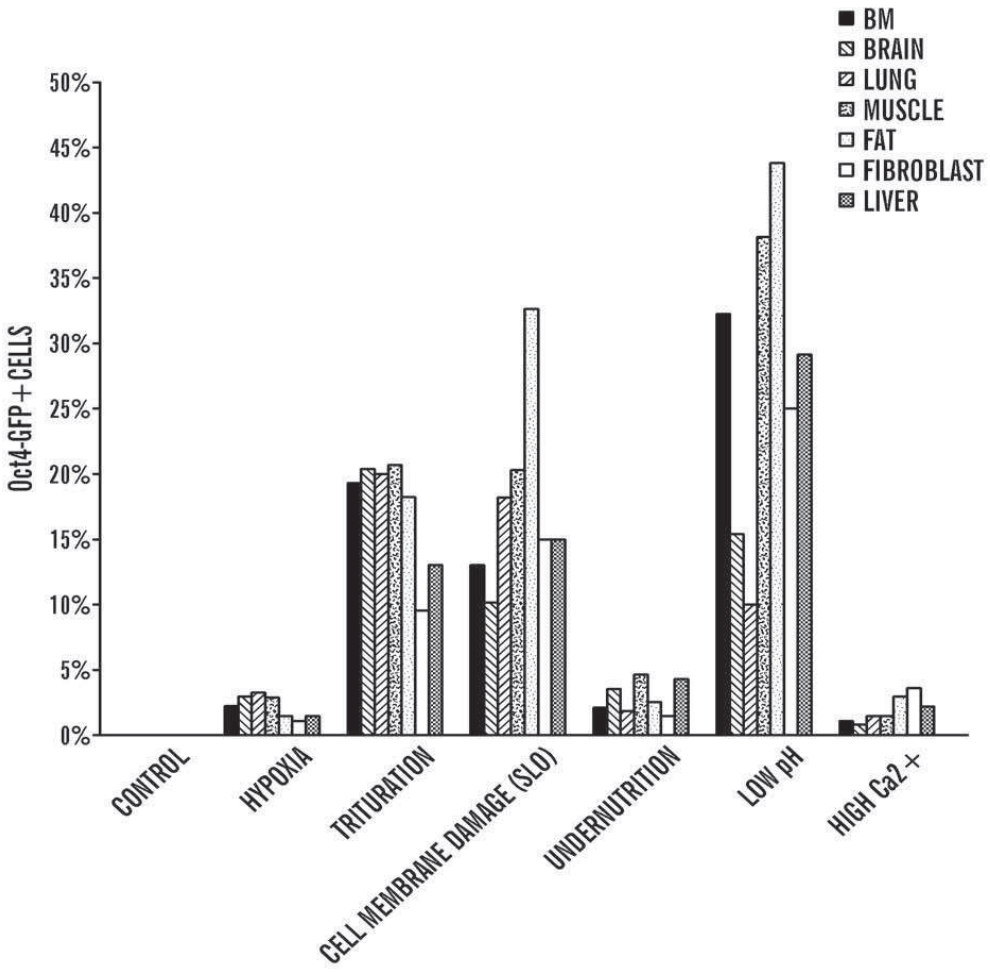

BM
BRAIN
LUNG
MUSCLE
FAT
FIBROBLAST
LIVER
Oct4-GFP + CELLS
50%
45%
40%
35%
30%
25%
20%
15%
10%
5%
0%
CONTROL
HYPOXIA
TRITURATION
CELL MEMBRANE DAMAGE (SLO)
UNDERNUTRITION
LOW pH
HIGH Ca2+

FIG. 7A

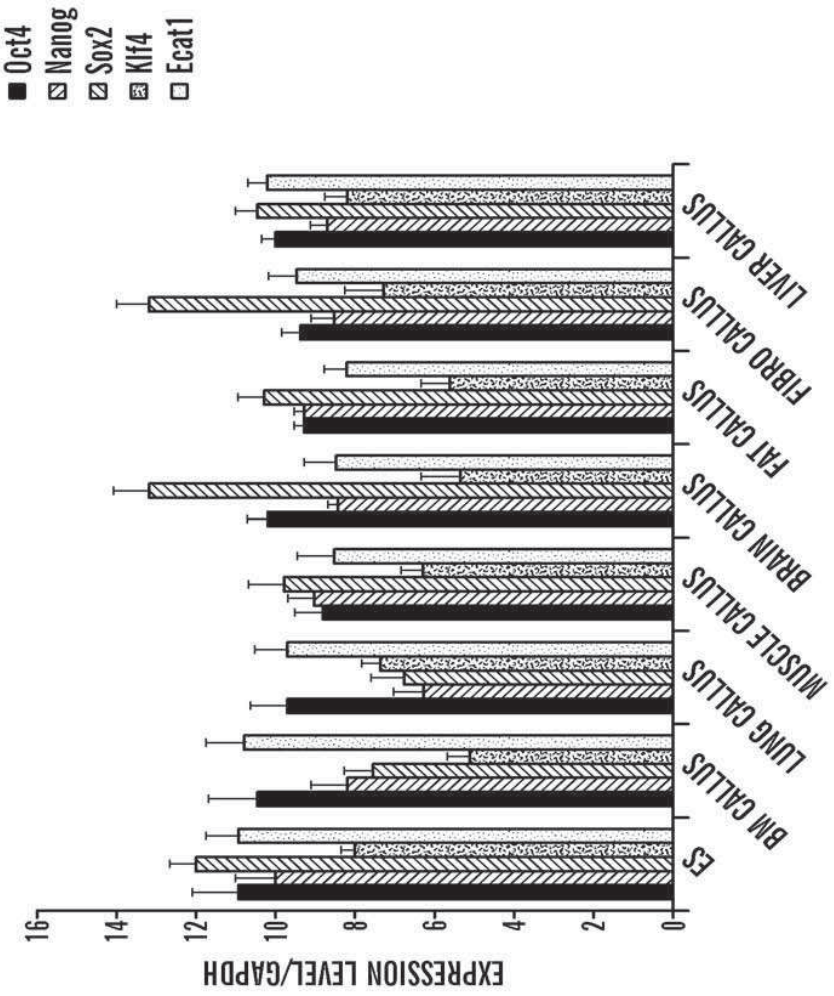

Oct4
Nanog
Sox2
Klf4
Ecat1
EXPRESSION LEVEL/GAPDH
16
14
12
10
8
6
4
2
0
ES
BM CALLUS
LUNG CALLUS
MUSCLE CALLUS
BRAIN CALLUS
FAT CALLUS
FIBRO CALLUS
LIVER CALLUS

FIG. 7B

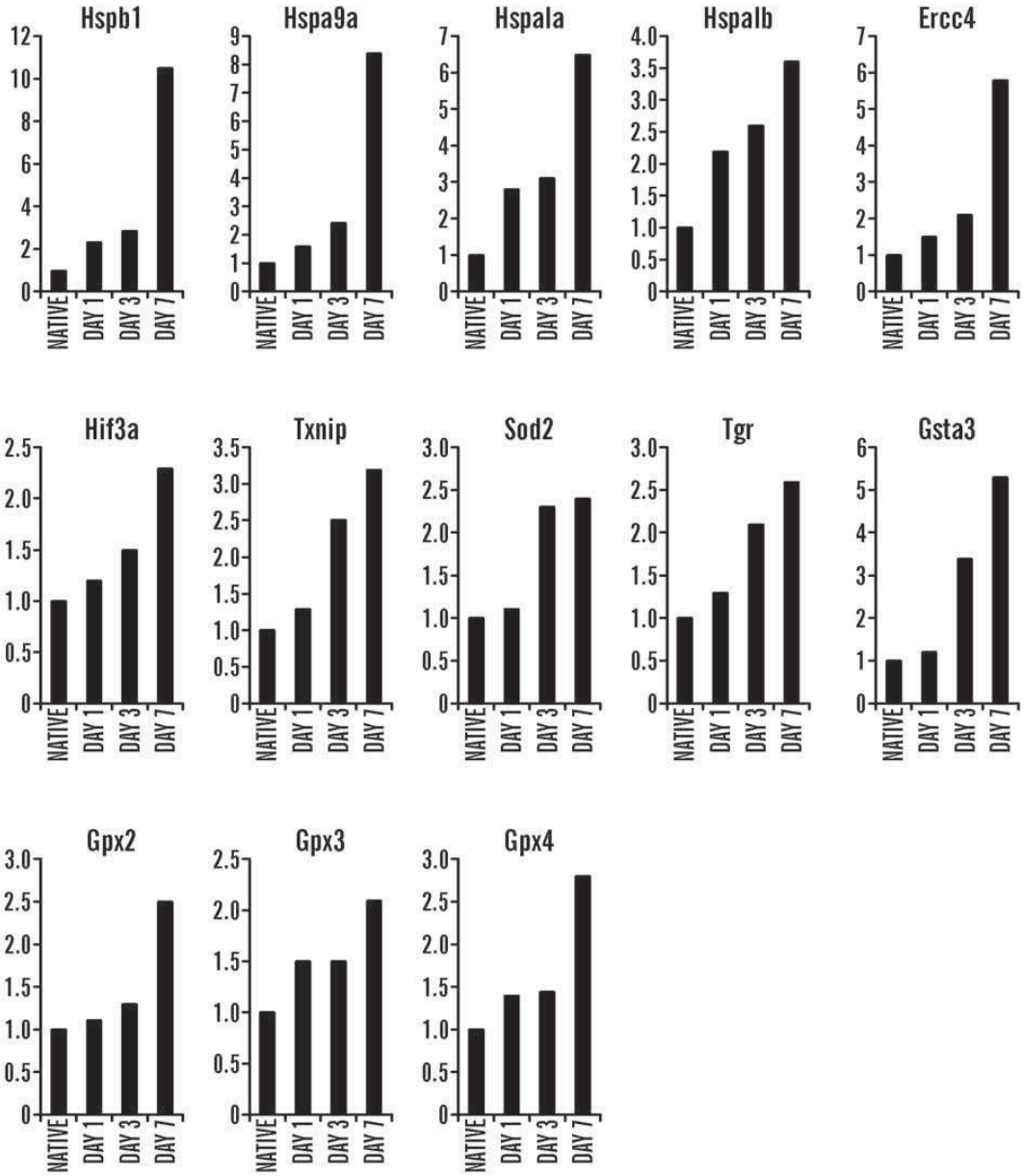

Hspb1
Hspa9a
Hspala
Hspalb
Ercc4
Hif3a
Txnip
Sod2
Tgr
Gsta3
Gpx2
Gpx3
Gpx4
NATIVE
DAY 1
DAY 3
DAY 7

FIG. 8

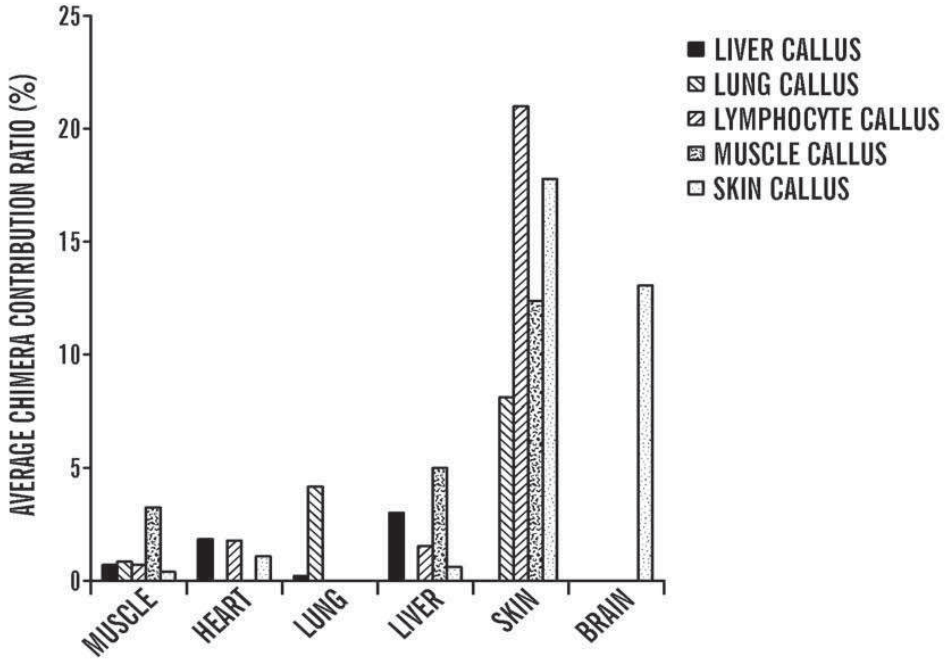

AVERAGE CHIMERA CONTRIBUTION RATIO (%)
25
20
15
10
5
0
MUSCLE
HEART
LUNG
LIVER
SKIN
BRAIN
LIVER CALLUS
LUNG CALLUS
LYMPHOCYTE CALLUS
MUSCLE CALLUS
SKIN CALLUS

FIG. 9

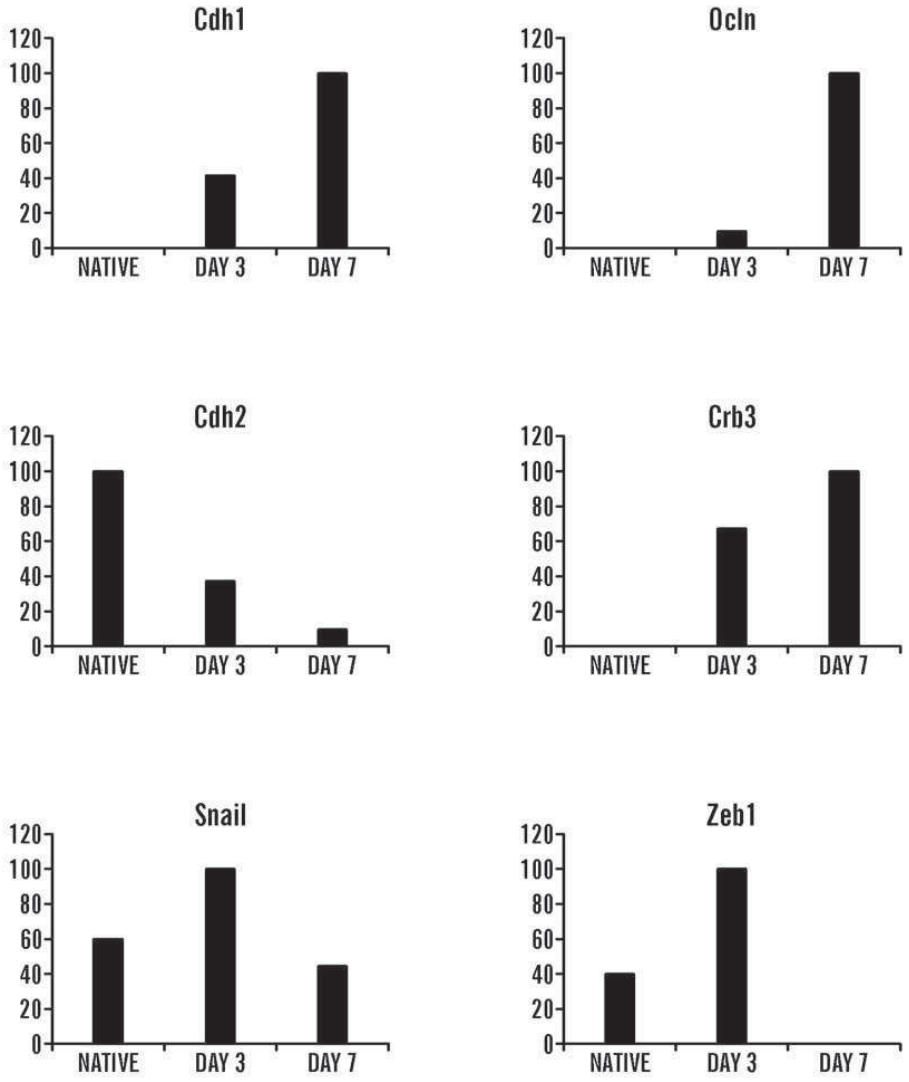

Cdh1
120
100
80
60
40
20
0
NATIVE
DAY 3
DAY 7
Ocln
120
100
80
60
40
20
0
NATIVE
DAY 3
DAY 7
Cdh2
120
100
80
60
40
20
0
NATIVE
DAY 3
DAY 7
Crb3
120
100
80
60
40
20
0
NATIVE
DAY 3
DAY 7
Snail
120
100
80
60
40
20
0
NATIVE
DAY 3
DAY 7
Zeb1
120
100
80
60
40
20
0
NATIVE
DAY 3
DAY 7

FIG. 10

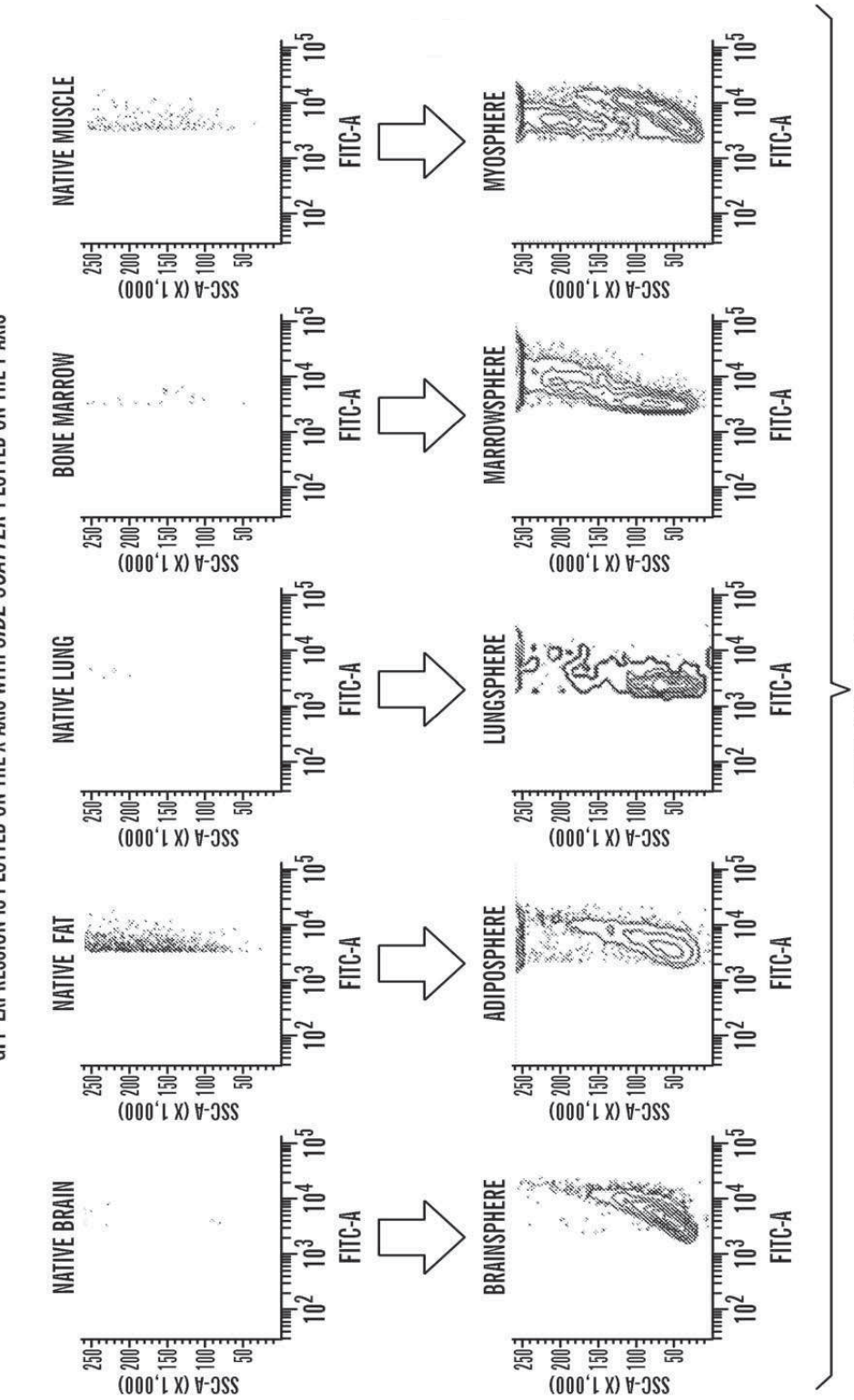

GFP EXPRESSION IS PLOTTED ON THE X-AXIS WITH SIDE SCATTER PLOTTED ON THE Y-AXIS
NATIVE BRAIN
NATIVE FAT
NATIVE LUNG
BONE MARROW
NATIVE MUSCLE
BRAINSPHERE
ADIPOSPHERE
LUNGSPHERE
MARROWSPHERE
MYOSPHERE
SSC-A (X 1,000)
FITC-A

FIG. 11