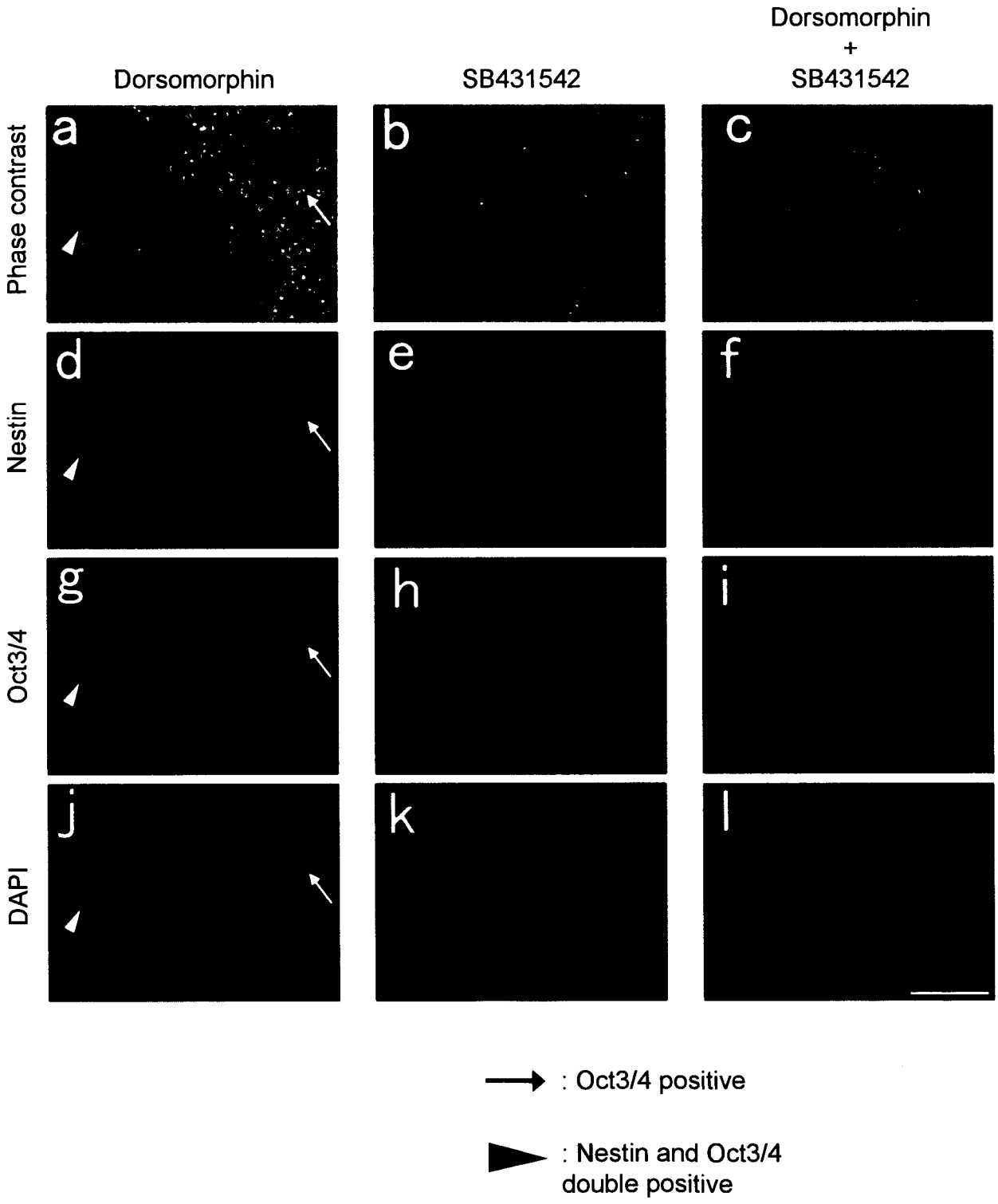
Fig. 1


Dorsomorphin
SB431542
Dorsomorphin + SB431542
Phase contrast
Nestin
Oct3/4
DAPI
a
b
c
d
e
f
g
h
i
j
k
l
: Oct3/4 positive
: Nestin and Oct3/4 double positive

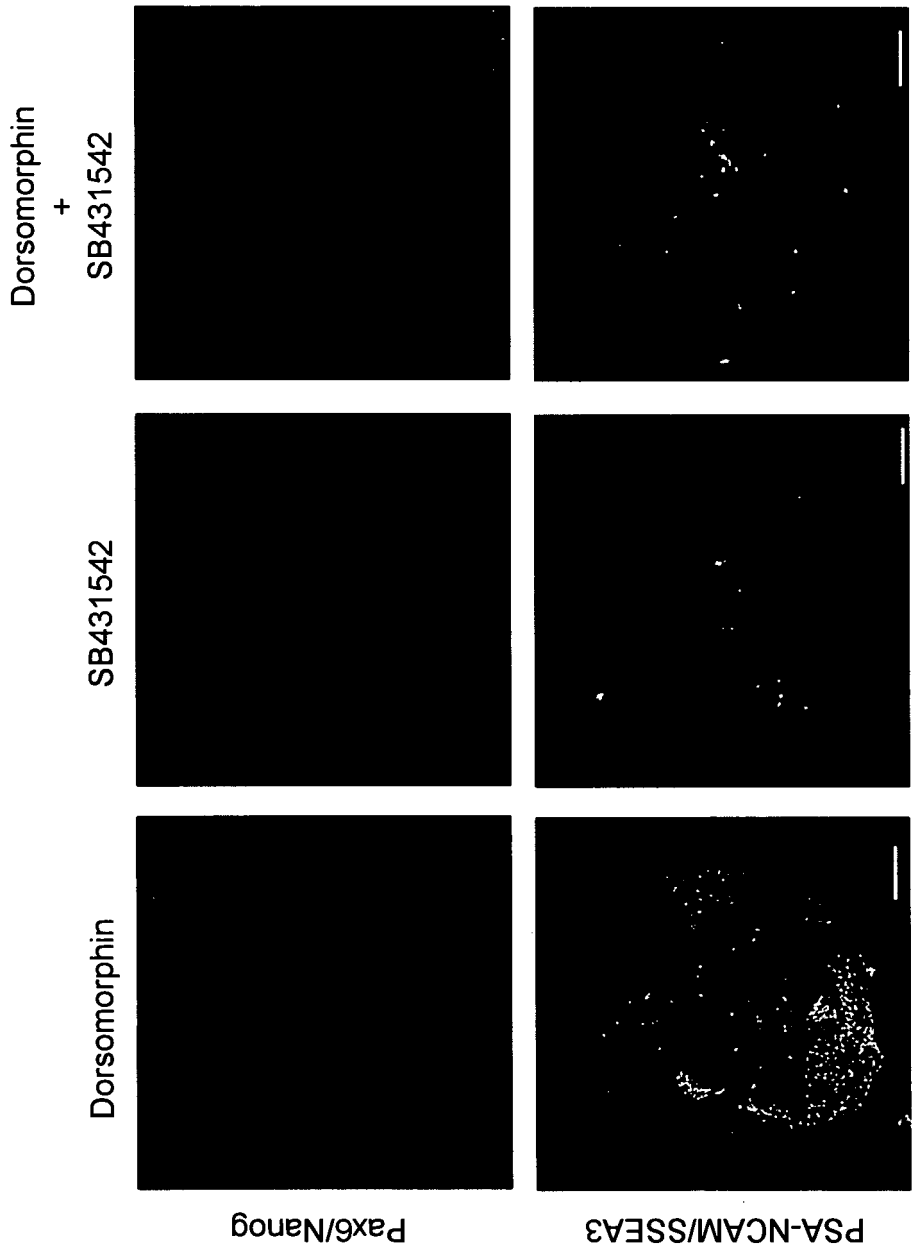
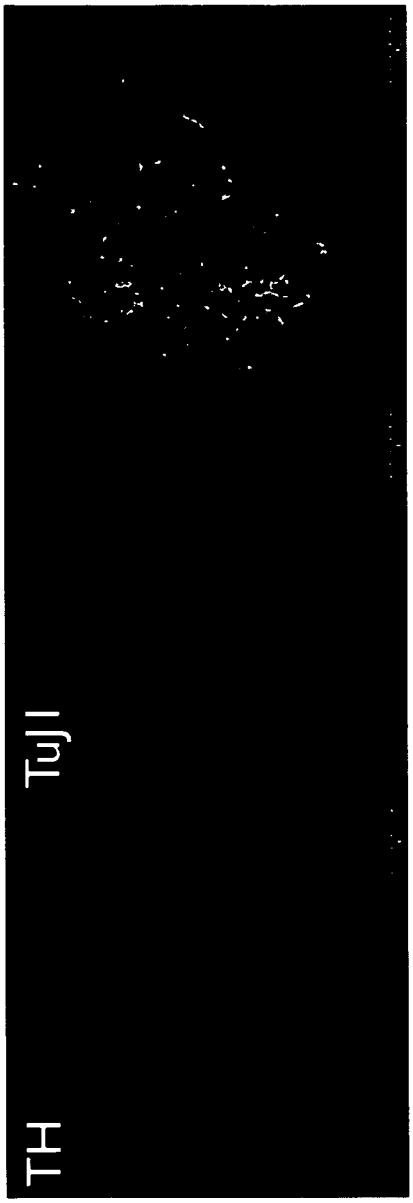

Dorsomorphin
+
SB431542
SB431542
Dorsomorphin
Pax6/Nanog
PSA-NCAM/SSEA3

Fig. 2



Dorsomorphin
+
SB431542

Fig. 3

Fig. 4

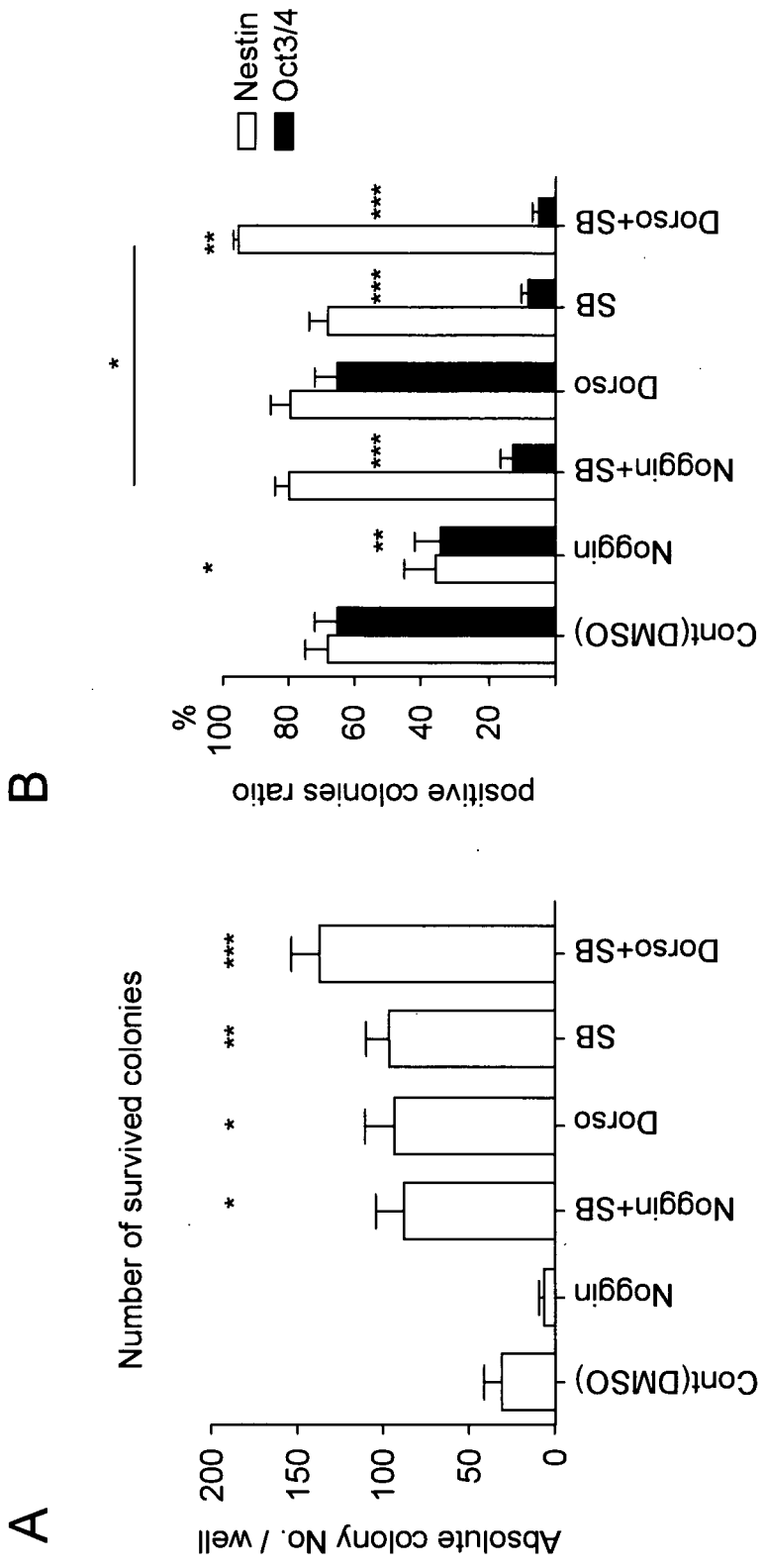

A
Absolute colony No. / well
200
150
100
50
0
Number of survived colonies
Cont(DMSO)
Noggin
Noggin+SB
Dorso
SB
Dorso+SB
*
*
**
***
B
positive colonies ratio
%
100
80
60
40
20
Nestin
Oct3/4
Cont(DMSO)
Noggin
Noggin+SB
Dorso
SB
Dorso+SB
*
**
***
***
***
**

Fig. 5

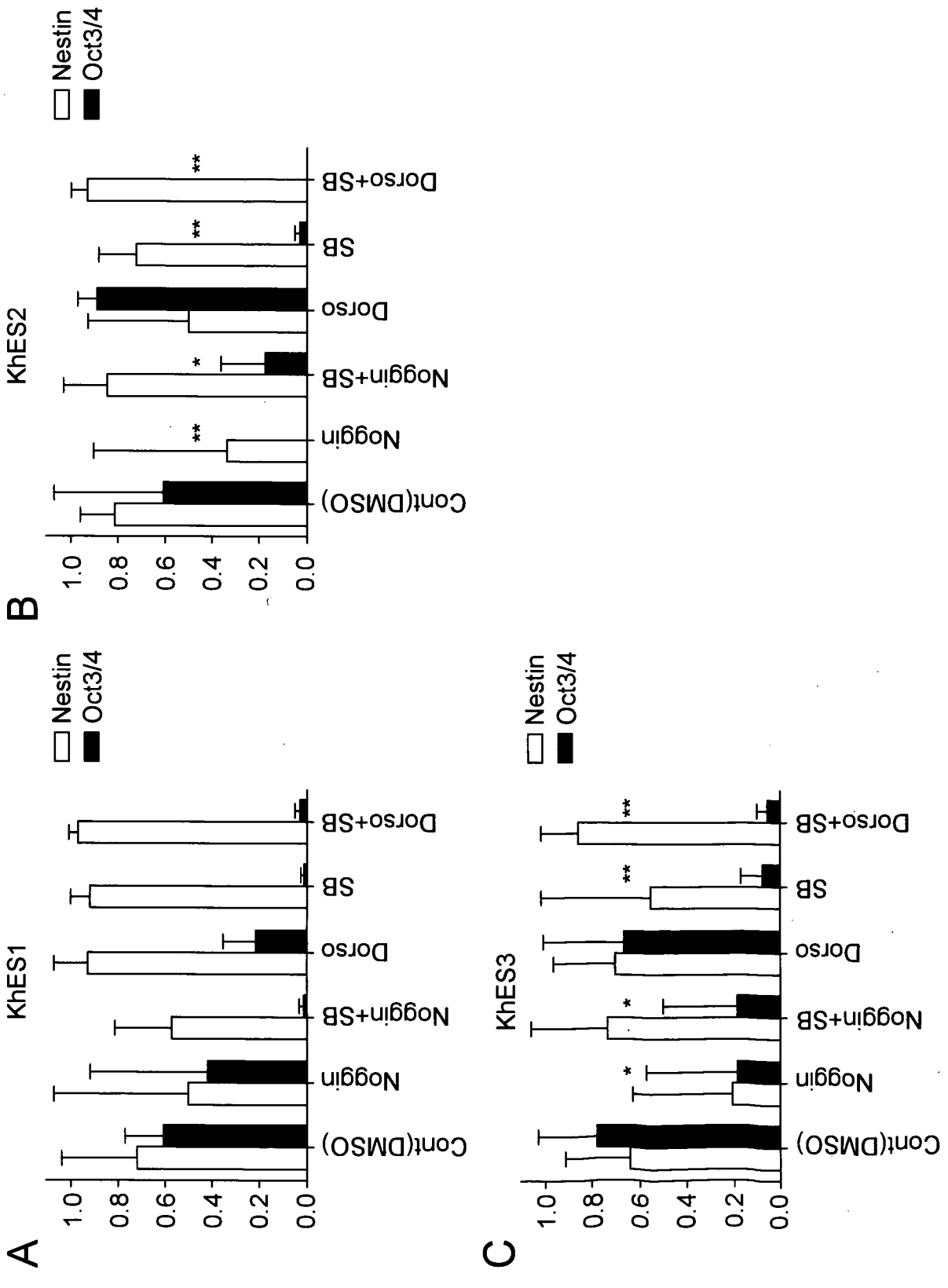

A
KhES1
Nestin
Oct3/4
1.0
0.8
0.6
0.4
0.2
0.0
Cont(DMSO)
Noggin
Noggin+SB
Dorso
SB
Dorso+SB
B
KhES2
Nestin
Oct3/4
C
KhES3
Nestin
Oct3/4
*
**

Fig. 6

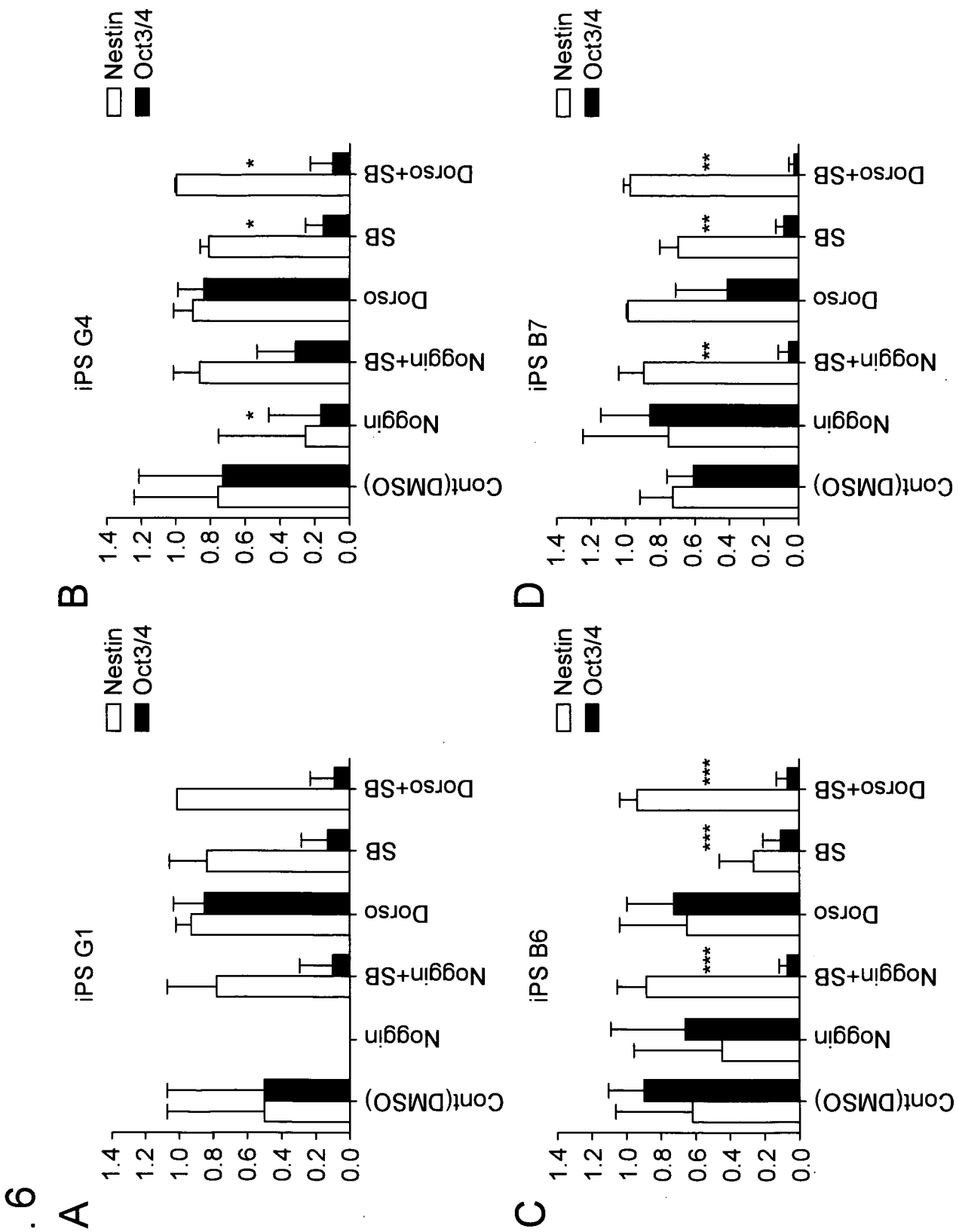

A
iPS G1
Nestin
Oct3/4
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
Cont(DMSO)
Noggin
Noggin+SB
Dorso
SB
Dorso+SB
B
iPS G4
Nestin
Oct3/4
*
*
*
C
iPS B6
Nestin
Oct3/4
***
***
***
D
iPS B7
Nestin
Oct3/4
**
**
**

Fig. 7

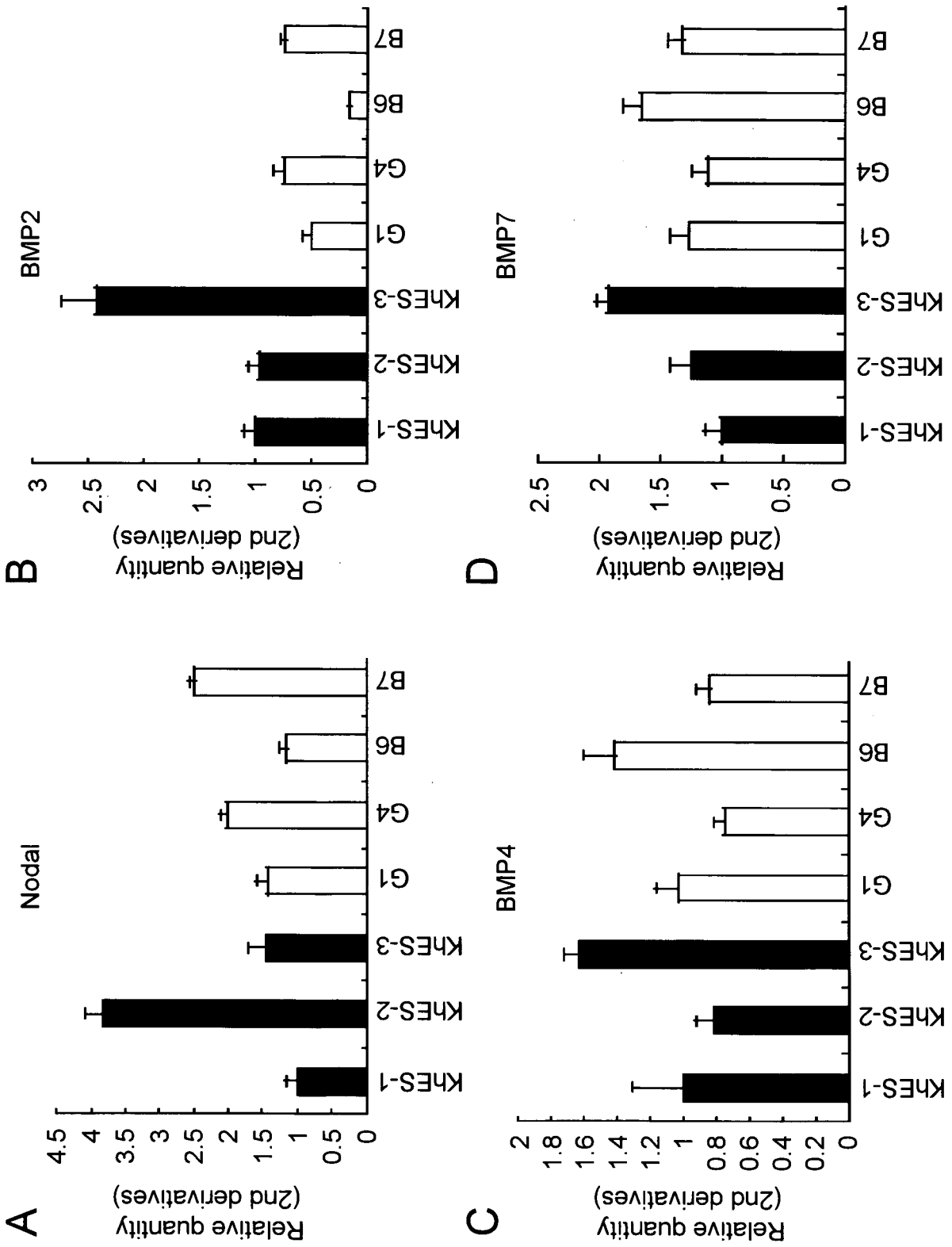

A
Nodal
Relative quantity
(2nd derivatives)
4.5
4
3.5
3
2.5
2
1.5
1
0.5
0
KhES-1
KhES-2
KhES-3
G1
G4
B6
B7
B
BMP2
Relative quantity
(2nd derivatives)
3
2.5
2
1.5
1
0.5
0
KhES-1
KhES-2
KhES-3
G1
G4
B6
B7
C
BMP4
Relative quantity
(2nd derivatives)
2
1.8
1.6
1.4
1.2
1
0.8
0.6
0.4
0.2
0
KhES-1
KhES-2
KhES-3
G1
G4
B6
B7
D
BMP7
Relative quantity
(2nd derivatives)
2.5
2
1.5
1
0.5
0
KhES-1
KhES-2
KhES-3
G1
G4
B6
B7

Fig. 8

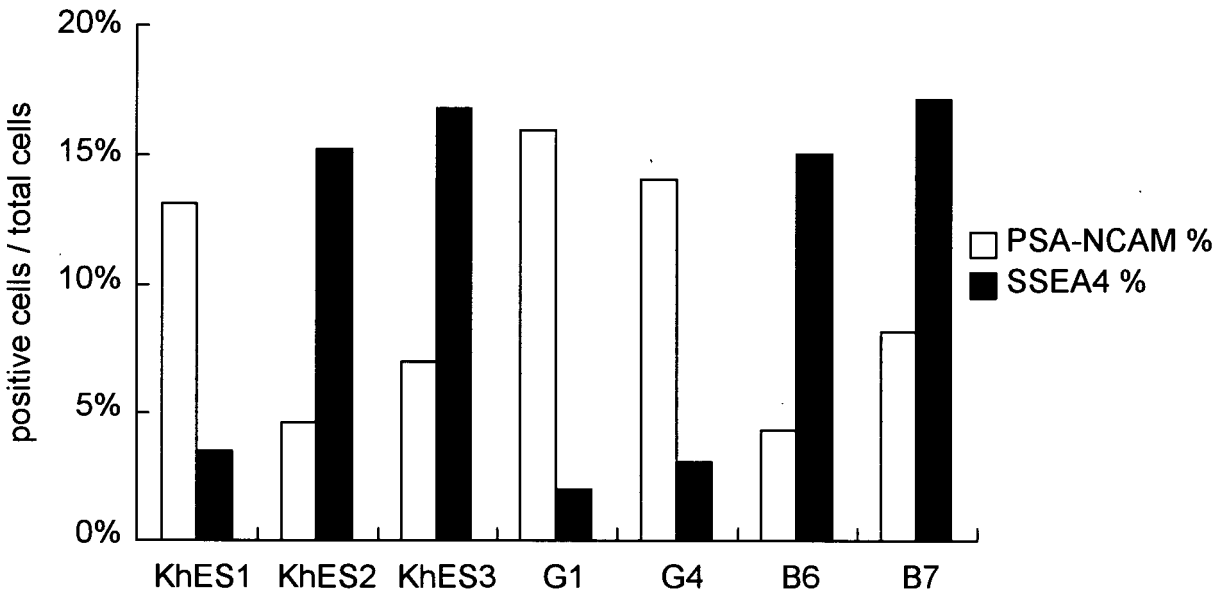

20%
15%
10%
5%
0%
positive cells / total cells
KhES1
KhES2
KhES3
G1
G4
B6
B7
PSA-NCAM %
SSEA4 %

Fig. 9

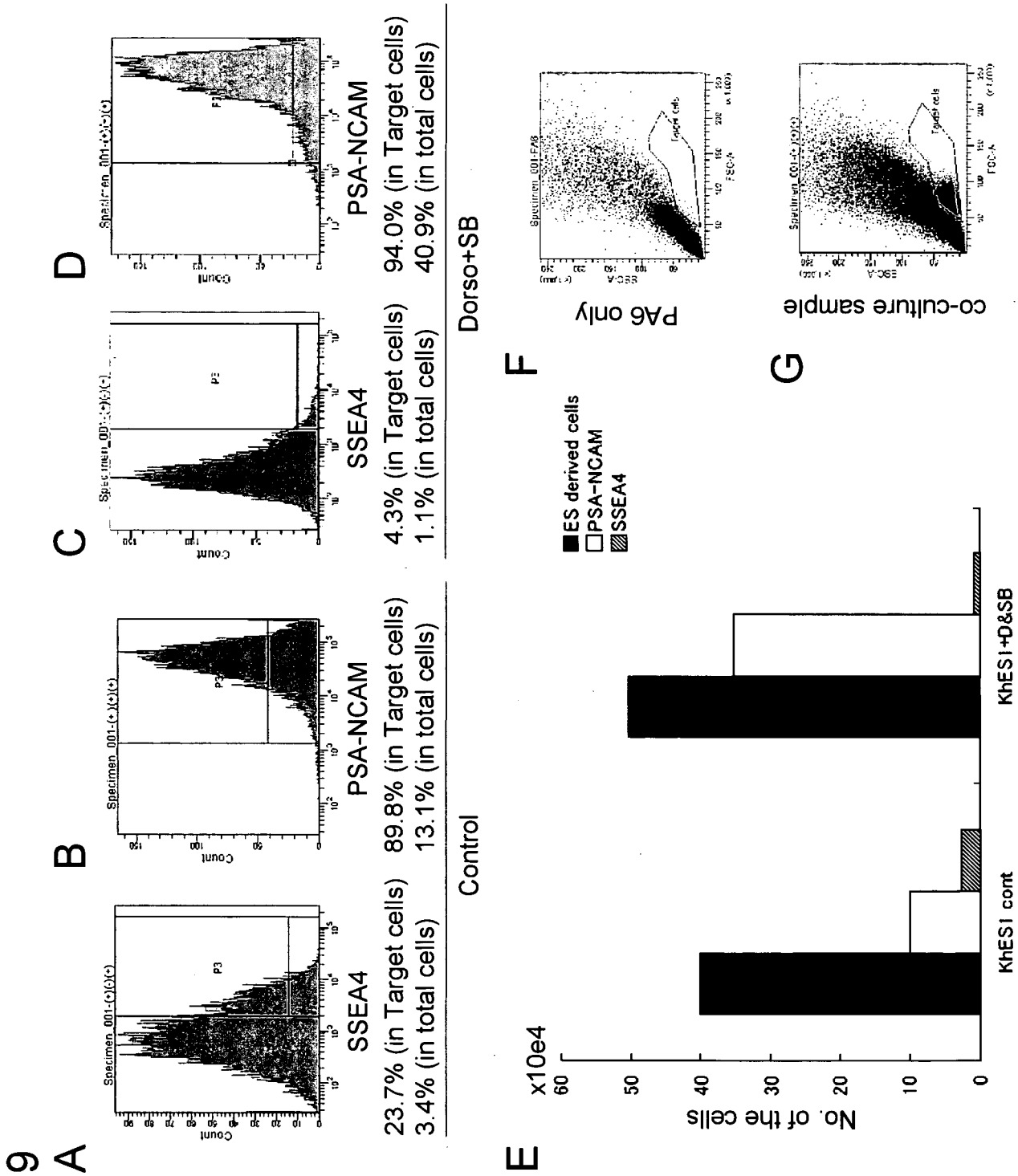
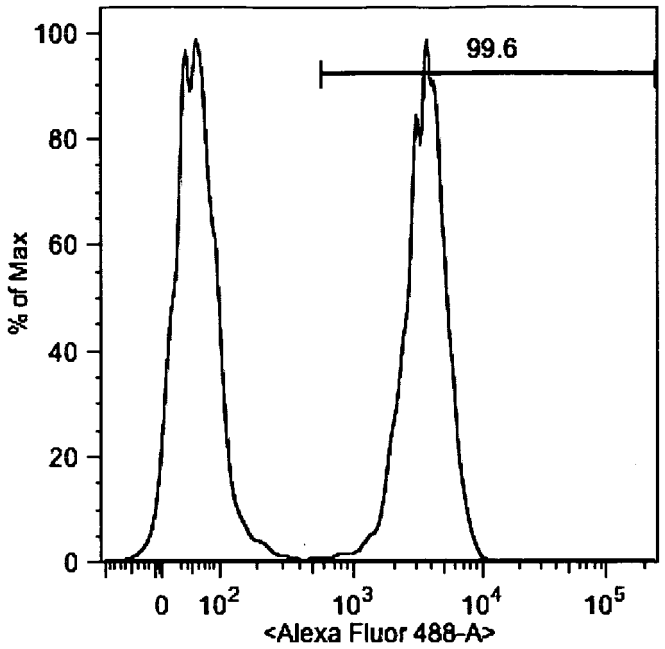

A
B
C
D
SSEA4
PSA-NCAM
SSEA4
PSA-NCAM
23.7% (in Target cells)
3.4% (in total cells)
89.8% (in Target cells)
13.1% (in total cells)
4.3% (in Target cells)
1.1% (in total cells)
94.0% (in Target cells)
40.9% (in total cells)
Control
Dorso+SB
E
F
G
ES derived cells
PSA-NCAM
SSEA4
x10e4
No. of the cells
KhES1 cont
KhES1+D&SB
PA6 only
co-culture sample

Fig. 10

A


100
80
60
40
20
0
% of Max
99.6
0
10^2
10^3
10^4
10^5
<Alexa Fluor 488-A>
PSA-NCAM

B

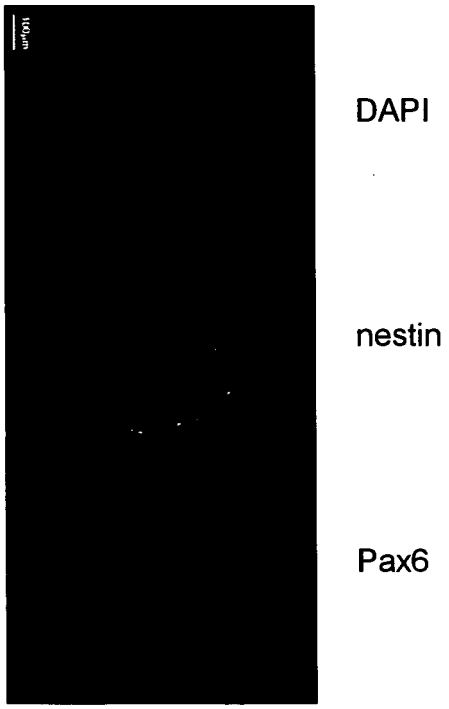

DAPI
nestin
Pax6

Fig. 11

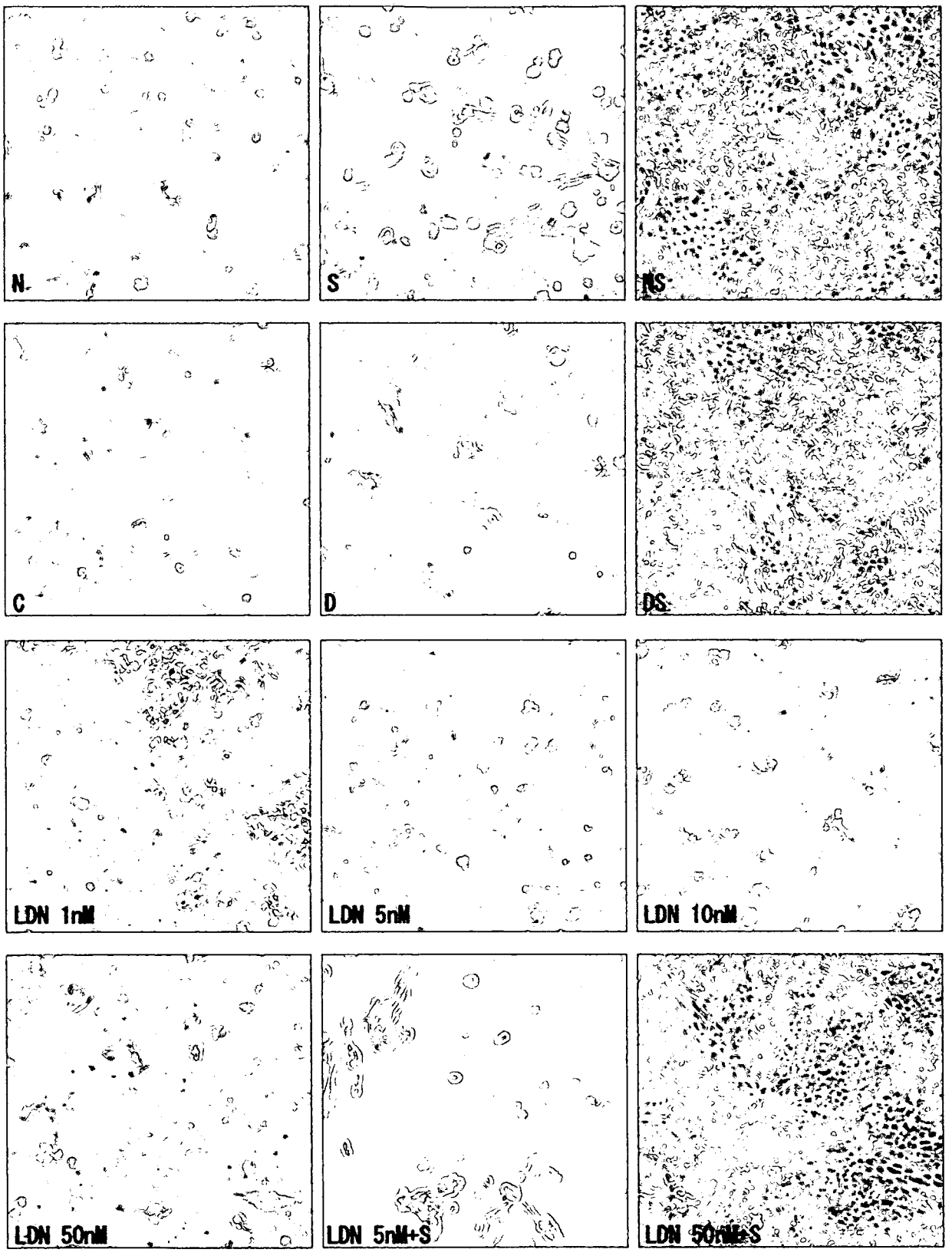
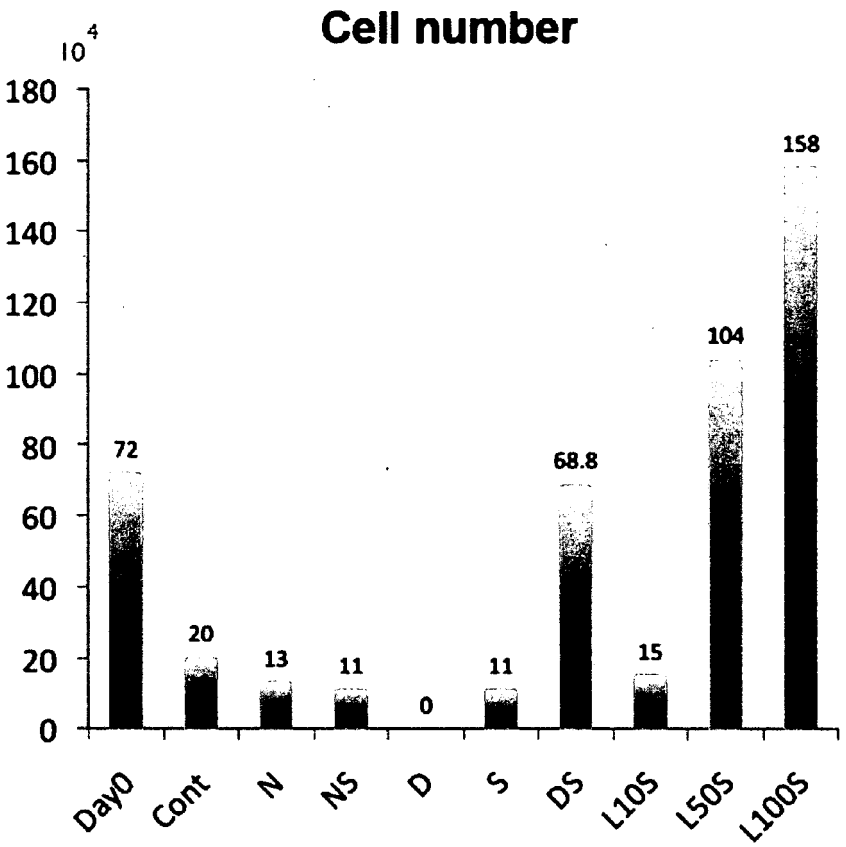

N
S
NS
C
D
DS
LDN 1nM
LDN 5nM
LDN 10nM
LDN 50nM
LDN 5nM+S
LDN 50nM+S
200μm

Fig. 12


Cell number
10^4
180
160
140
120
100
80
60
40
20
0
72
20
13
11
0
11
68.8
15
104
158
Day0
Cont
N
NS
D
S
DS
L10S
L50S
L100S

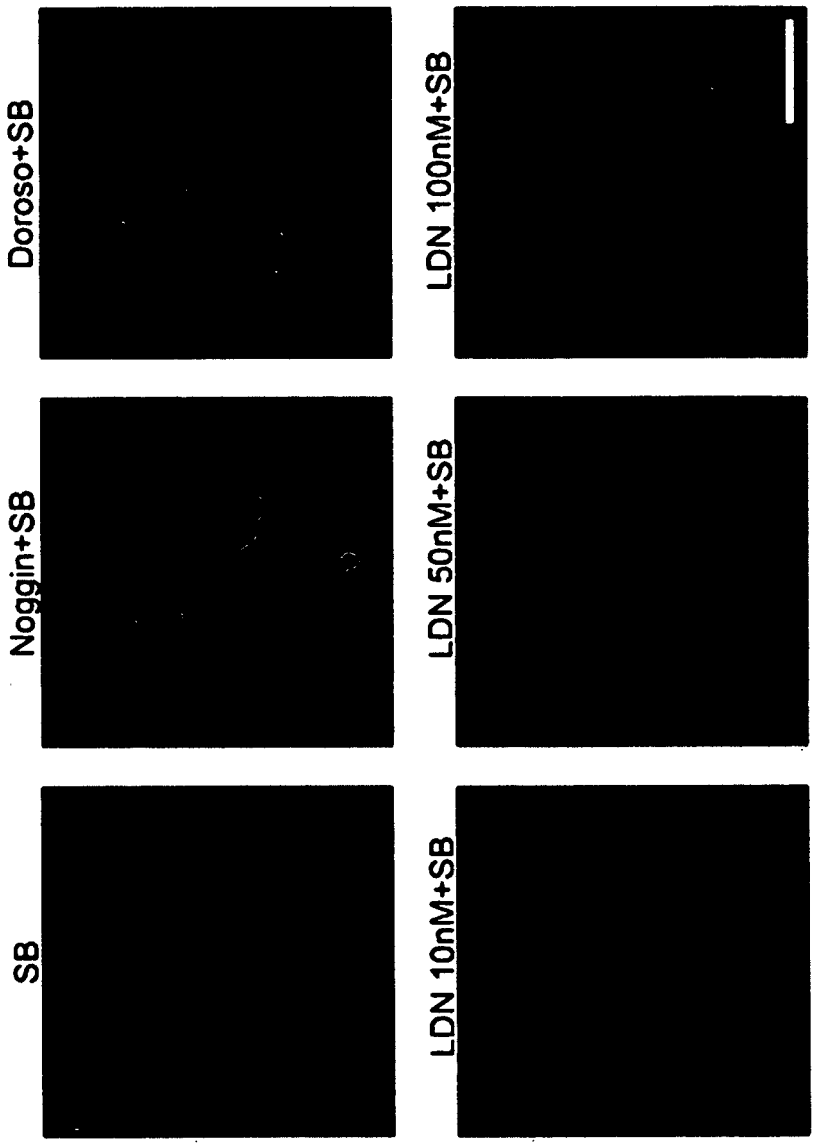


Fig. 13

Fig. 14A

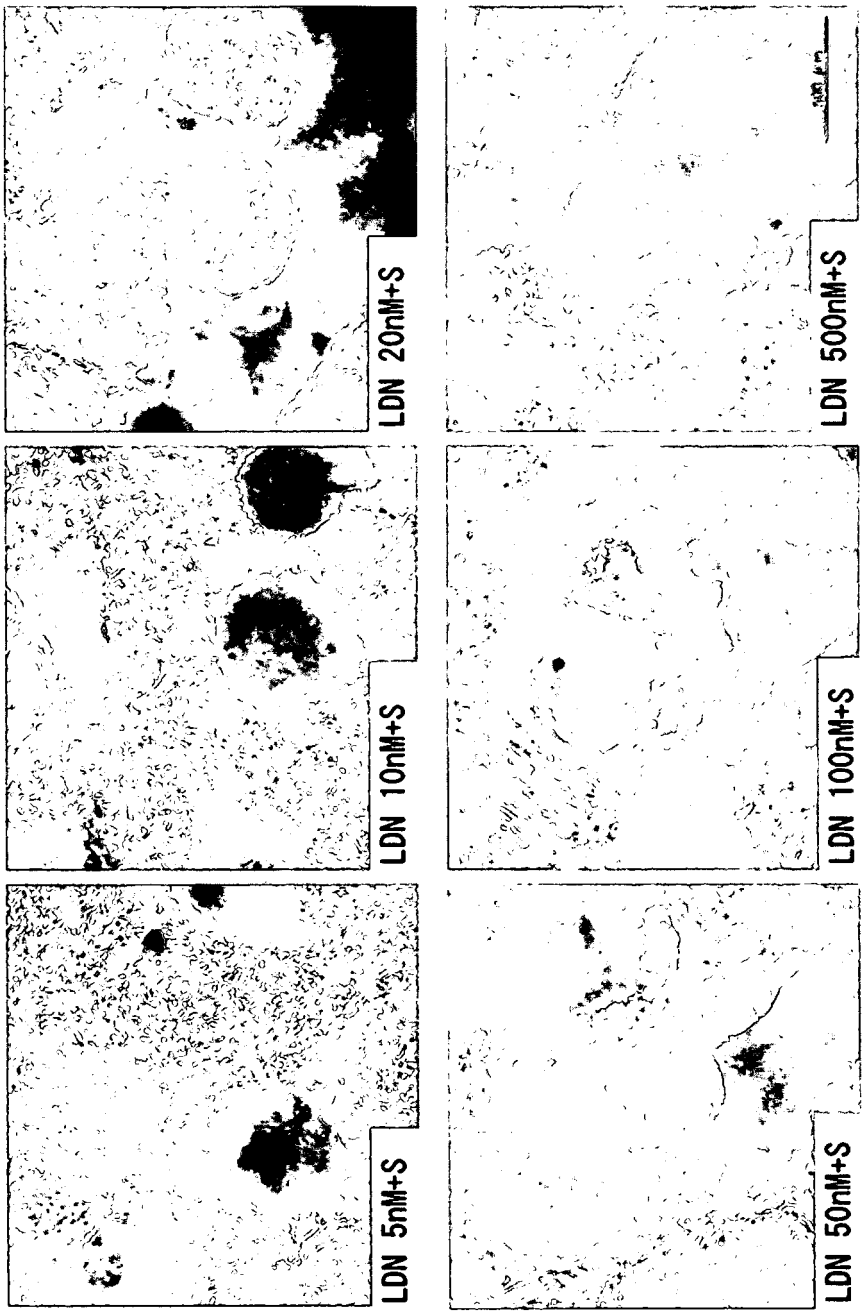


Fig. 14B

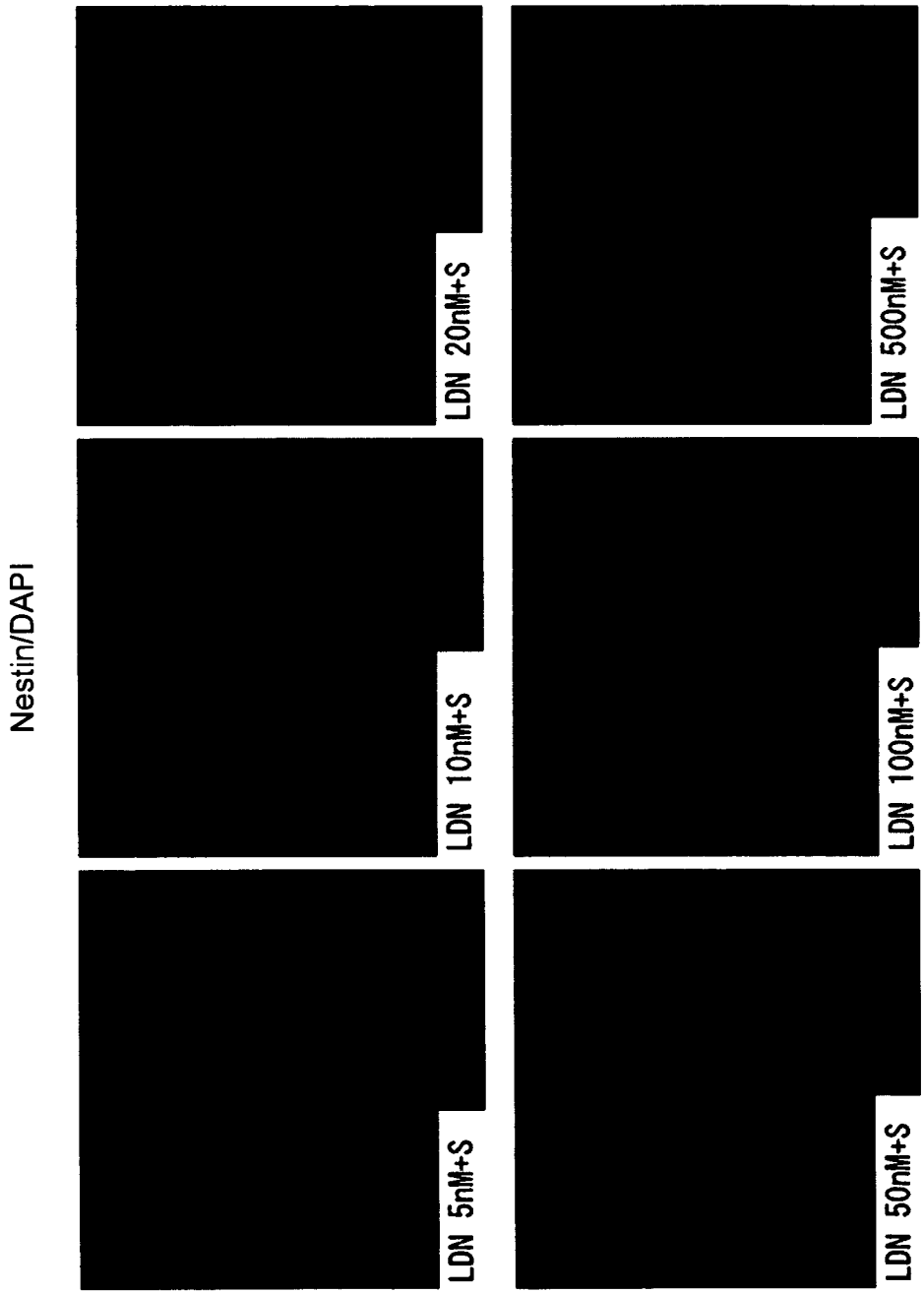

Nestin/DAPI
LDN 5nM+S
LDN 10nM+S
LDN 20nM+S
LDN 50nM+S
LDN 100nM+S
LDN 500nM+S

Fig. 15A

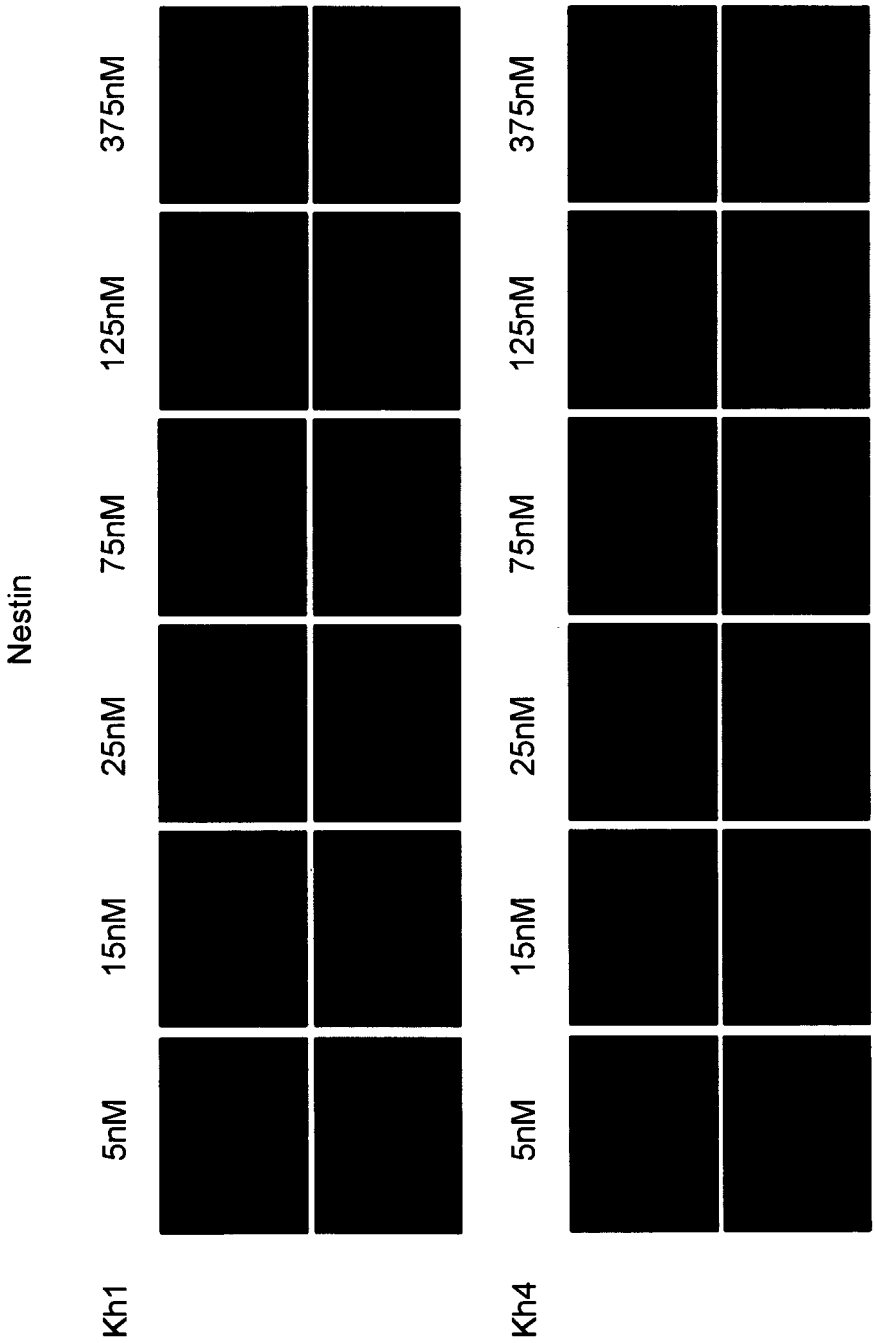

Nestin
Kh1
5nM
15nM
25nM
75nM
125nM
375nM
Kh4
5nM
15nM
25nM
75nM
125nM
375nM

Fig. 15B

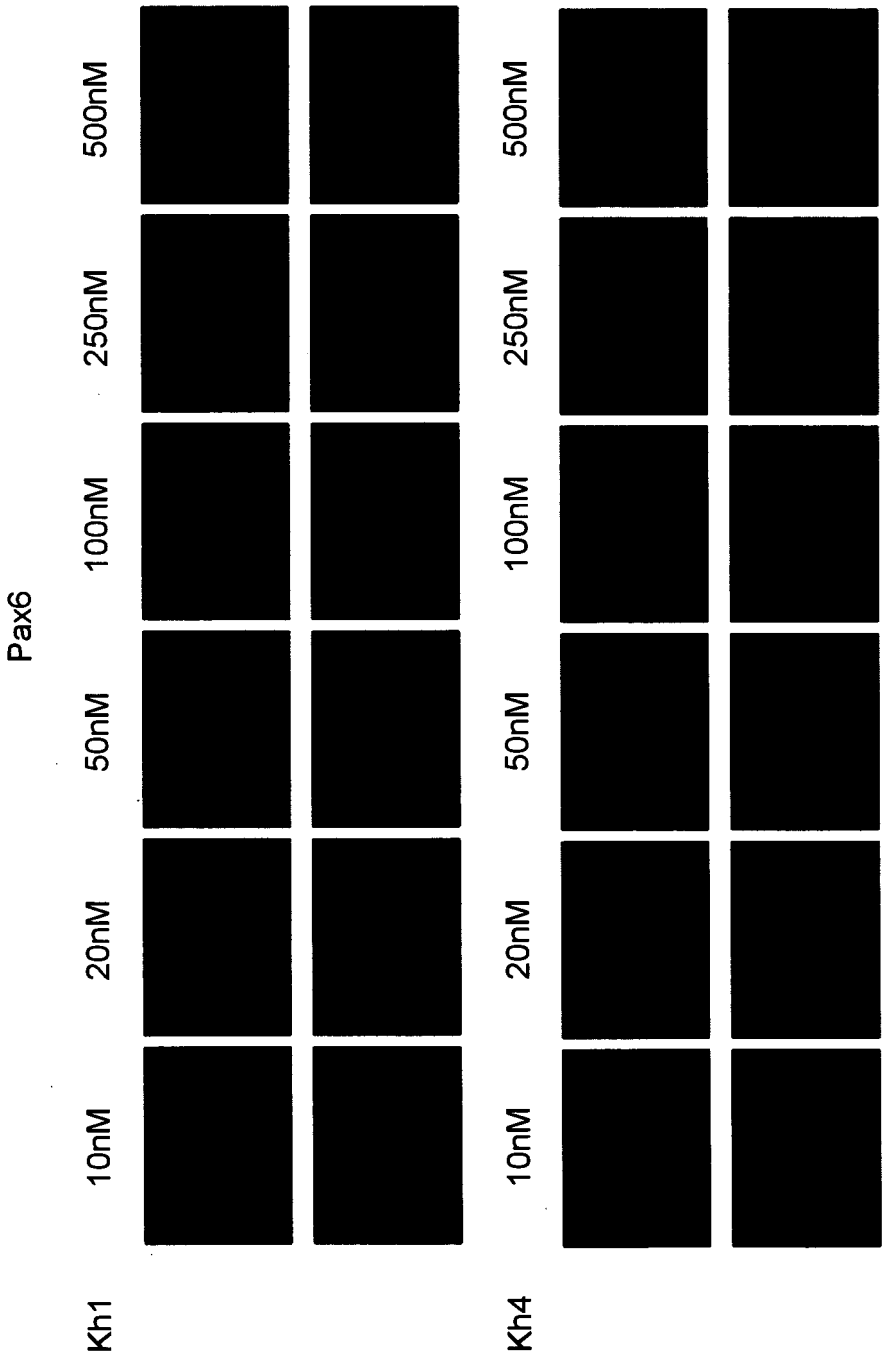

Pax6
Kh1
10nM
20nM
50nM
100nM
250nM
500nM
Kh4
10nM
20nM
50nM
100nM
250nM
500nM

Fig. 16

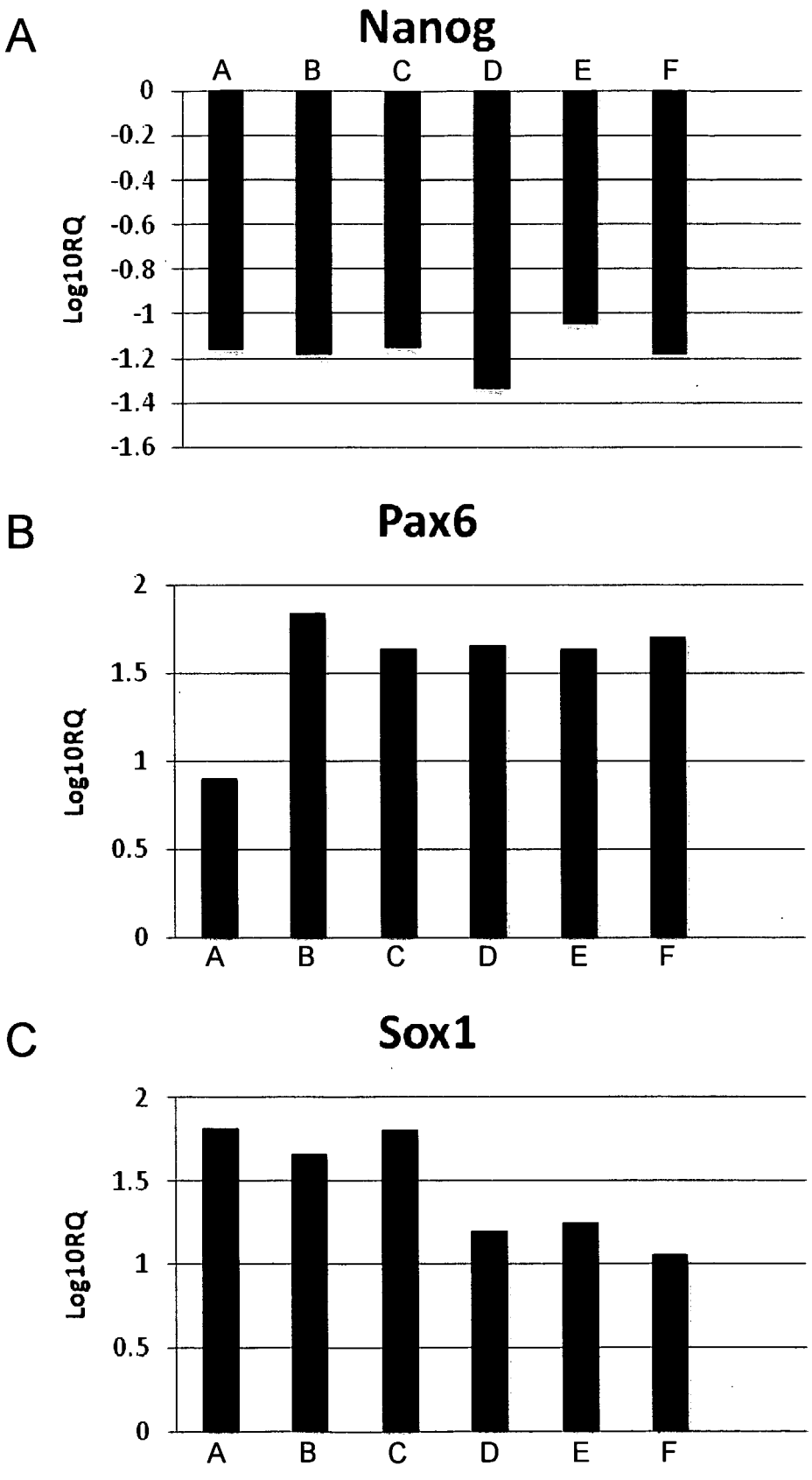
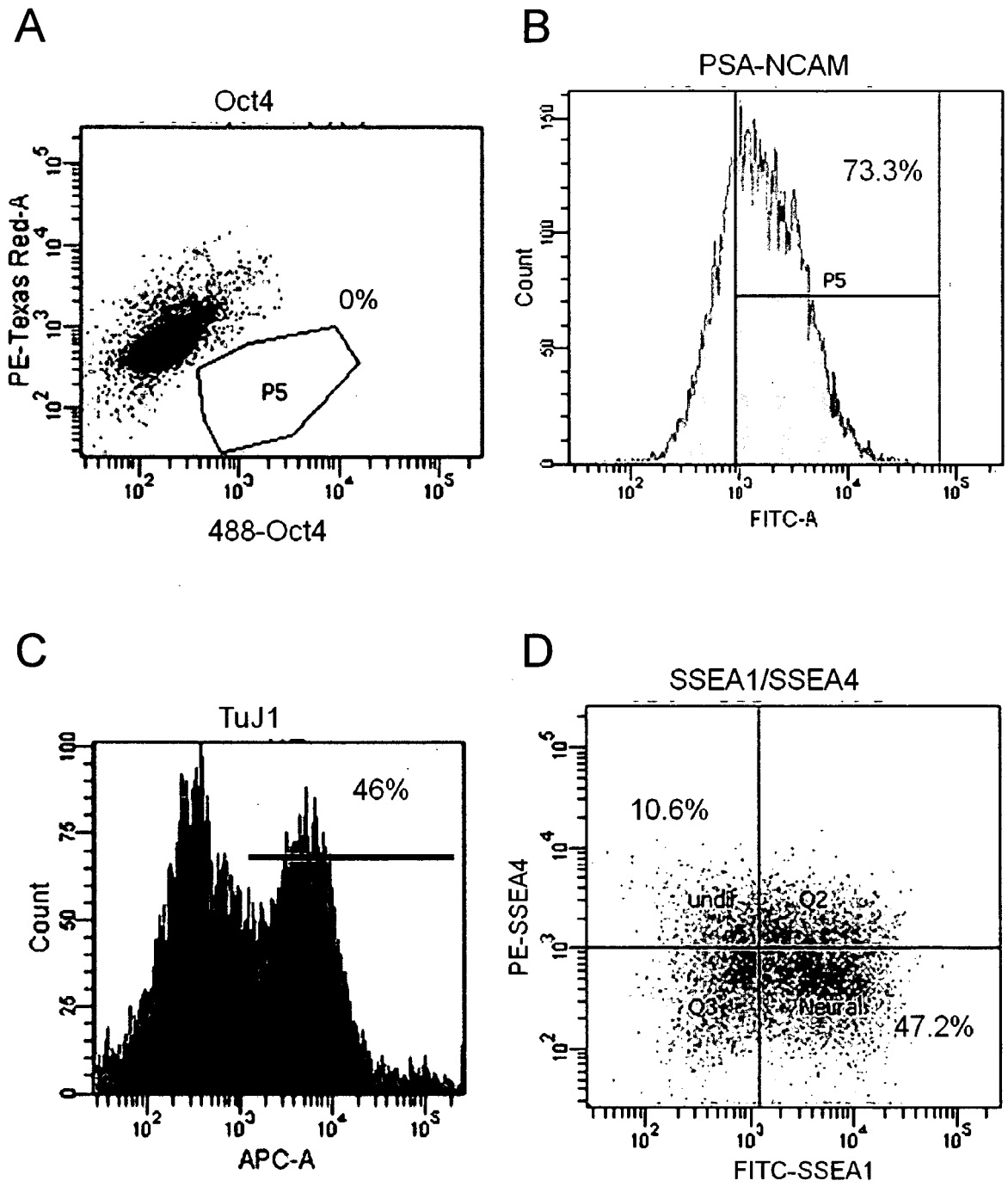

A
Nanog
A B C D E F
0
-0.2
-0.4
-0.6
-0.8
-1
-1.2
-1.4
-1.6
Log10RQ
B
Pax6
2
1.5
1
0.5
0
Log10RQ
A B C D E F
C
Sox1
2
1.5
1
0.5
0
Log10RQ
A B C D E F

Fig. 17


A
Oct4
PE-Texas Red-A
488-Oct4
0%
P5
B
PSA-NCAM
Count
FITC-A
73.3%
P5
C
TuJ1
Count
APC-A
46%
D
SSEA1/SSEA4
PE-SSEA4
FITC-SSEA1
10.6%
undif
O2
O3
Neural
47.2%