FIG. 1A

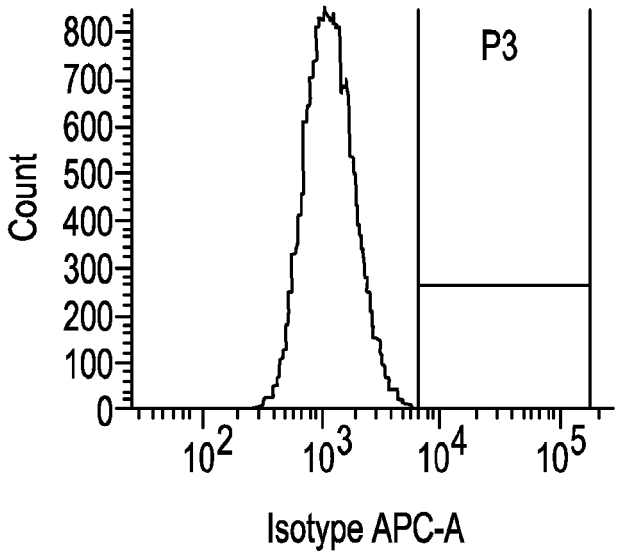


FIG. 1B

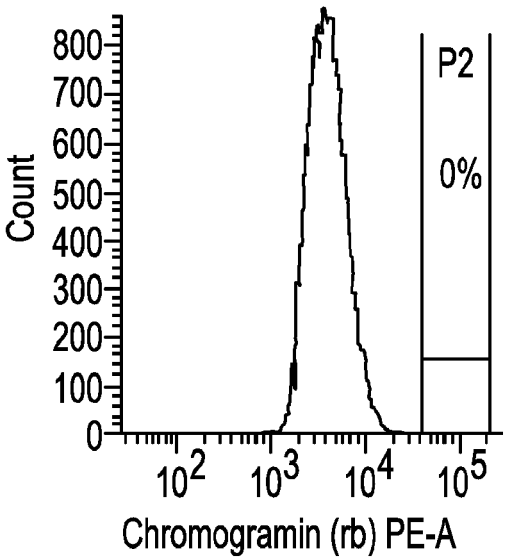


FIG. 1C

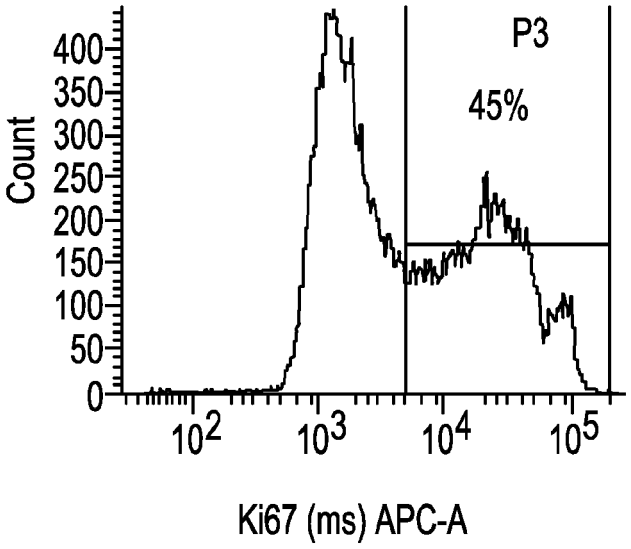


FIG. 1D

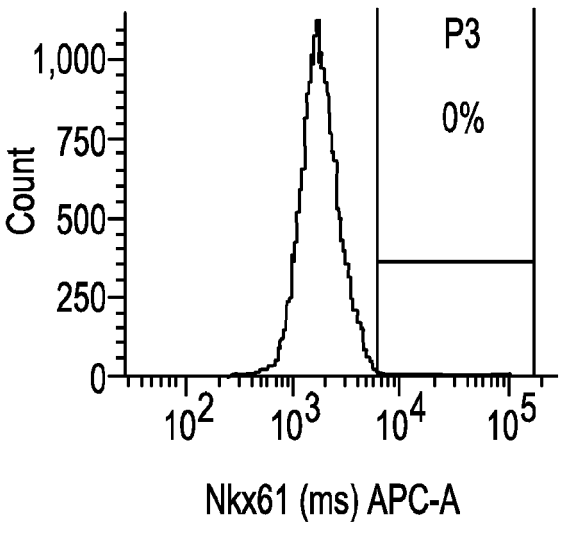


FIG. 1E

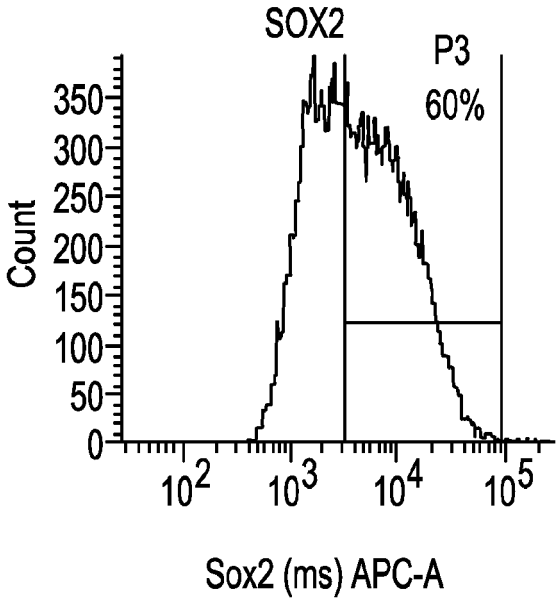


FIG. 1F

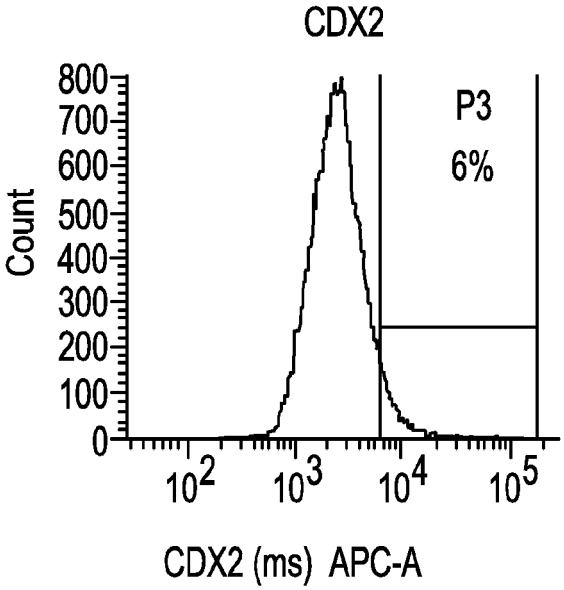


FIG. 1G

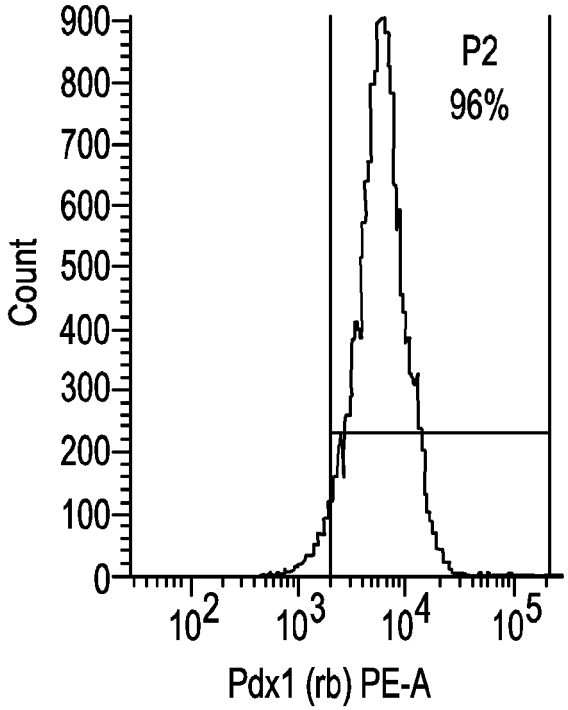


FIG. 2A

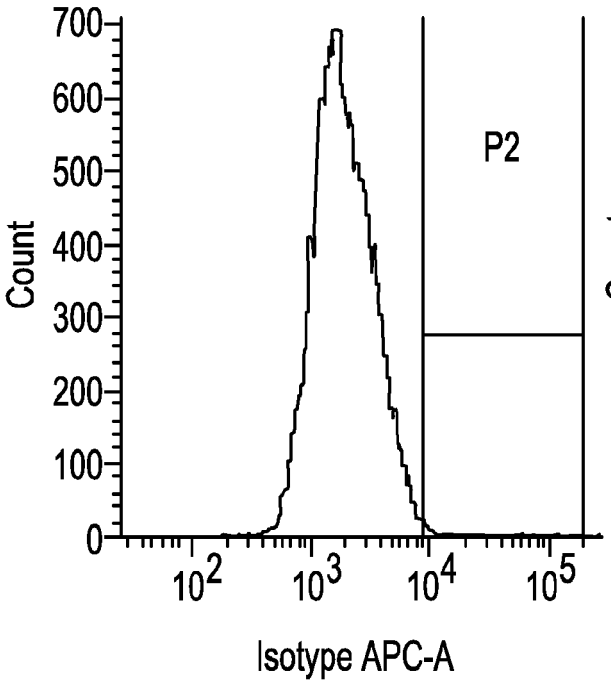


FIG. 2B

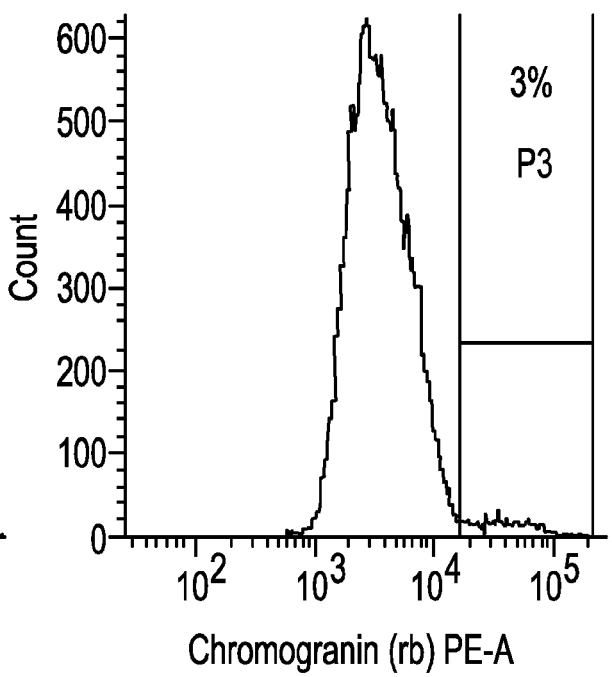


FIG. 2C

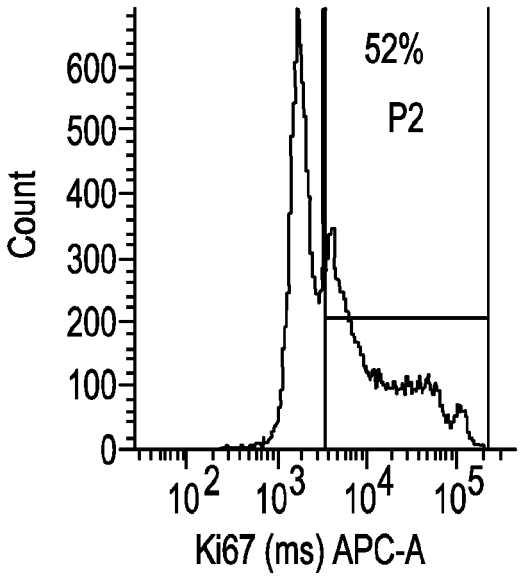


FIG. 2D

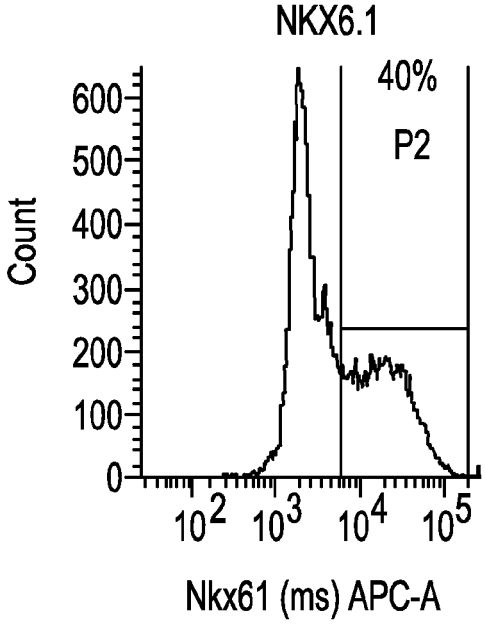


FIG. 2E

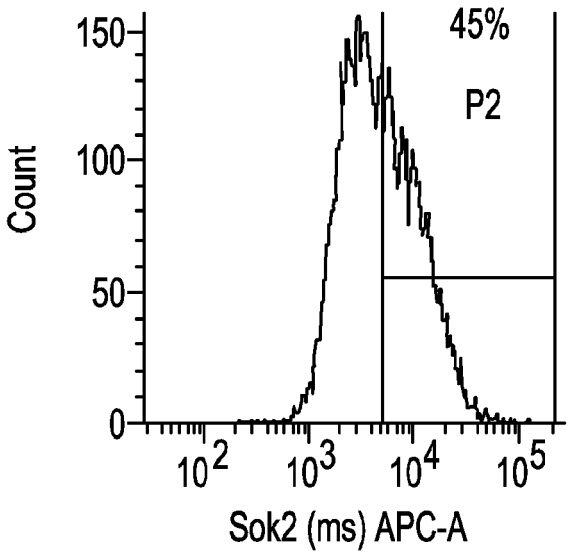


FIG. 2F

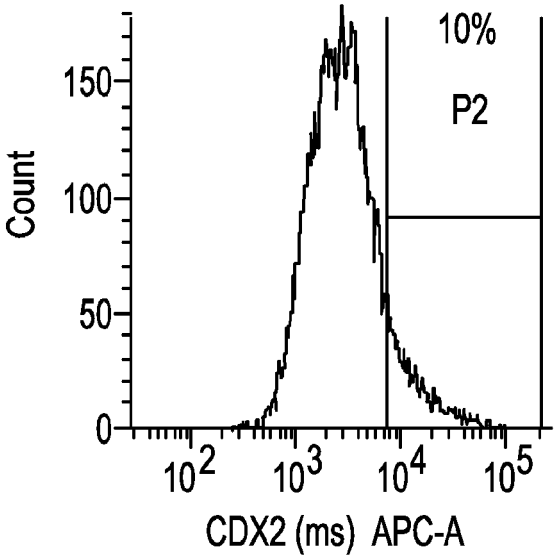


FIG. 2G

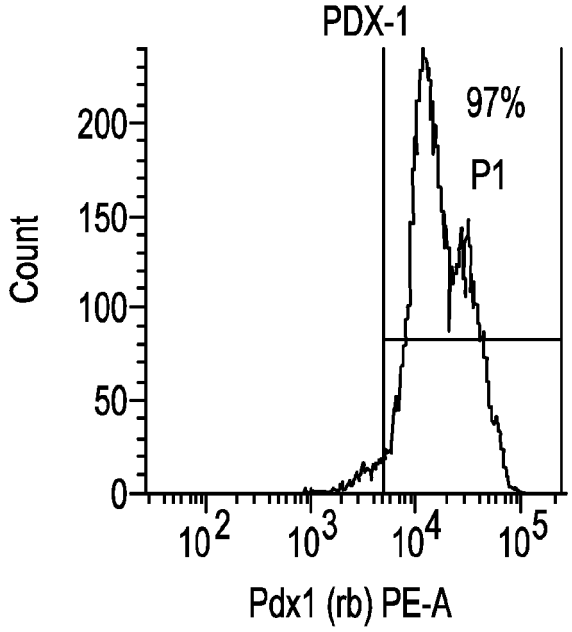


FIG. 3A

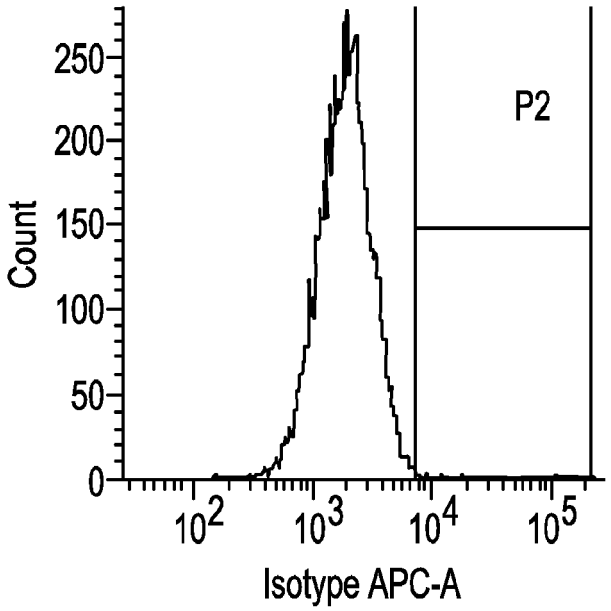


FIG. 3B

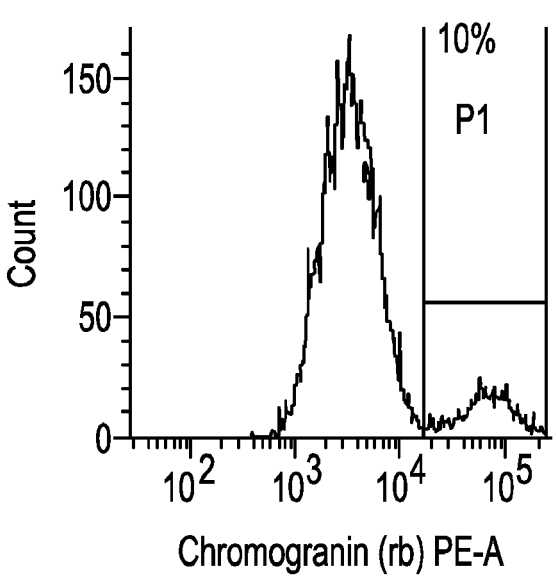


FIG. 3C

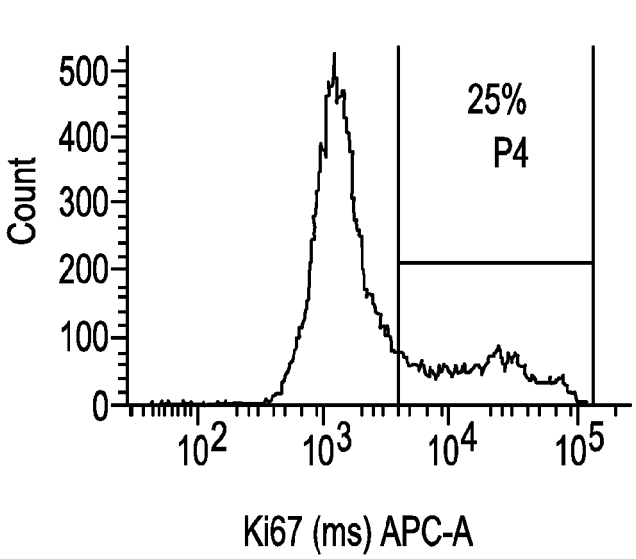


FIG. 3D

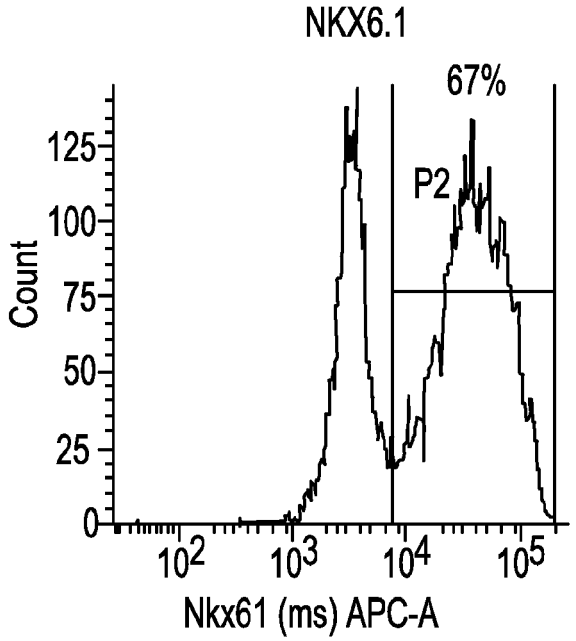


FIG. 3E

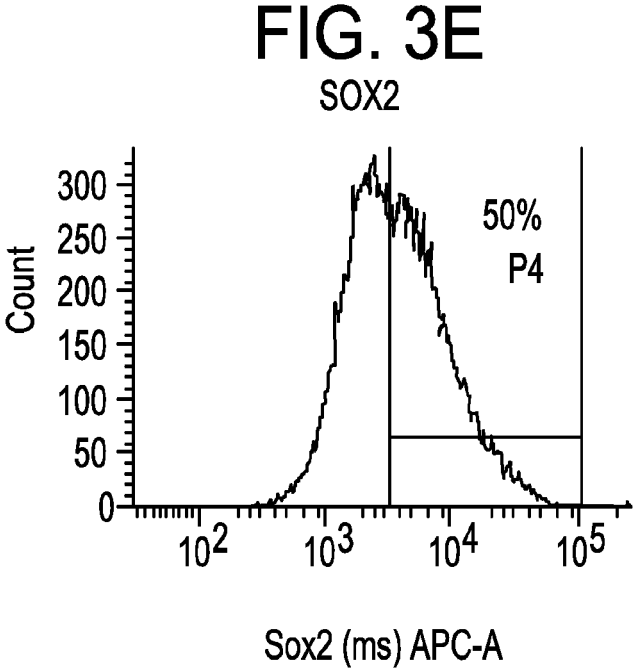


FIG. 3F

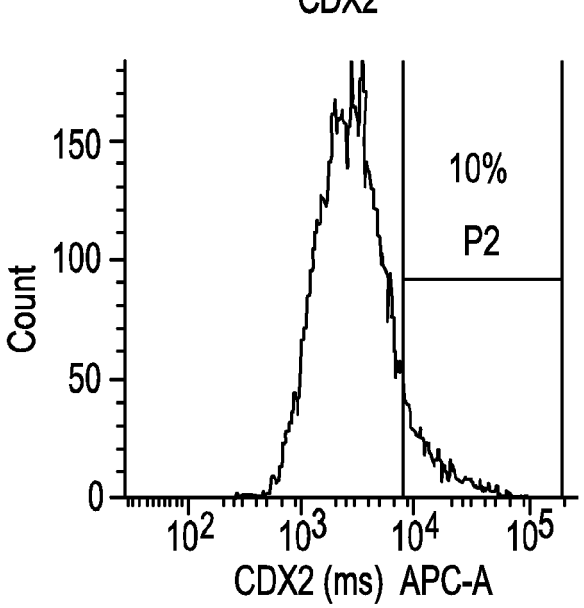


FIG. 3G

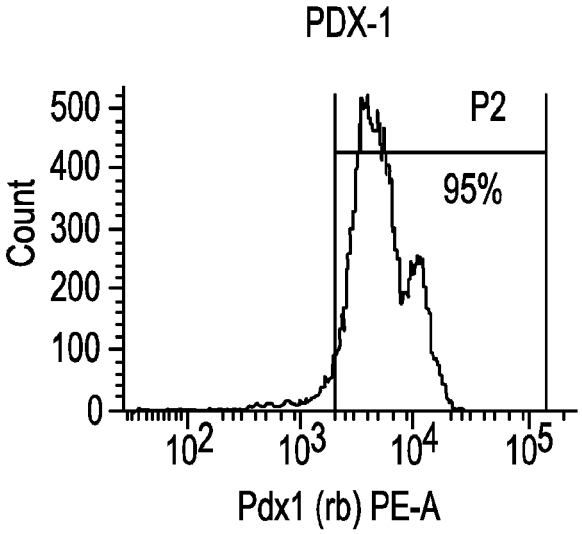


FIG. 4A

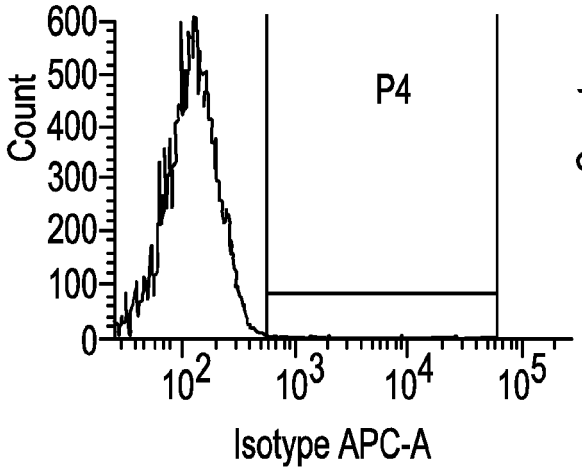


FIG. 4B

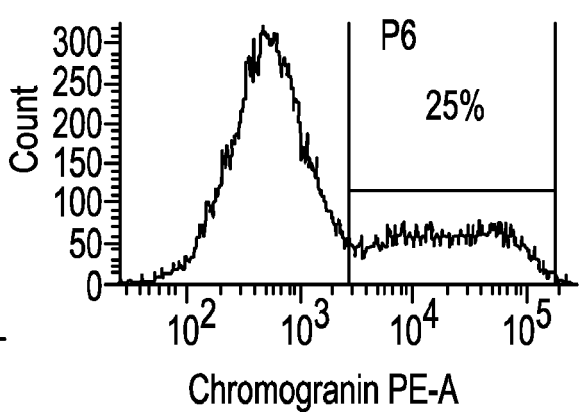


FIG. 4C

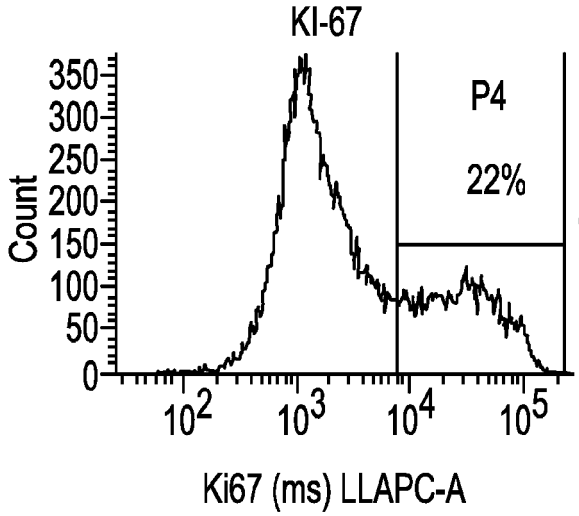


FIG. 4D

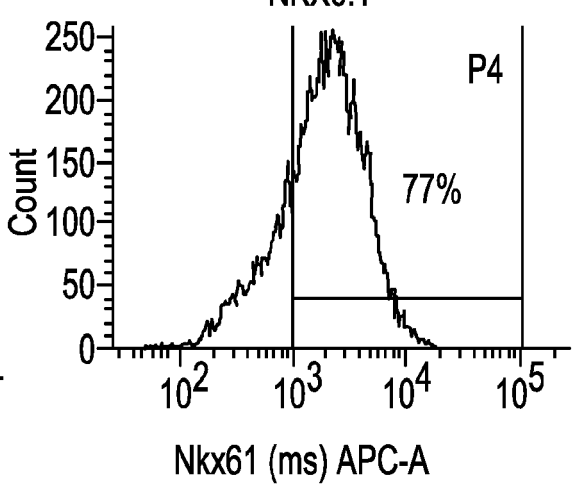


FIG. 4E

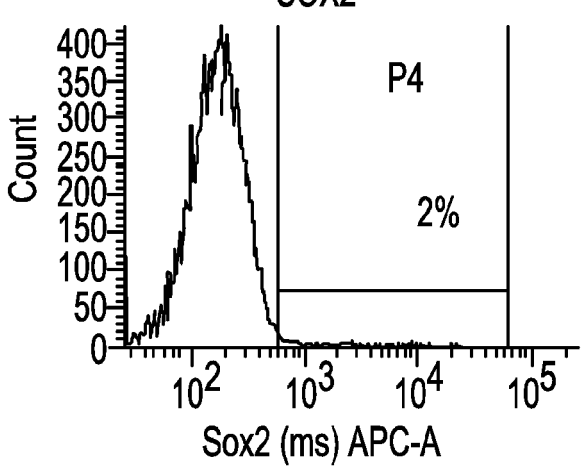


FIG. 4F

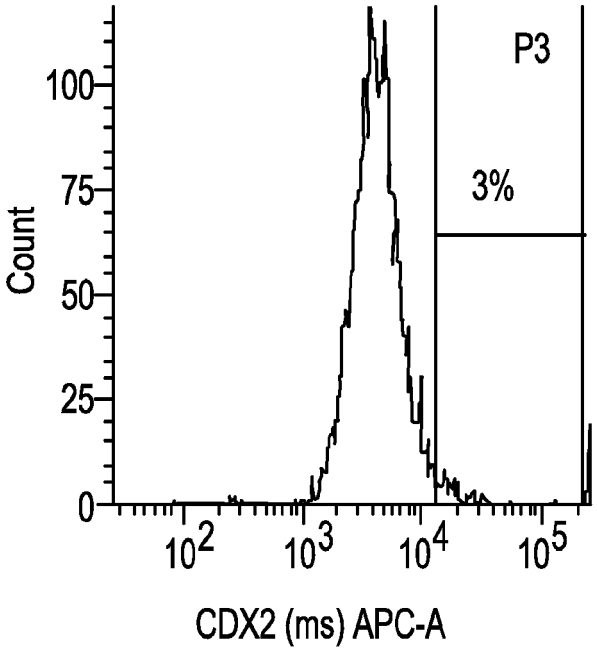

CDX2
P3
3%
Count
100
75
50
25
0
10^2
10^3
10^4
10^5
CDX2 (ms) APC-A

FIG. 4G

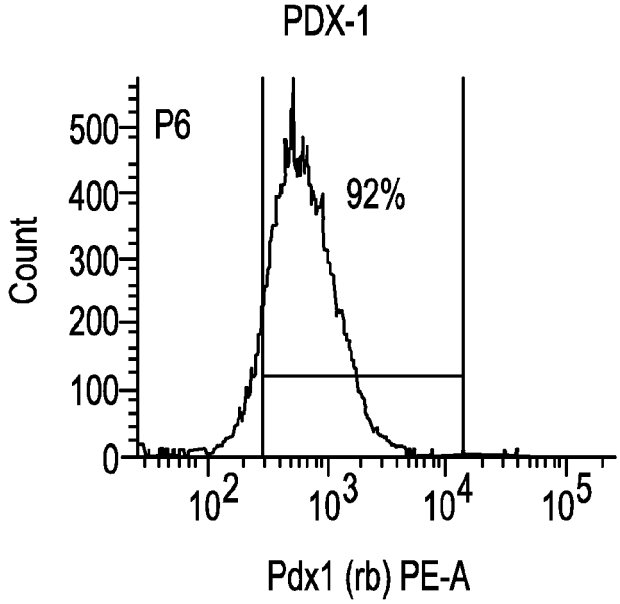

PDX-1
P6
92%
Count
500
400
300
200
100
0
10^2
10^3
10^4
10^5
Pdx1 (rb) PE-A

FIG. 5A

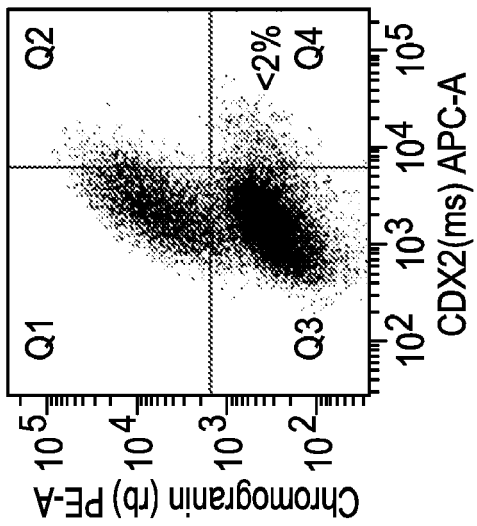


FIG. 5B

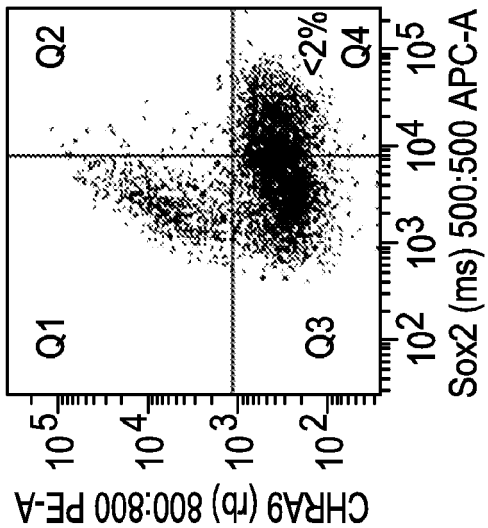


FIG. 5C

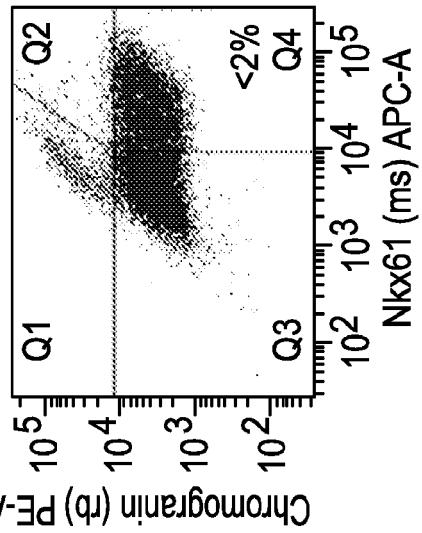


FIG. 6A

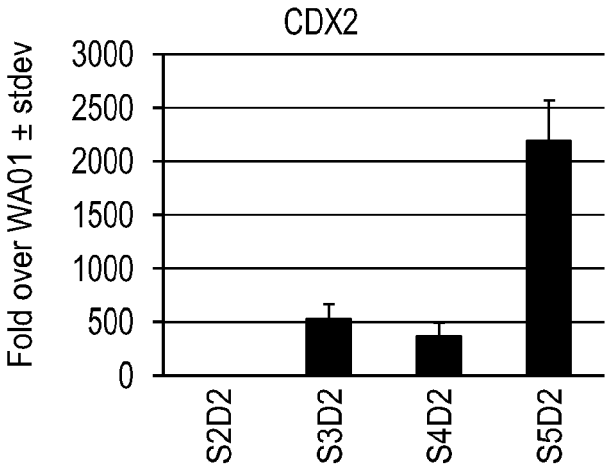


FIG. 6B

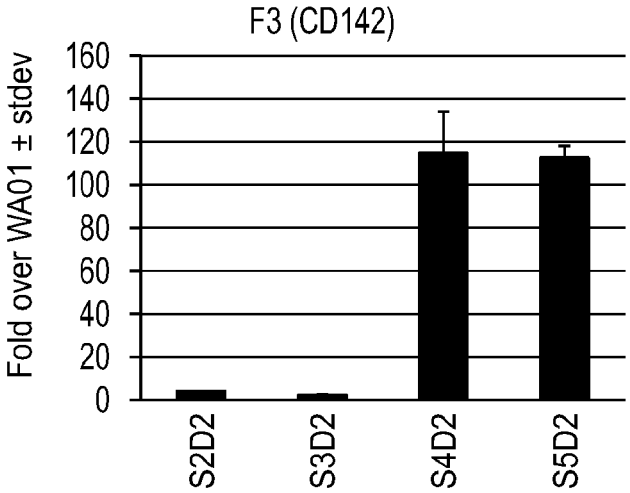


FIG. 6C

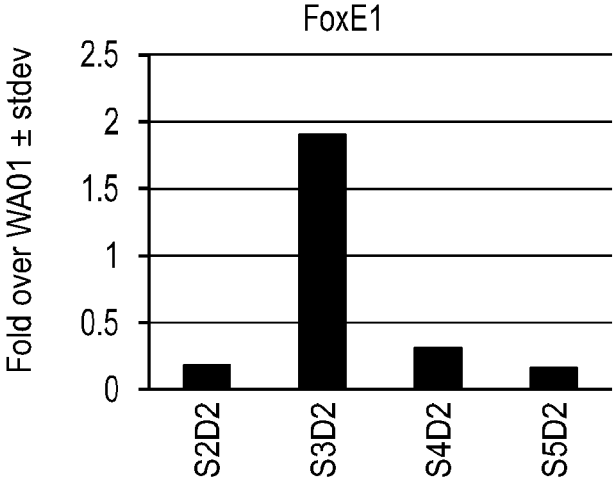


FIG. 6D

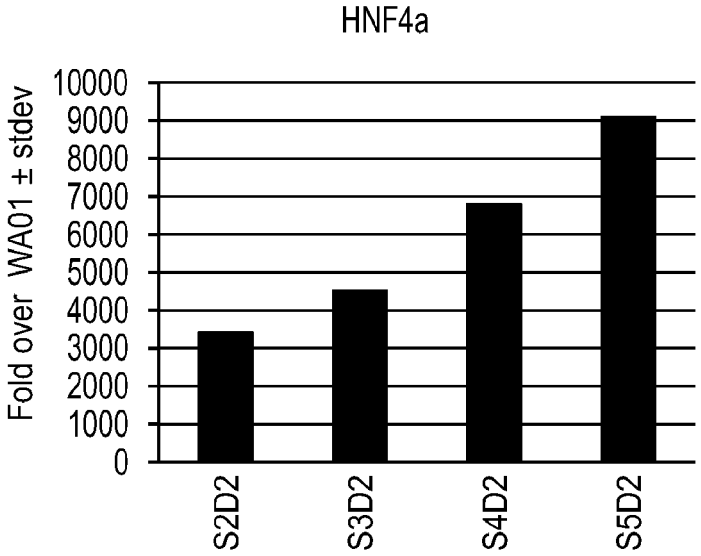


FIG. 6E

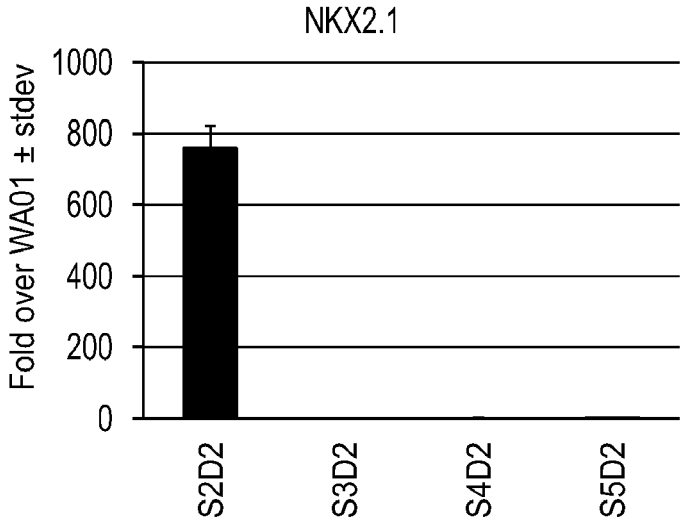


FIG. 6F

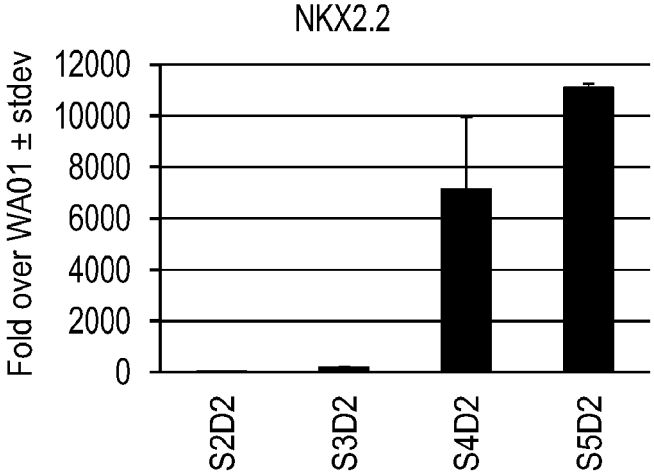


FIG. 6G

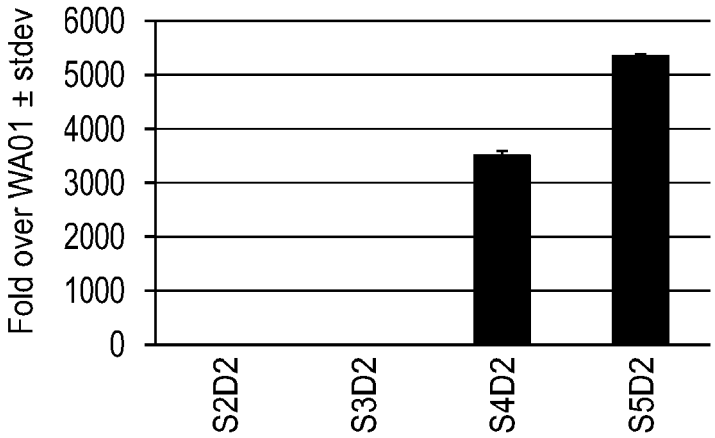


FIG. 6H

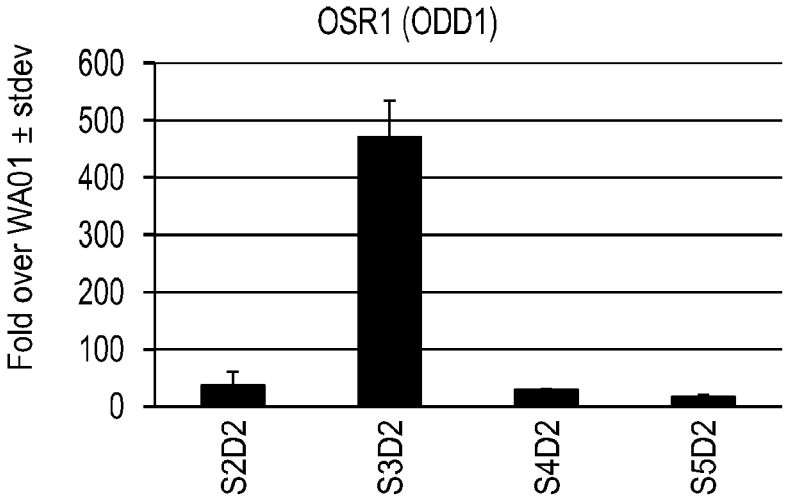


FIG. 6I

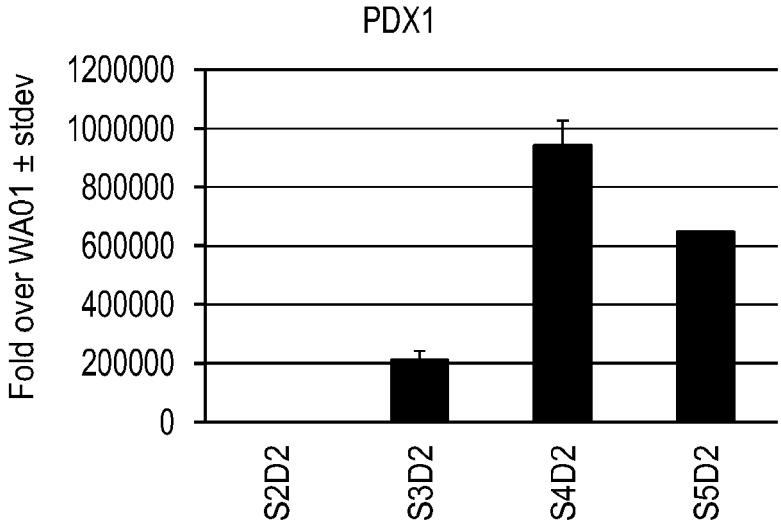


FIG. 6J

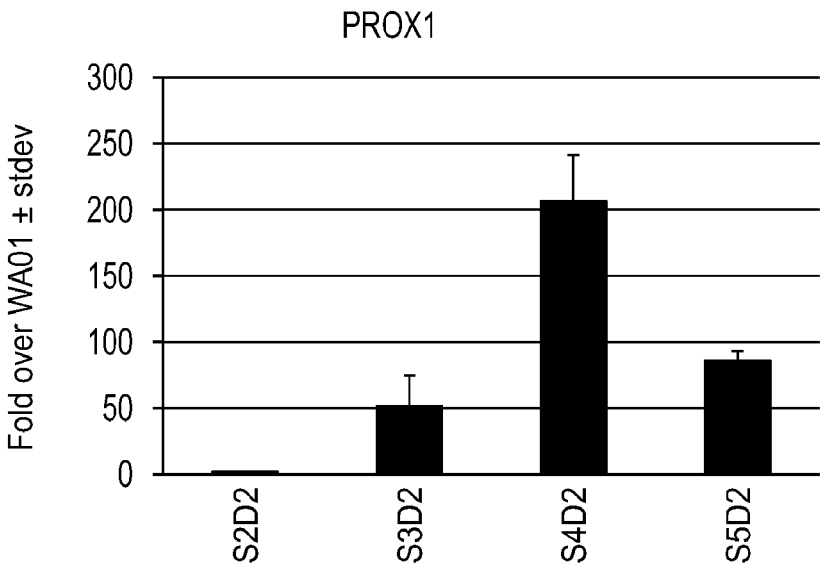


FIG. 6K

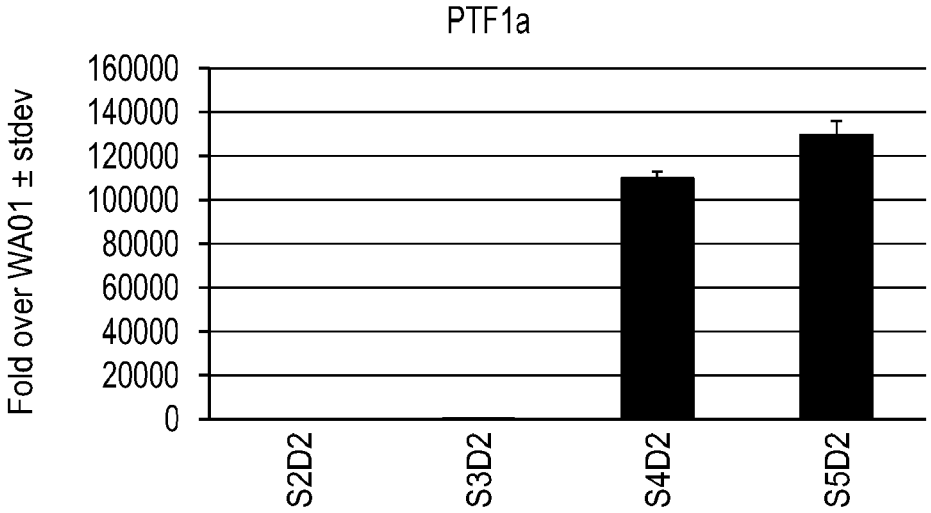


FIG. 6L

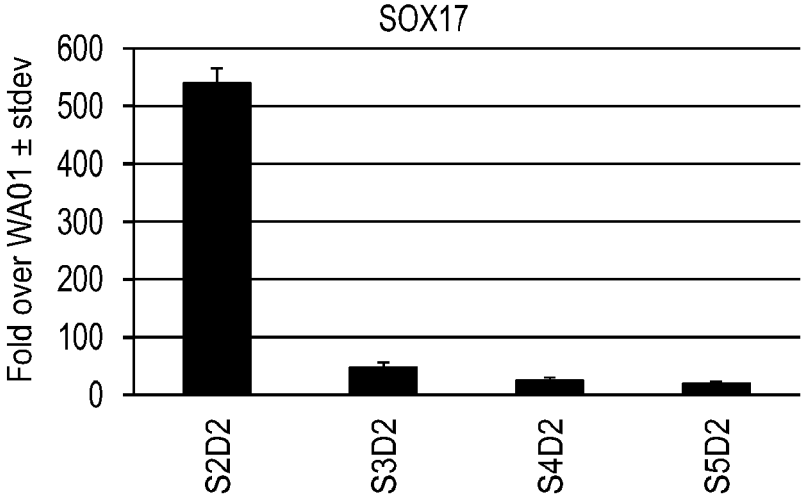


FIG. 6M

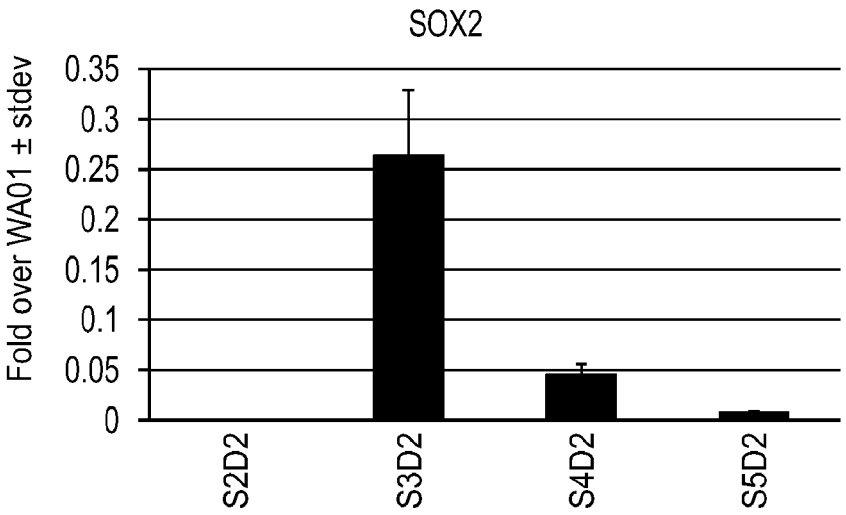


FIG. 6N

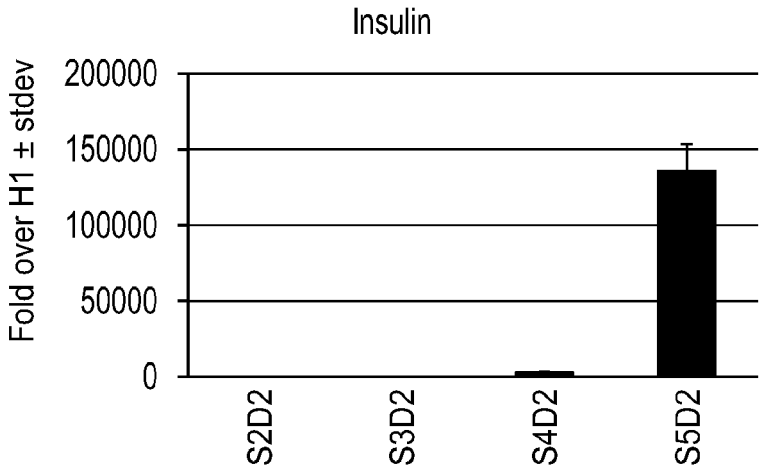


FIG. 6O

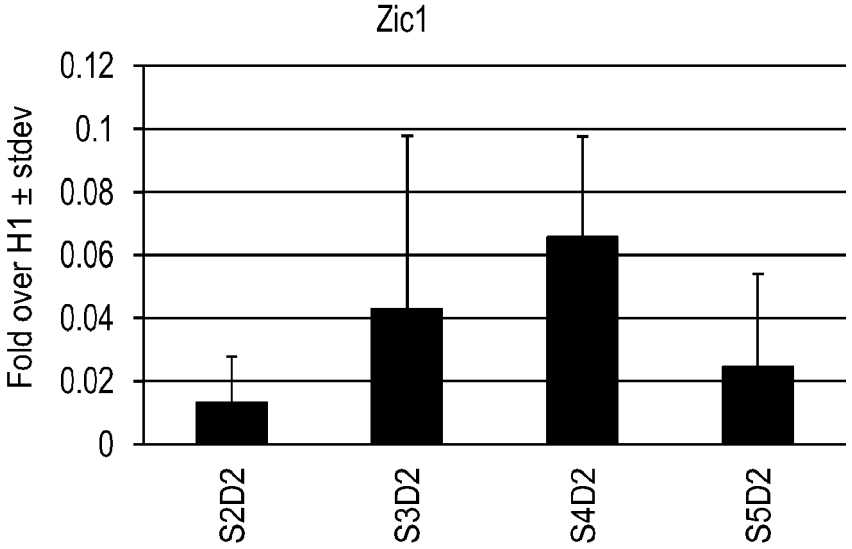


FIG. 6P

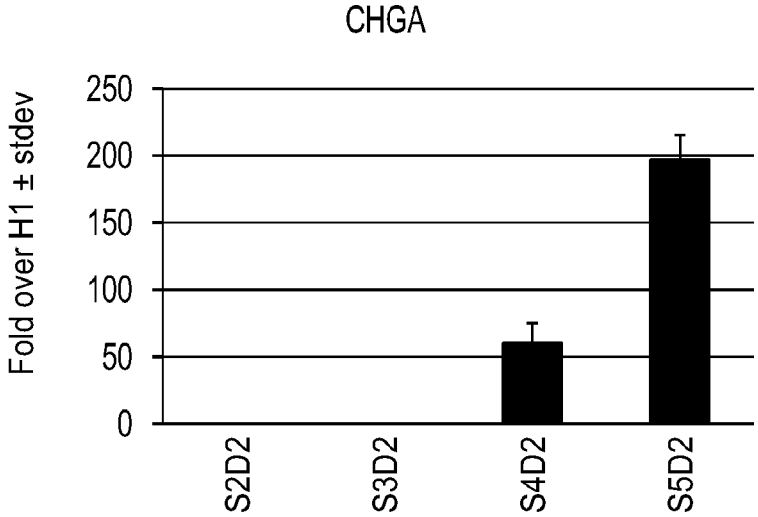


FIG. 6Q

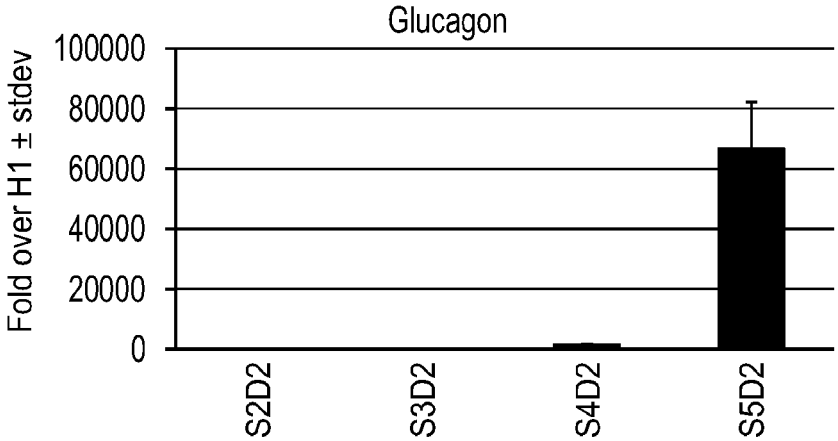


FIG. 6R

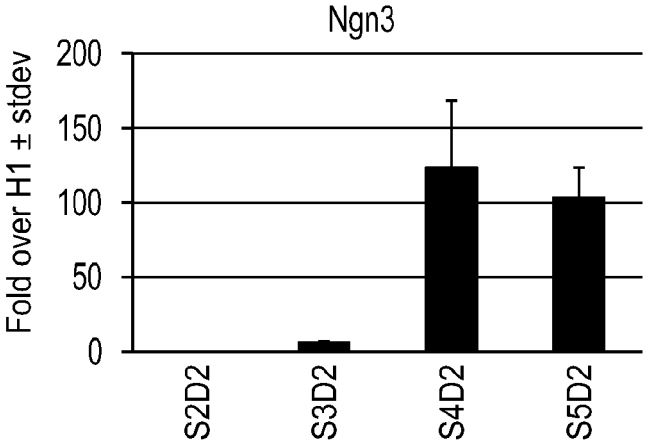


FIG. 6S

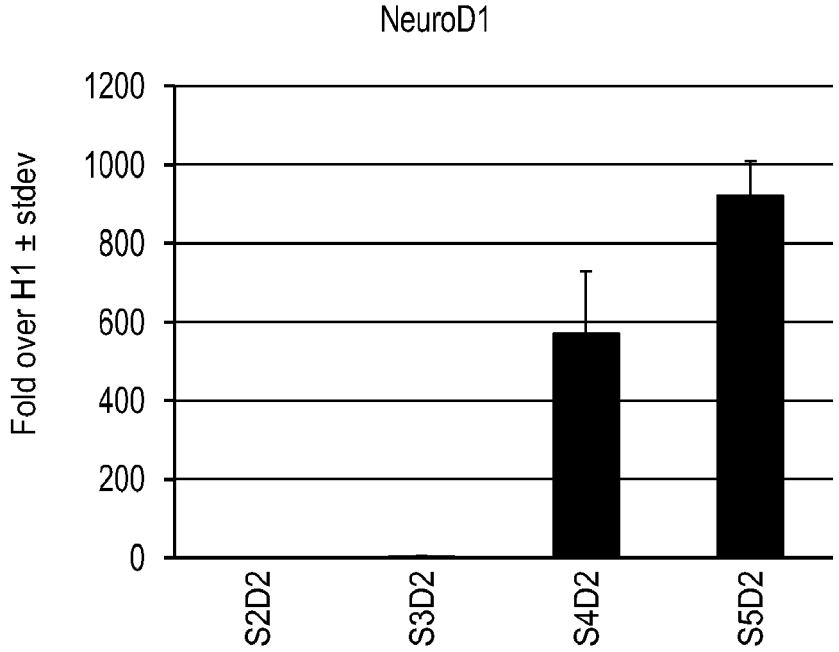

NeuroD1
Fold over H1 ± stdev
1200
1000
800
600
400
200
0
S2D2
S3D2
S4D2
S5D2

FIG. 6T

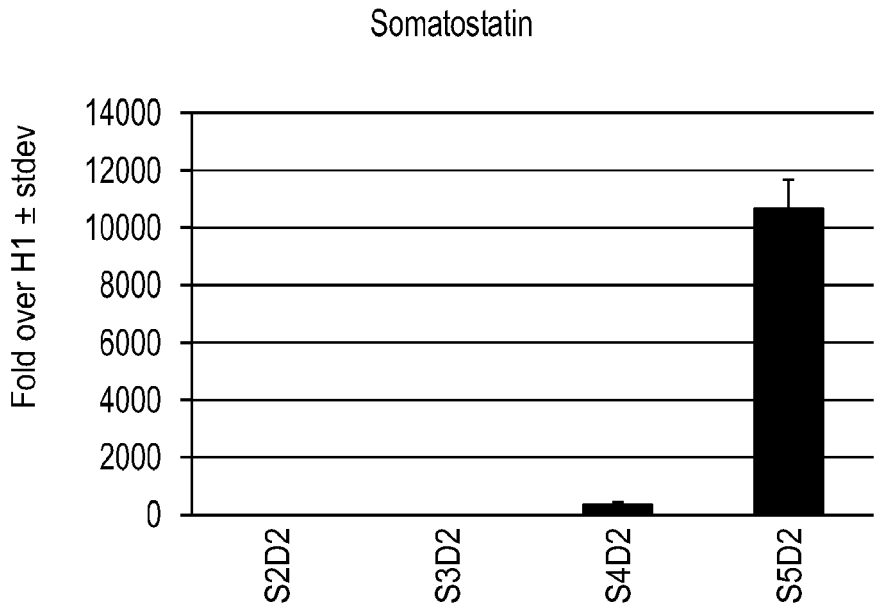

Somatostatin
Fold over H1 ± stdev
14000
12000
10000
8000
6000
4000
2000
0
S2D2
S3D2
S4D2
S5D2

FIG. 7A

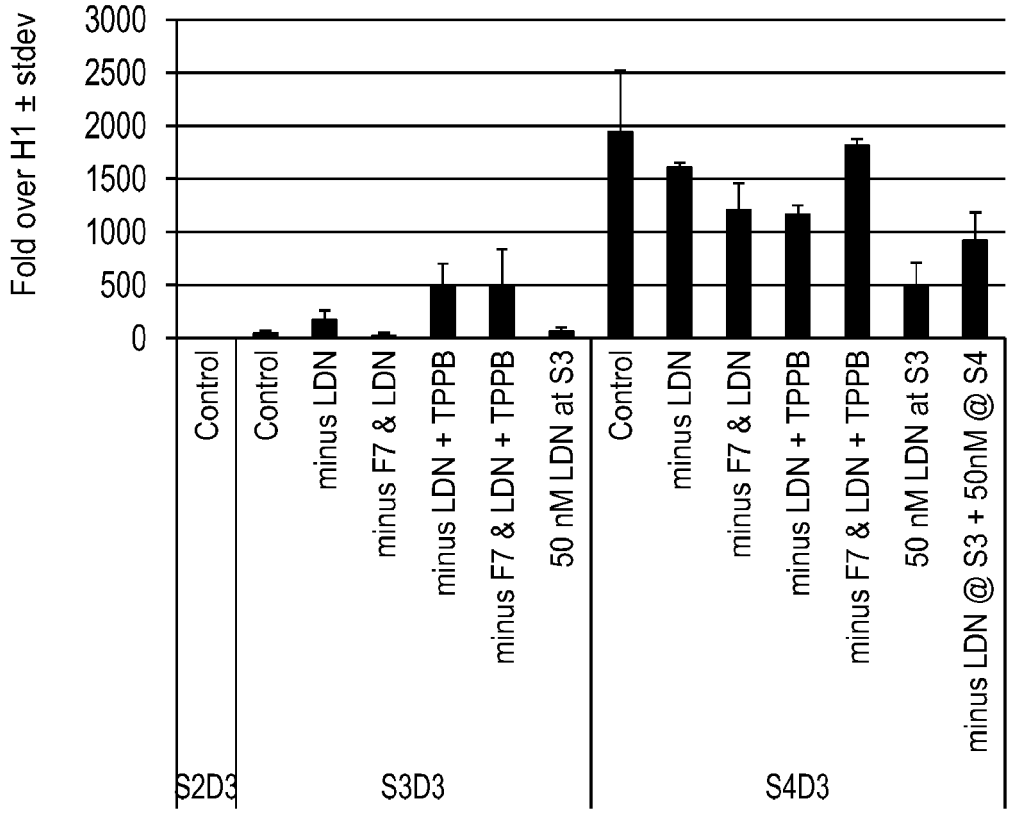
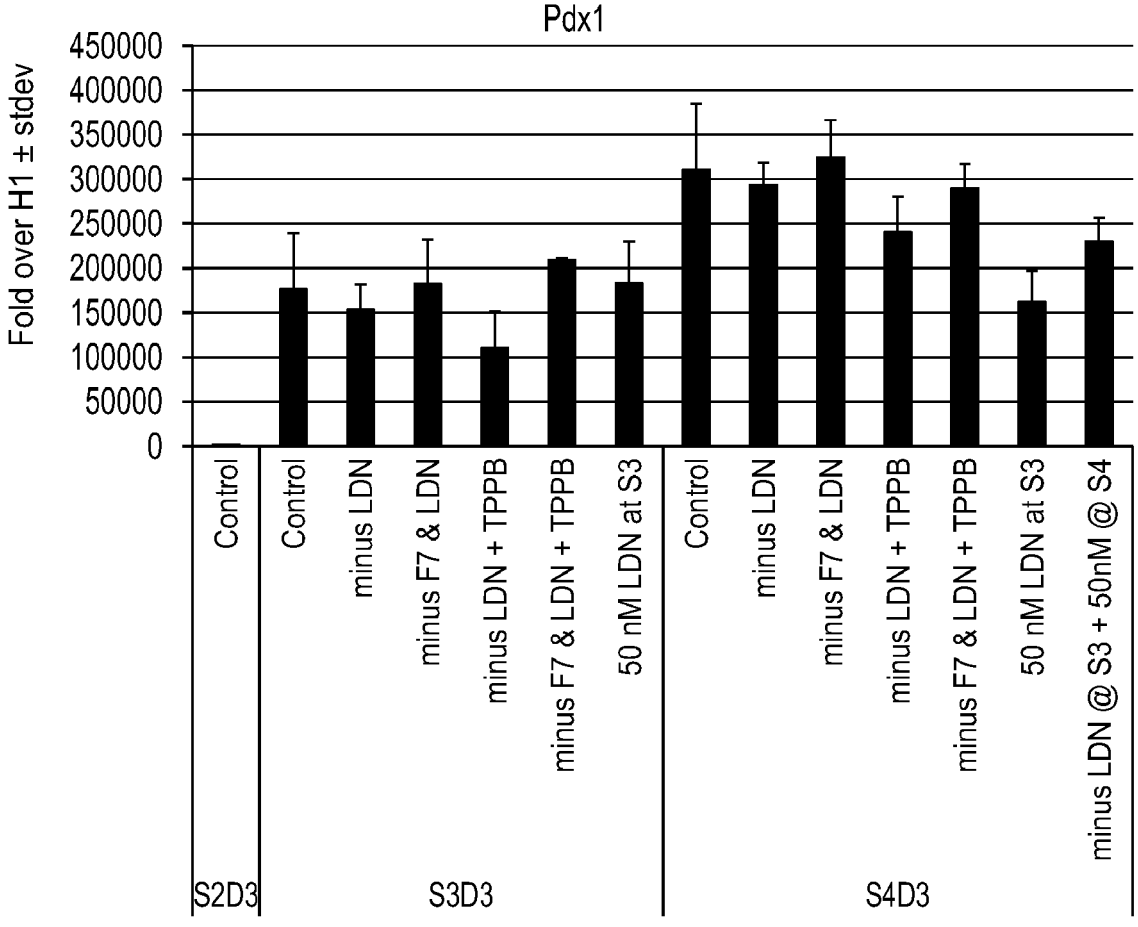

Nkx6.1
Fold over H1 ± stdev
3000
2500
2000
1500
1000
500
0
Control
Control
minus LDN
minus F7 & LDN
minus LDN + TPPB
minus F7 & LDN + TPPB
50 nM LDN at S3
Control
minus LDN
minus F7 & LDN
minus LDN + TPPB
minus F7 & LDN + TPPB
50 nM LDN at S3
minus LDN @ S3 + 50nM @ S4
S2D3
S3D3
S4D3

FIG. 7B


Pdx1
Fold over H1 ± stdev
450000
400000
350000
300000
250000
200000
150000
100000
50000
0
Control
Control
minus LDN
minus F7 & LDN
minus LDN + TPPB
minus F7 & LDN + TPPB
50 nM LDN at S3
Control
minus LDN
minus F7 & LDN
minus LDN + TPPB
minus F7 & LDN + TPPB
50 nM LDN at S3
minus LDN @ S3 + 50nM @ S4
S2D3
S3D3
S4D3

18/79

FIG. 7C

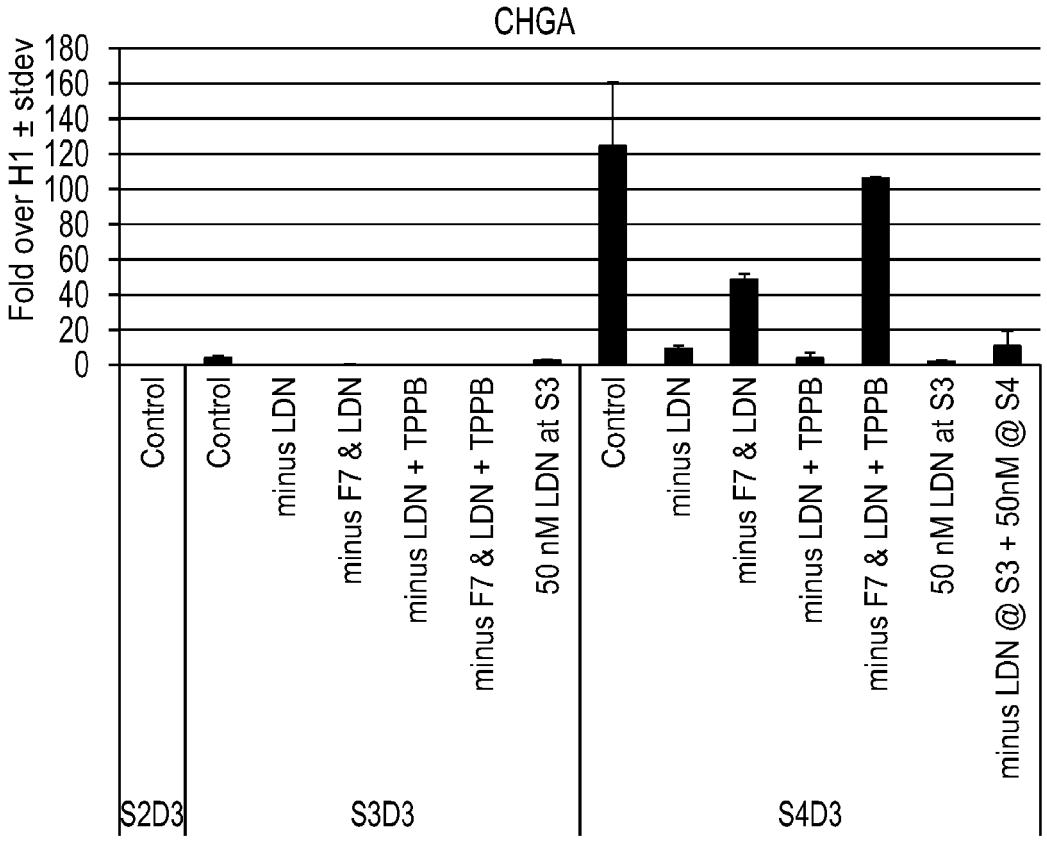


FIG. 7D

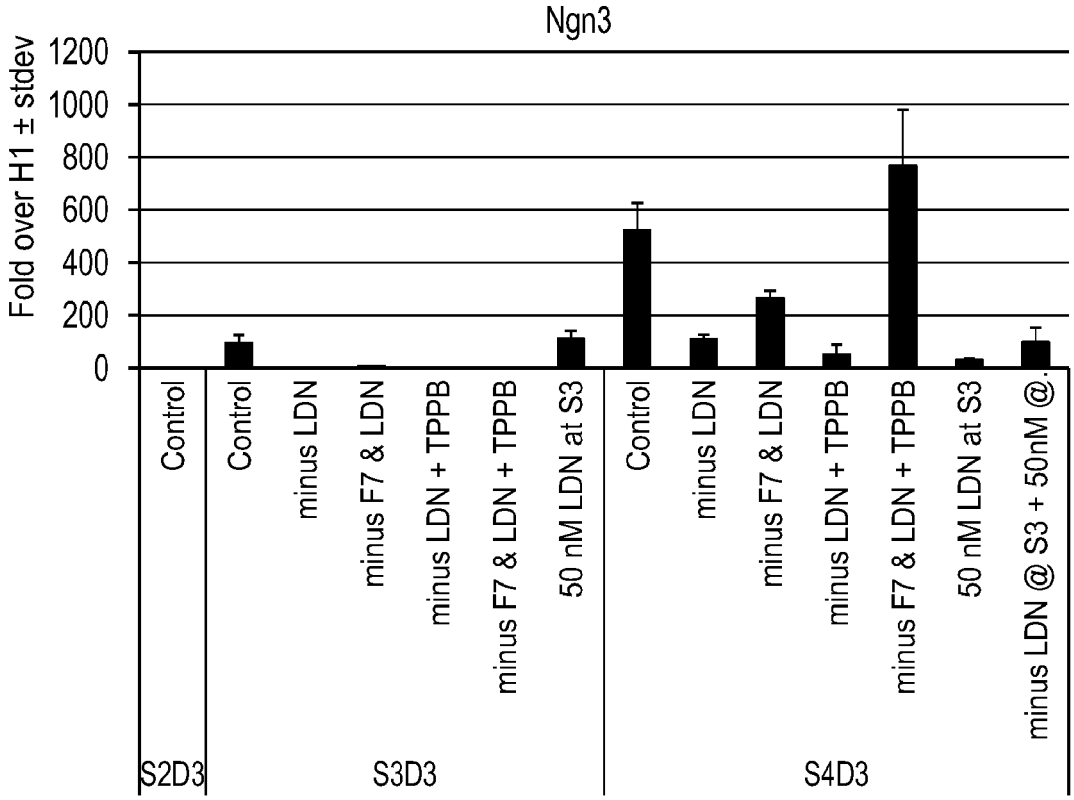


FIG. 7E

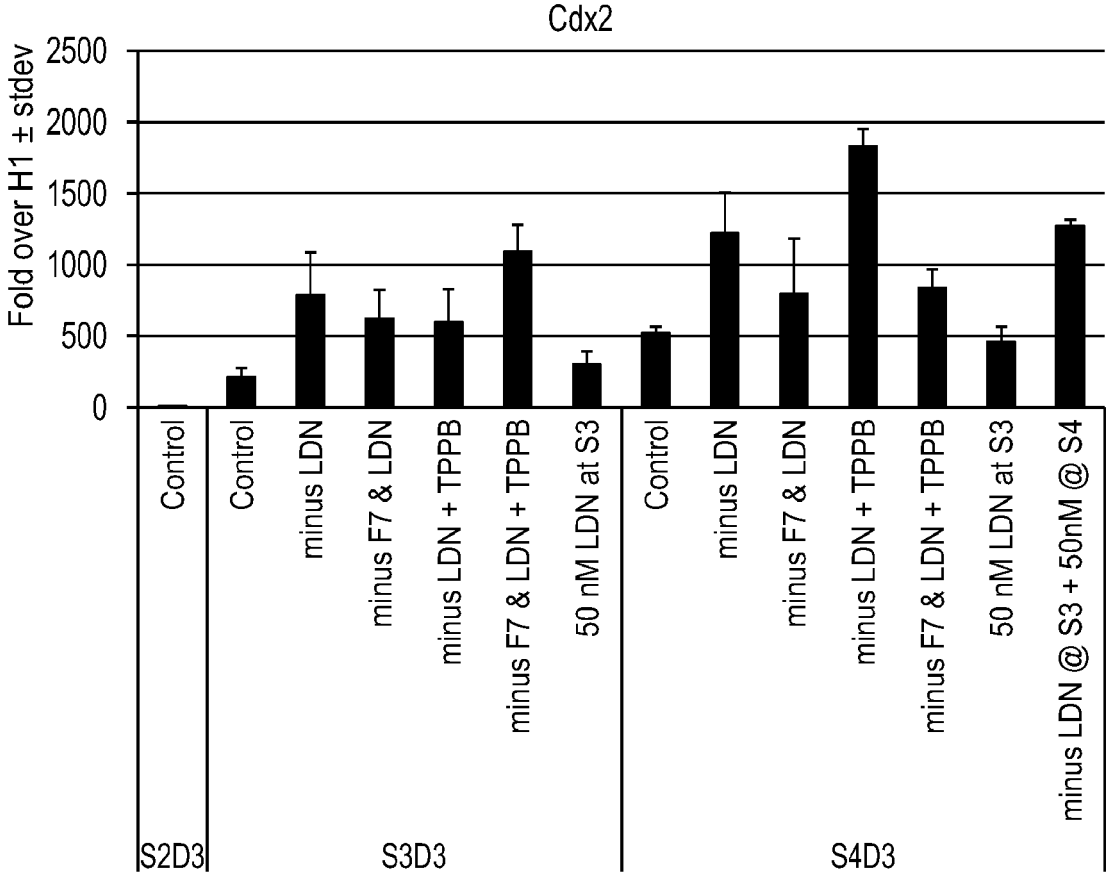

Cdx2
Fold over H1 ± stdev
2500
2000
1500
1000
500
0
Control
Control
minus LDN
minus F7 & LDN
minus LDN + TPPB
minus F7 & LDN + TPPB
50 nM LDN at S3
Control
minus LDN
minus F7 & LDN
minus LDN + TPPB
minus F7 & LDN + TPPB
50 nM LDN at S3
minus LDN @ S3 + 50nM @ S4
S2D3
S3D3
S4D3

FIG. 7F

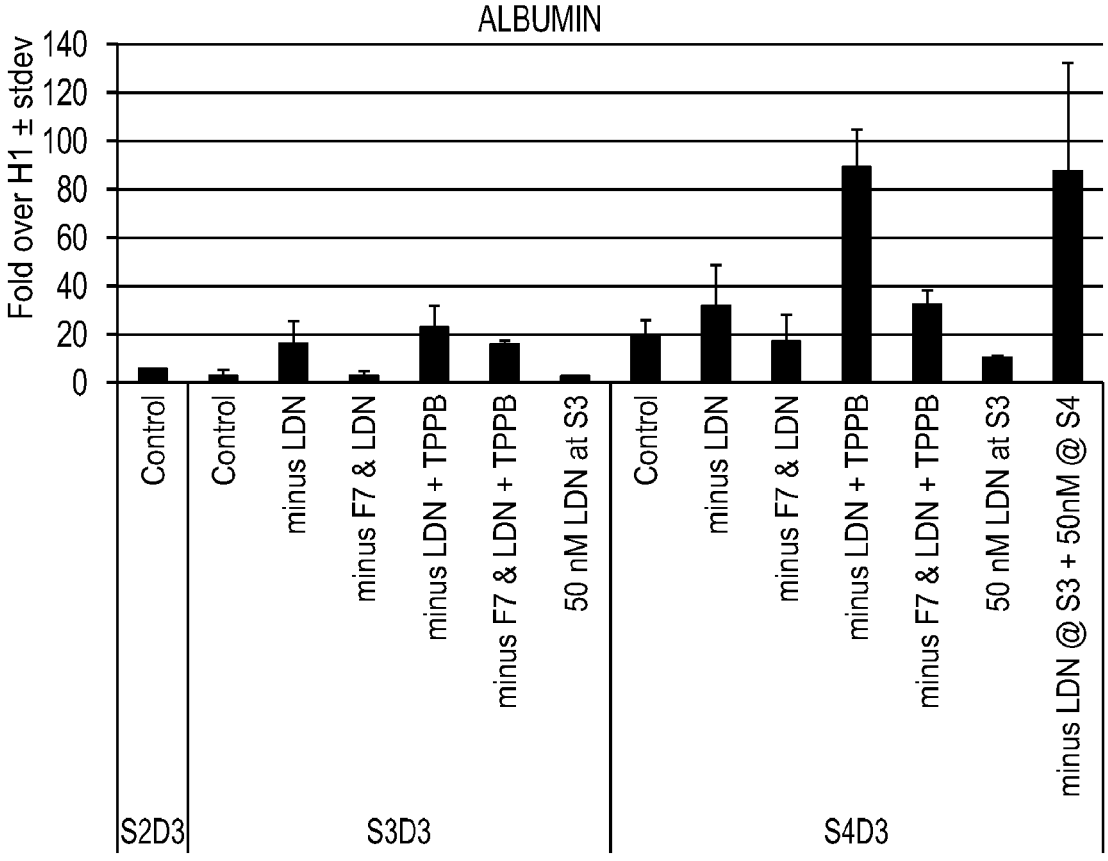

ALBUMIN
Fold over H1 ± stdev
140
120
100
80
60
40
20
0
Control
Control
minus LDN
minus F7 & LDN
minus LDN + TPPB
minus F7 & LDN + TPPB
50 nM LDN at S3
Control
minus LDN
minus F7 & LDN
minus LDN + TPPB
minus F7 & LDN + TPPB
50 nM LDN at S3
minus LDN @ S3 + 50nM @ S4
S2D3
S3D3
S4D3

FIG. 7G

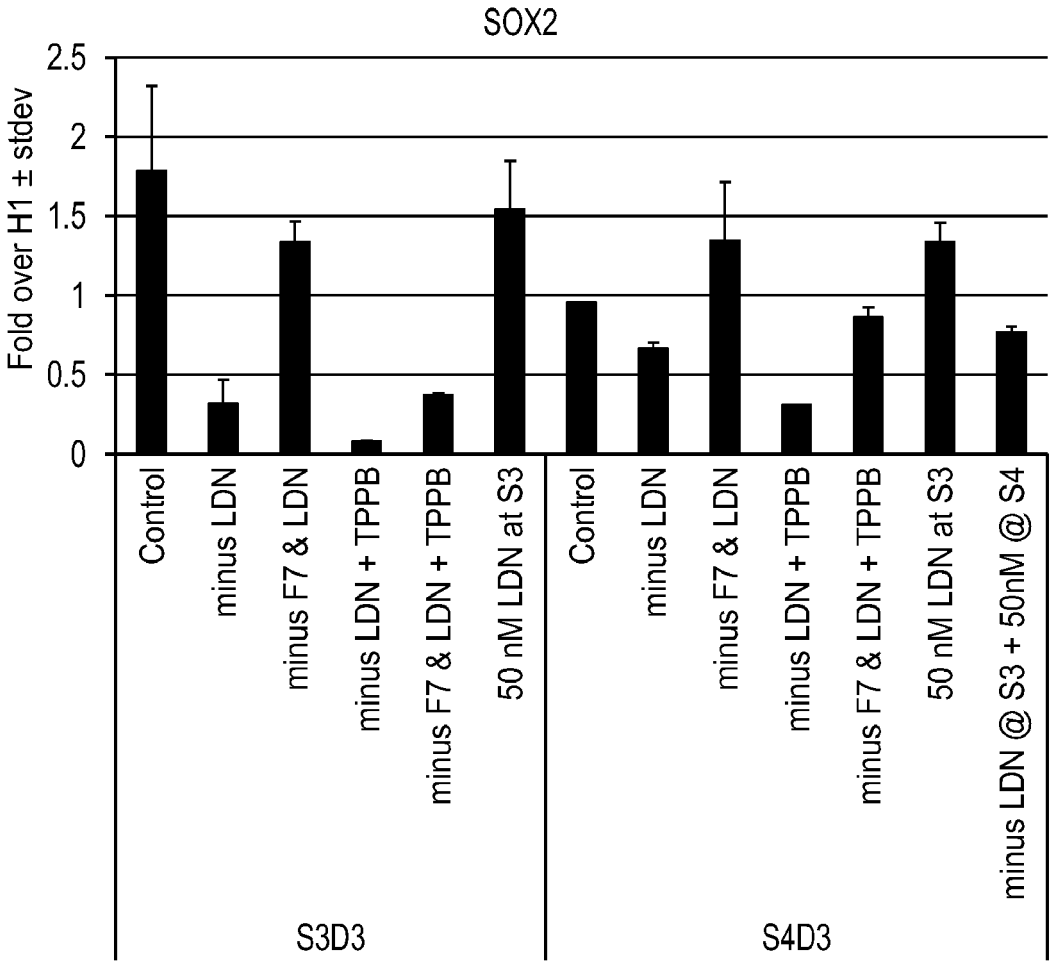

SOX2
Fold over H1 ± stdev
2.5
2
1.5
1
0.5
0
Control
minus LDN
minus F7 & LDN
minus LDN + TPPB
minus F7 & LDN + TPPB
50 nM LDN at S3
Control
minus LDN
minus F7 & LDN
minus LDN + TPPB
minus F7 & LDN + TPPB
50 nM LDN at S3
minus LDN @ S3 + 50nM @ S4
S3D3
S4D3

FIG. 8A

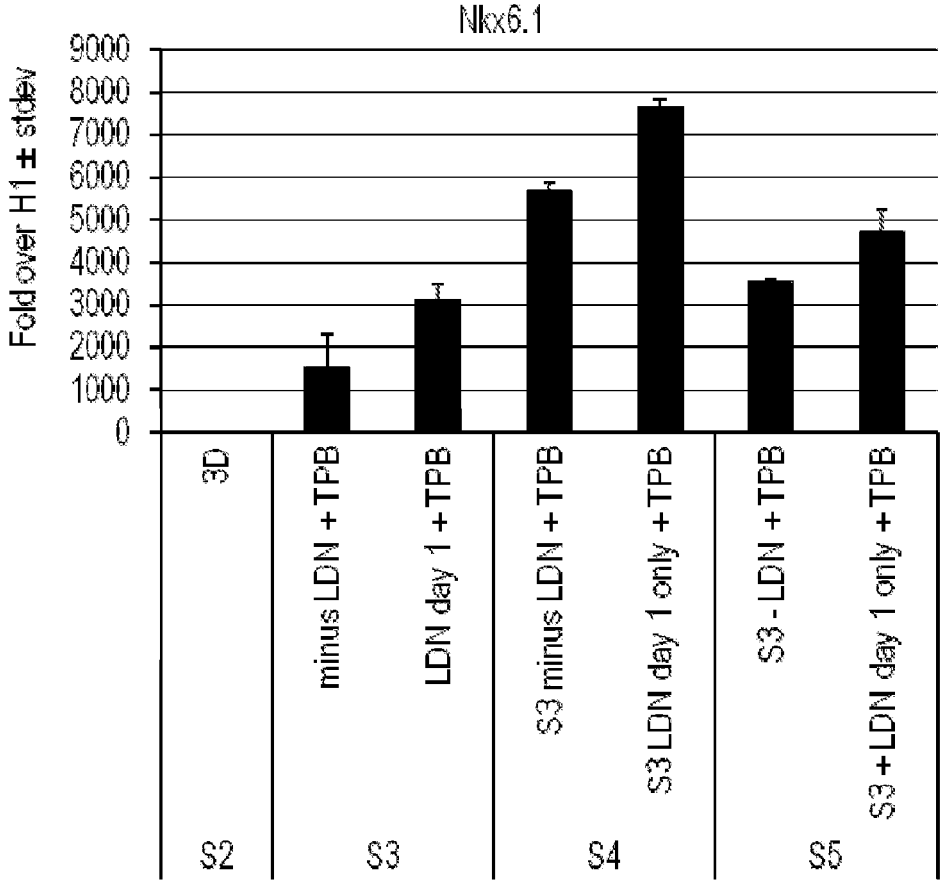

Nkx6.1
Fold over H1 ± stdev
9000
8000
7000
6000
5000
4000
3000
2000
1000
0
3D
minus LDN + TPB
LDN day 1 + TPB
S3 minus LDN + TPB
S3 LDN day 1 only + TPB
S3 - LDN + TPB
S3 + LDN day 1 only + TPB
S2
S3
S4
S5

FIG. 8B

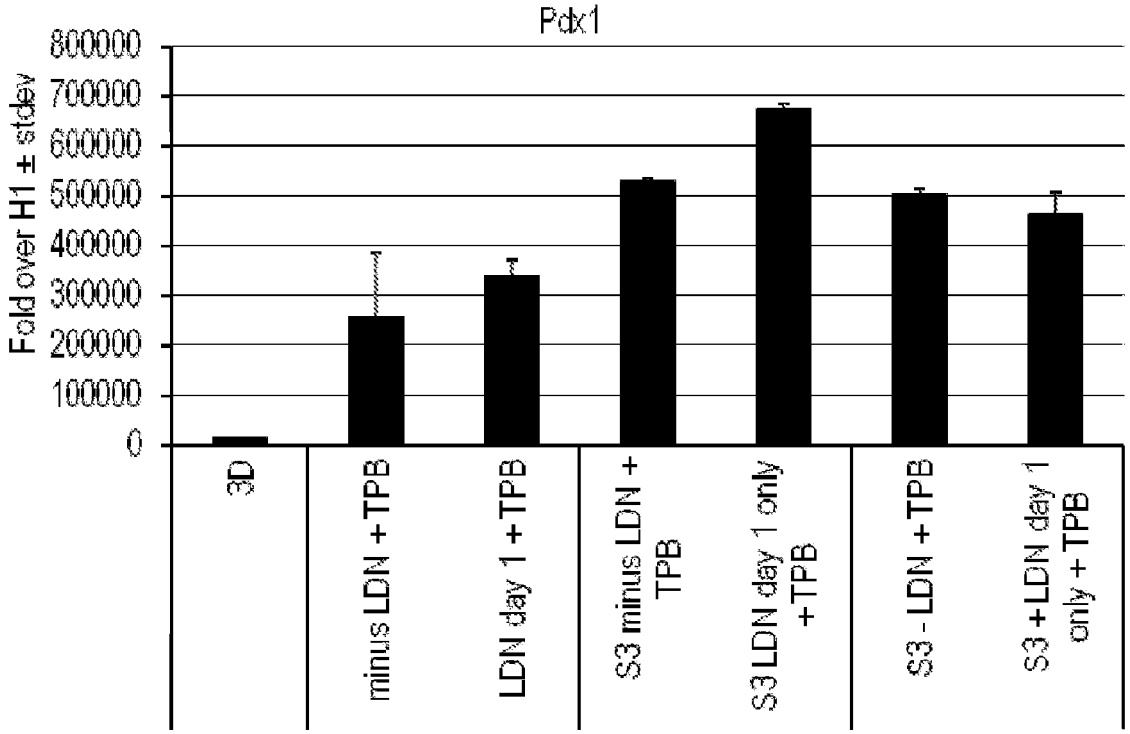

Pdx1
Fold over H1 ± stdev
800000
700000
600000
500000
400000
300000
200000
100000
0
3D
minus LDN + TPB
LDN day 1 + TPB
S3 minus LDN + TPB
S3 LDN day 1 only + TPB
S3 - LDN + TPB
S3 + LDN day 1 only + TPB

FIG. 8C

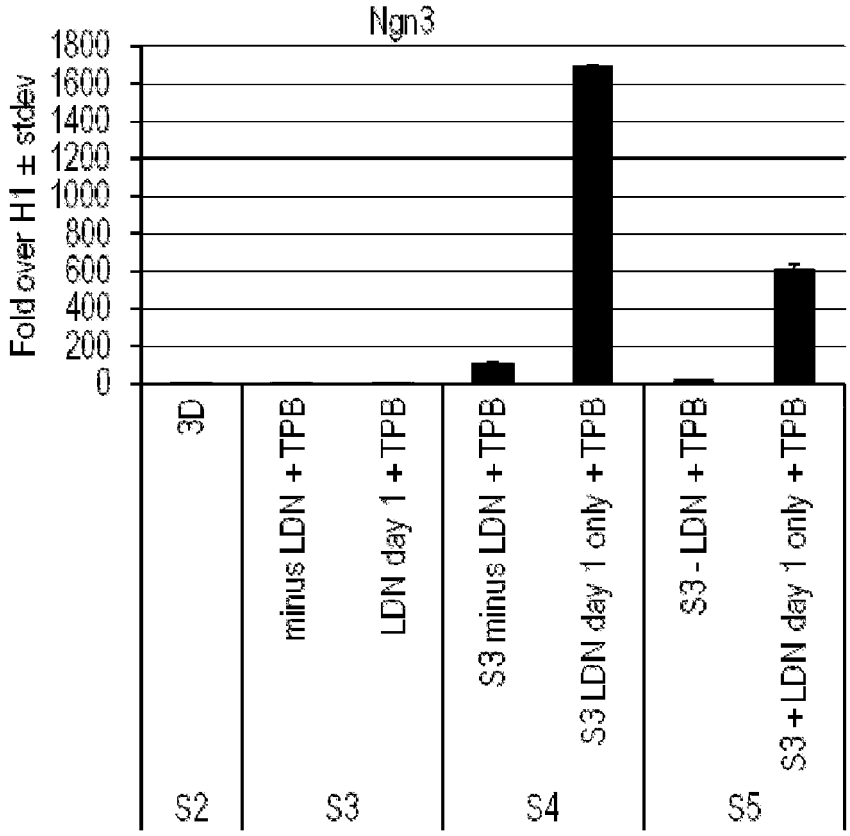

Ngn3
Fold over H1 ± stdev
1800
1600
1400
1200
1000
800
600
400
200
0
3D
minus LDN + TPB
LDN day 1 + TPB
S3 minus LDN + TPB
S3 LDN day 1 only + TPB
S3 - LDN + TPB
S3 + LDN day 1 only + TPB
S2
S3
S4
S5

FIG. 8D

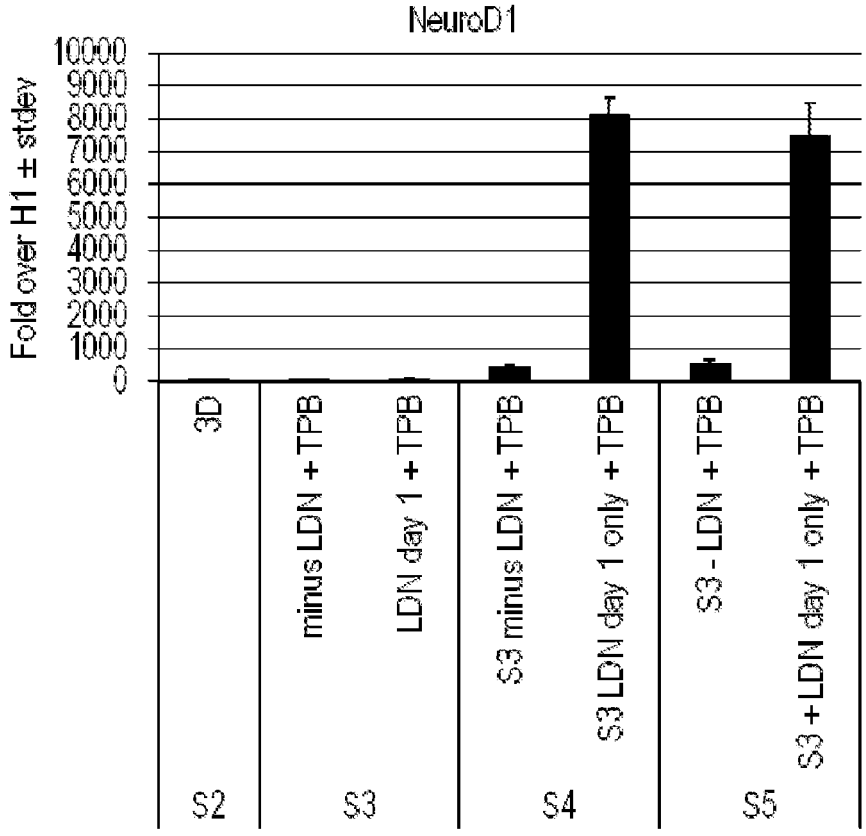

NeuroD1
Fold over H1 ± stdev
10000
9000
8000
7000
6000
5000
4000
3000
2000
1000
0
3D
minus LDN + TPB
LDN day 1 + TPB
S3 minus LDN + TPB
S3 LDN day 1 only + TPB
S3 - LDN + TPB
S3 + LDN day 1 only + TPB
S2
S3
S4
S5

FIG. 8E

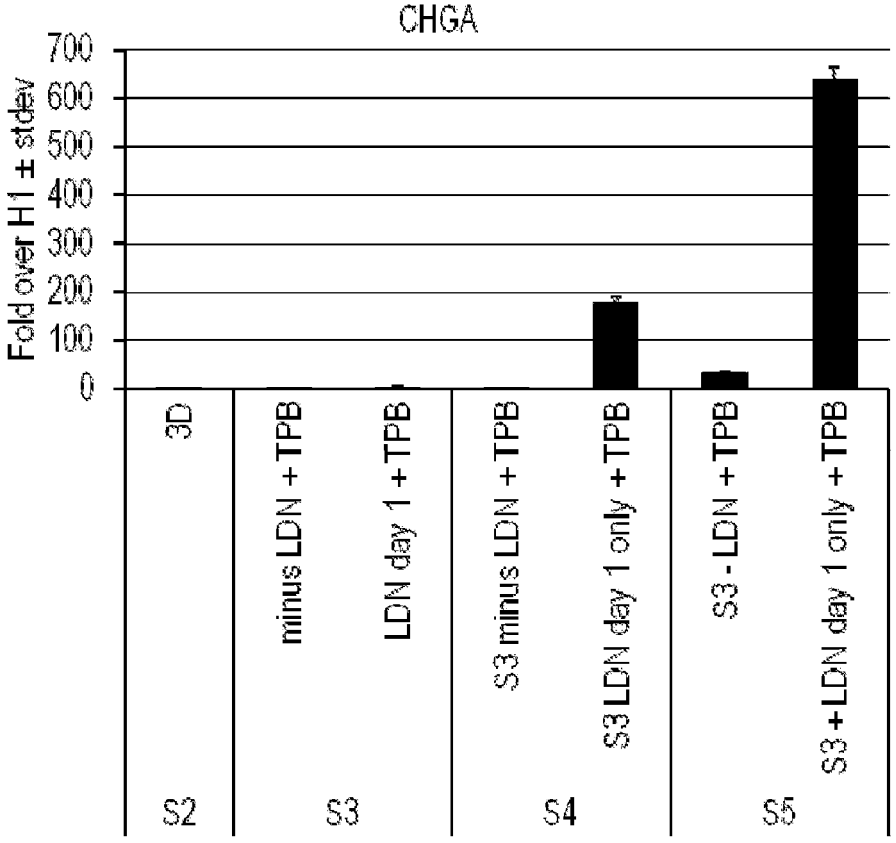

CHGA
Fold over H1 ± stdev
700
600
500
400
300
200
100
0
3D
minus LDN + TPB
LDN day 1 + TPB
S3 minus LDN + TPB
S3 LDN day 1 only + TPB
S3 - LDN + TPB
S3 + LDN day 1 only + TPB
S2
S3
S4
S5

FIG. 8F

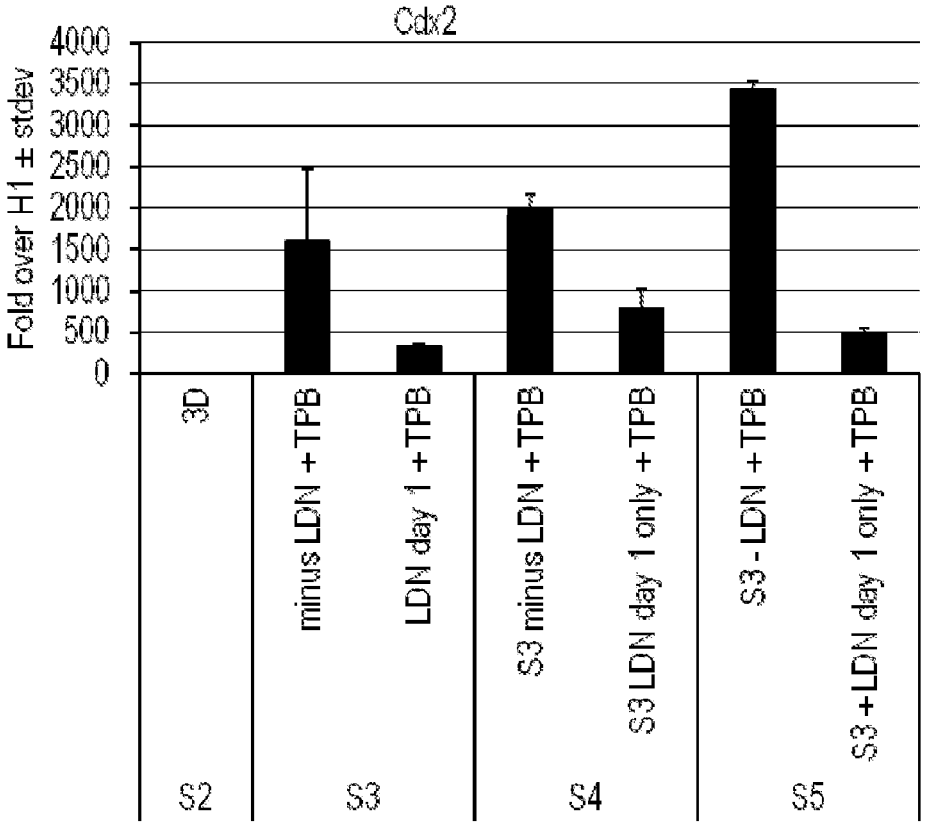

Cdx2
Fold over H1 ± stdev
4000
3500
3000
2500
2000
1500
1000
500
0
3D
minus LDN + TPB
LDN day 1 + TPB
S3 minus LDN + TPB
S3 LDN day 1 only + TPB
S3 - LDN + TPB
S3 + LDN day 1 only + TPB
S2
S3
S4
S5

FIG. 8G

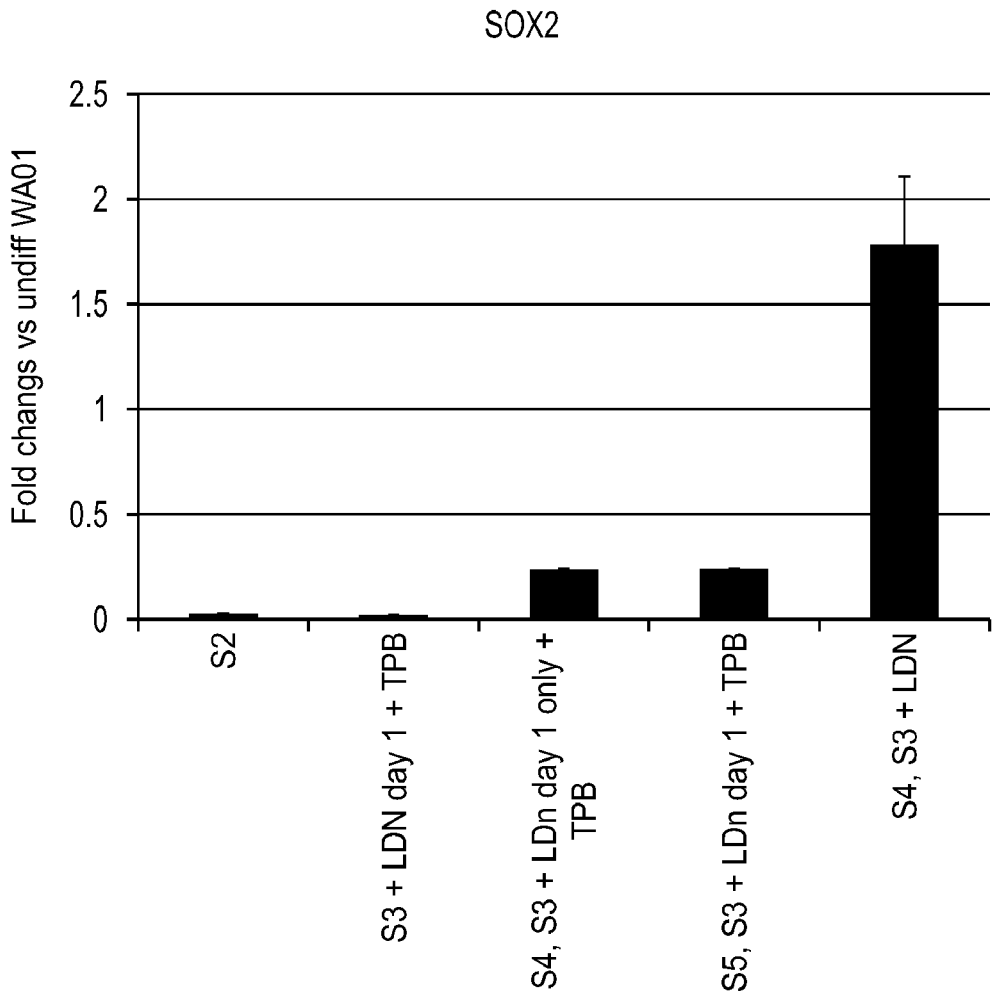

SOX2
Fold changs vs undiff WA01
2.5
2
1.5
1
0.5
0
S2
S3 + LDN day 1 + TPB
S4, S3 + LDn day 1 only + TPB
S5, S3 + LDn day 1 + TPB
S4, S3 + LDN

FIG. 9B

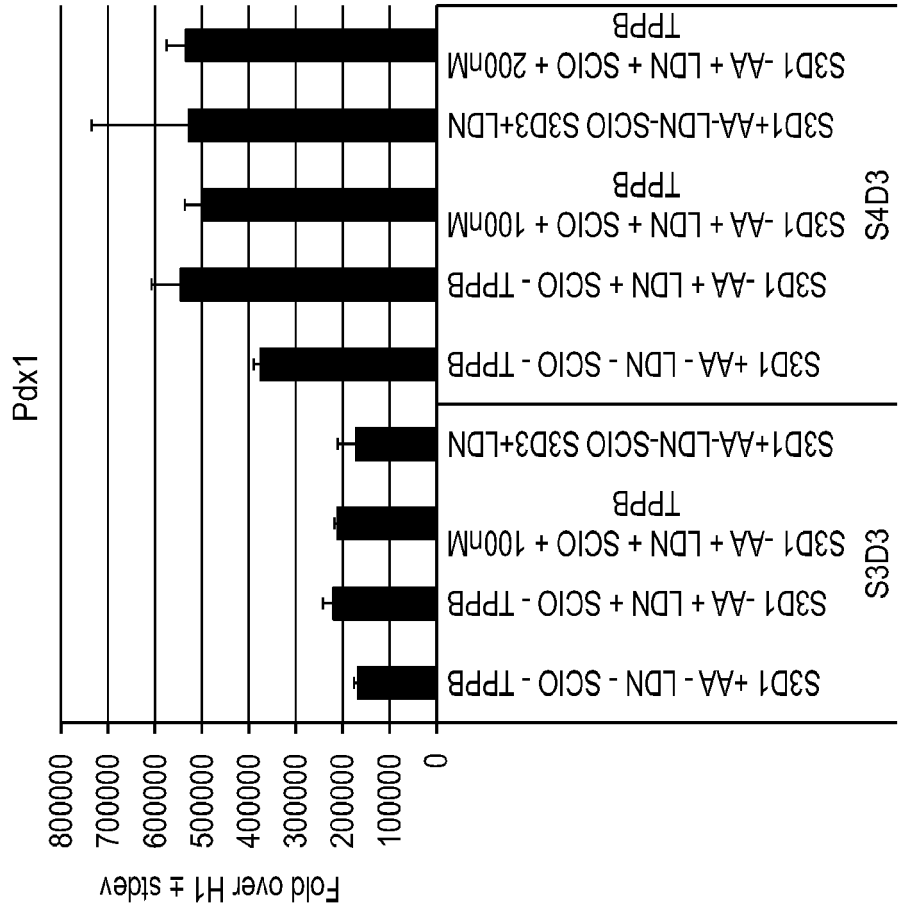

Pdx1
Fold over H1 ± stdev
800000
700000
600000
500000
400000
300000
200000
100000
0
S3D1 +AA - LDN - SCIO - TPPB
S3D1 -AA + LDN + SCIO - TPPB
S3D1 -AA + LDN + SCIO + 100nM TPPB
S3D1+AA-LDN-SCIO S3D3+LDN
S3D1 +AA - LDN - SCIO - TPPB
S3D1 -AA + LDN + SCIO - TPPB
S3D1 -AA + LDN + SCIO + 100nM TPPB
S3D1+AA-LDN-SCIO S3D3+LDN
S3D1 -AA + LDN + SCIO + 200nM TPPB
S3D3
S4D3

FIG. 9A

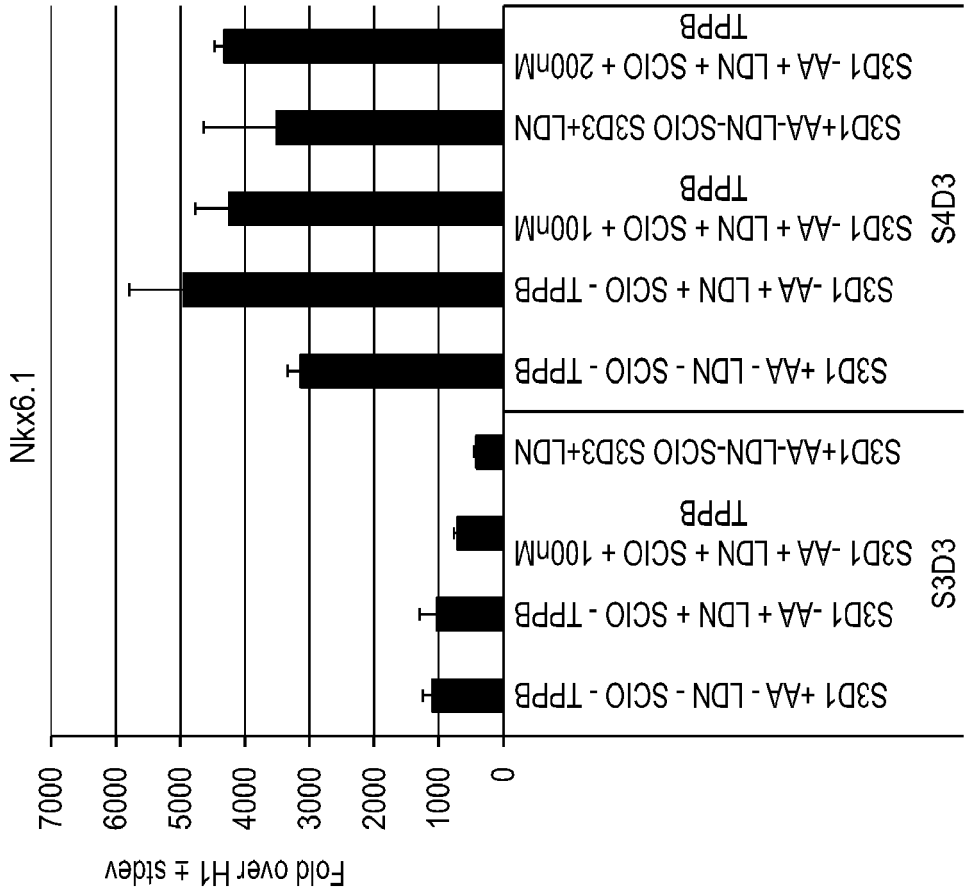

Nkx6.1
Fold over H1 ± stdev
7000
6000
5000
4000
3000
2000
1000
0
S3D1 +AA - LDN - SCIO - TPPB
S3D1 -AA + LDN + SCIO - TPPB
S3D1 -AA + LDN + SCIO + 100nM TPPB
S3D1+AA-LDN-SCIO S3D3+LDN
S3D1 +AA - LDN - SCIO - TPPB
S3D1 -AA + LDN + SCIO - TPPB
S3D1 -AA + LDN + SCIO + 100nM TPPB
S3D1+AA-LDN-SCIO S3D3+LDN
S3D1 -AA + LDN + SCIO + 200nM TPPB
S3D3
S4D3

FIG. 9D

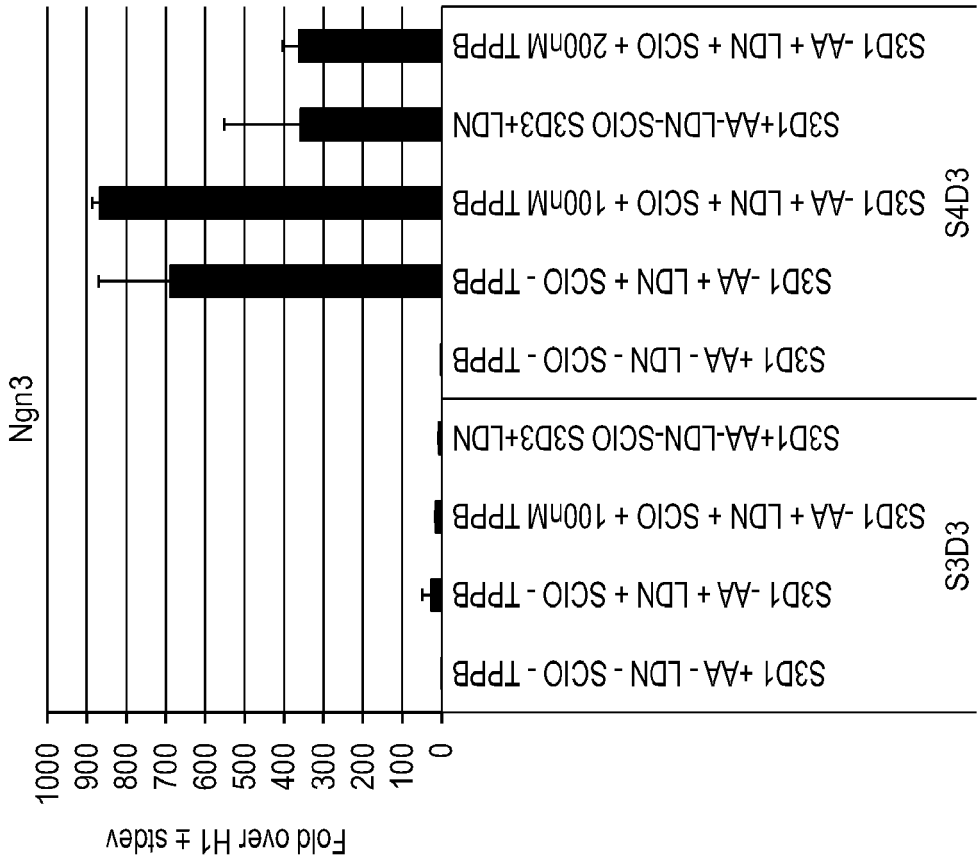

Ngn3
Fold over H1 ± stdev
0
100
200
300
400
500
600
700
800
900
1000
S3D1 +AA - LDN - SCIO - TPPB
S3D1 -AA + LDN + SCIO - TPPB
S3D1 -AA + LDN + SCIO + 100nM TPPB
S3D1+AA-LDN-SCIO S3D3+LDN
S3D1 -AA + LDN + SCIO + 200nM TPPB
S3D3
S4D3

FIG. 9C

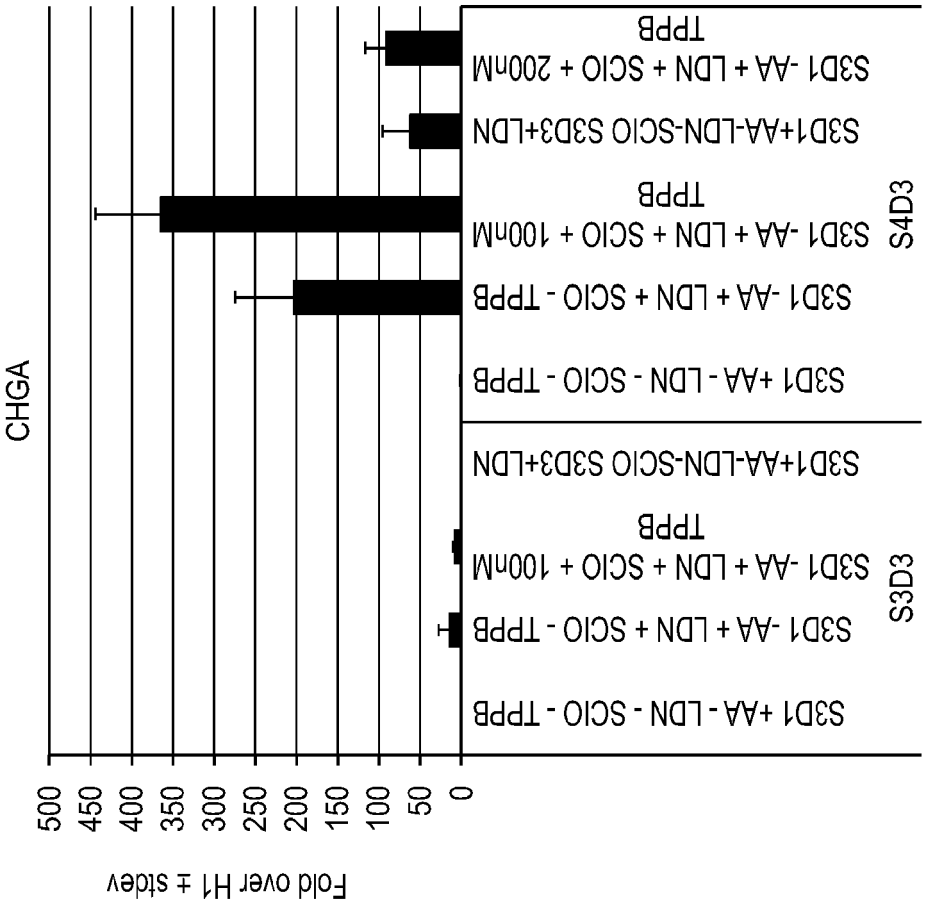

CHGA
Fold over H1 ± stdev
0
50
100
150
200
250
300
350
400
450
500
S3D1 +AA - LDN - SCIO - TPPB
S3D1 -AA + LDN + SCIO - TPPB
S3D1 -AA + LDN + SCIO + 100nM TPPB
S3D1+AA-LDN-SCIO S3D3+LDN
S3D1 -AA + LDN + SCIO + 200nM TPPB
S3D3
S4D3

FIG. 9E

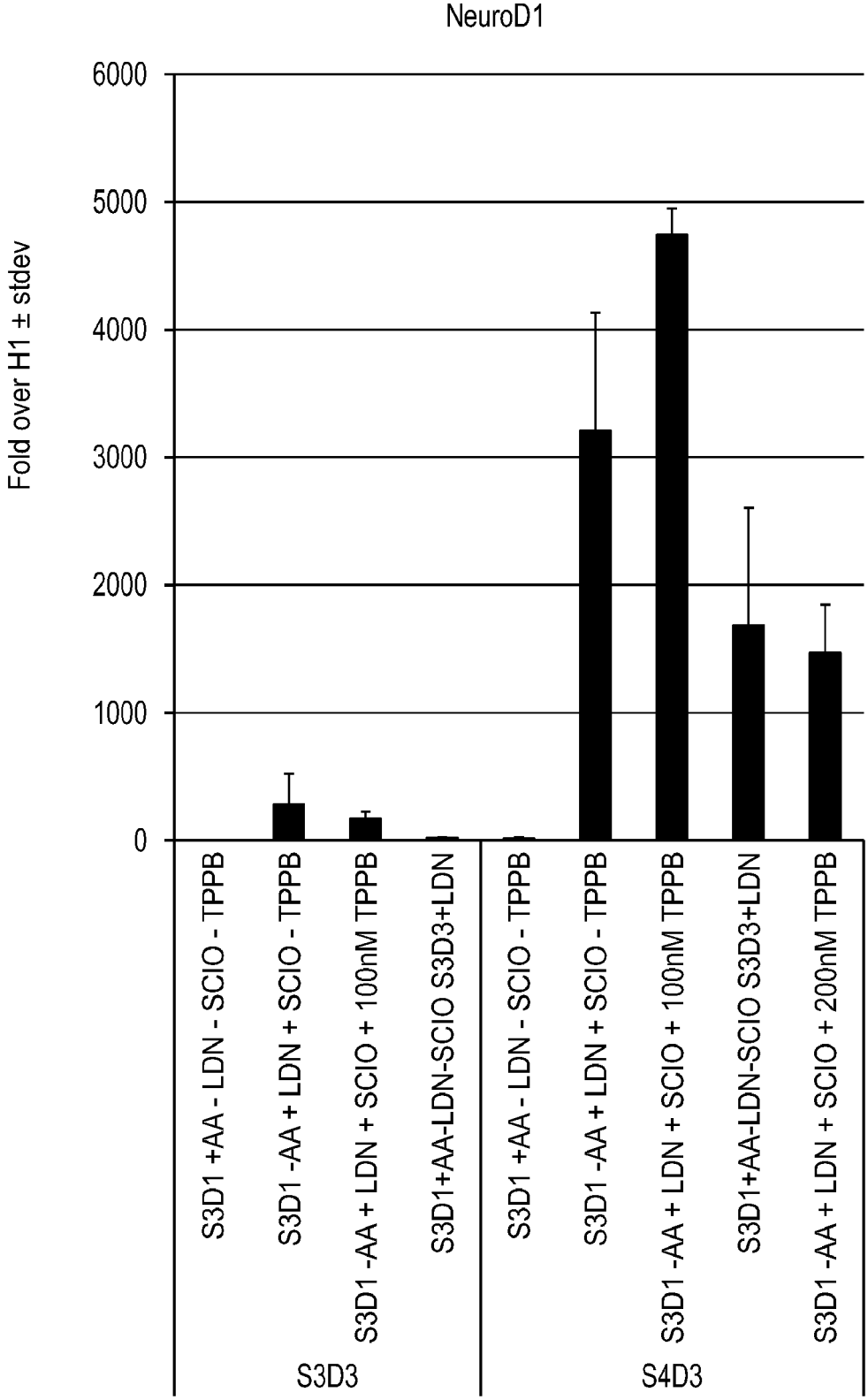

NeuroD1
Fold over H1 ± stdev
6000
5000
4000
3000
2000
1000
0
S3D1 +AA - LDN - SCIO - TPPB
S3D1 -AA + LDN + SCIO - TPPB
S3D1 -AA + LDN + SCIO + 100nM TPPB
S3D1+AA-LDN-SCIO S3D3+LDN
S3D1 +AA - LDN - SCIO - TPPB
S3D1 -AA + LDN + SCIO - TPPB
S3D1 -AA + LDN + SCIO + 100nM TPPB
S3D1+AA-LDN-SCIO S3D3+LDN
S3D1 -AA + LDN + SCIO + 200nM TPPB
S3D3
S4D3

FIG. 9G

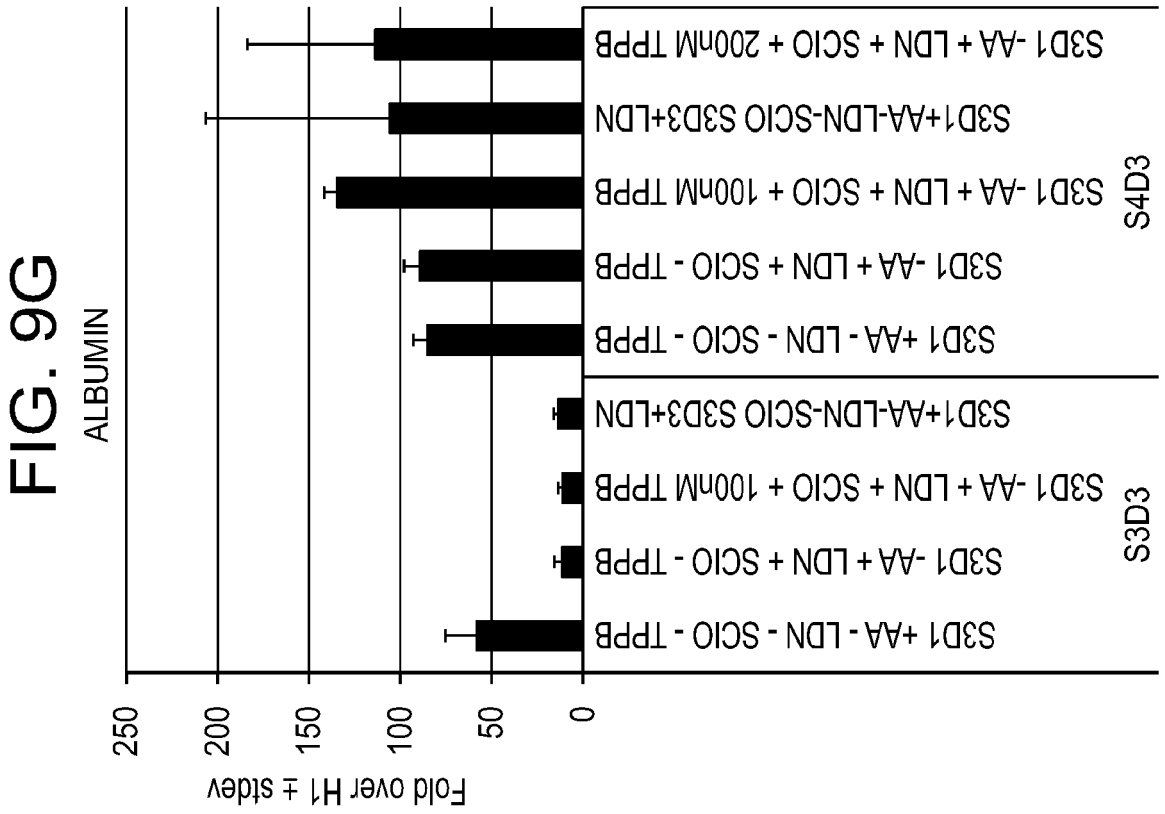

ALBUMIN
Fold over H1 ± stdev
250
200
150
100
50
0
S3D1 +AA - LDN - SCIO - TPPB
S3D1 -AA + LDN + SCIO - TPPB
S3D1 -AA + LDN + SCIO + 100nM TPPB
S3D1+AA-LDN-SCIO S3D3+LDN
S3D1 -AA + LDN + SCIO + 200nM TPPB
S3D3
S4D3

FIG. 9F

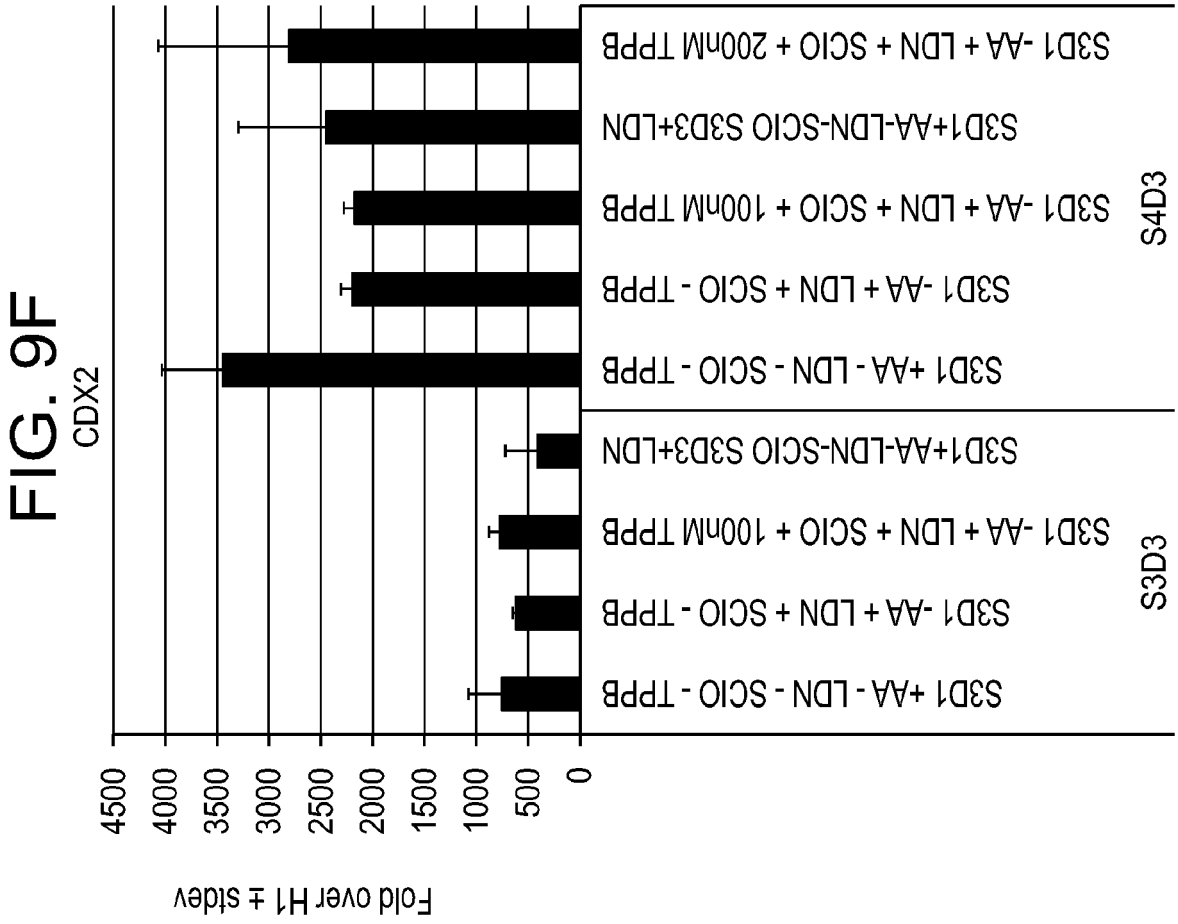

CDX2
Fold over H1 ± stdev
4500
4000
3500
3000
2500
2000
1500
1000
500
0
S3D1 +AA - LDN - SCIO - TPPB
S3D1 -AA + LDN + SCIO - TPPB
S3D1 -AA + LDN + SCIO + 100nM TPPB
S3D1+AA-LDN-SCIO S3D3+LDN
S3D1 -AA + LDN + SCIO + 200nM TPPB
S3D3
S4D3

FIG. 9H

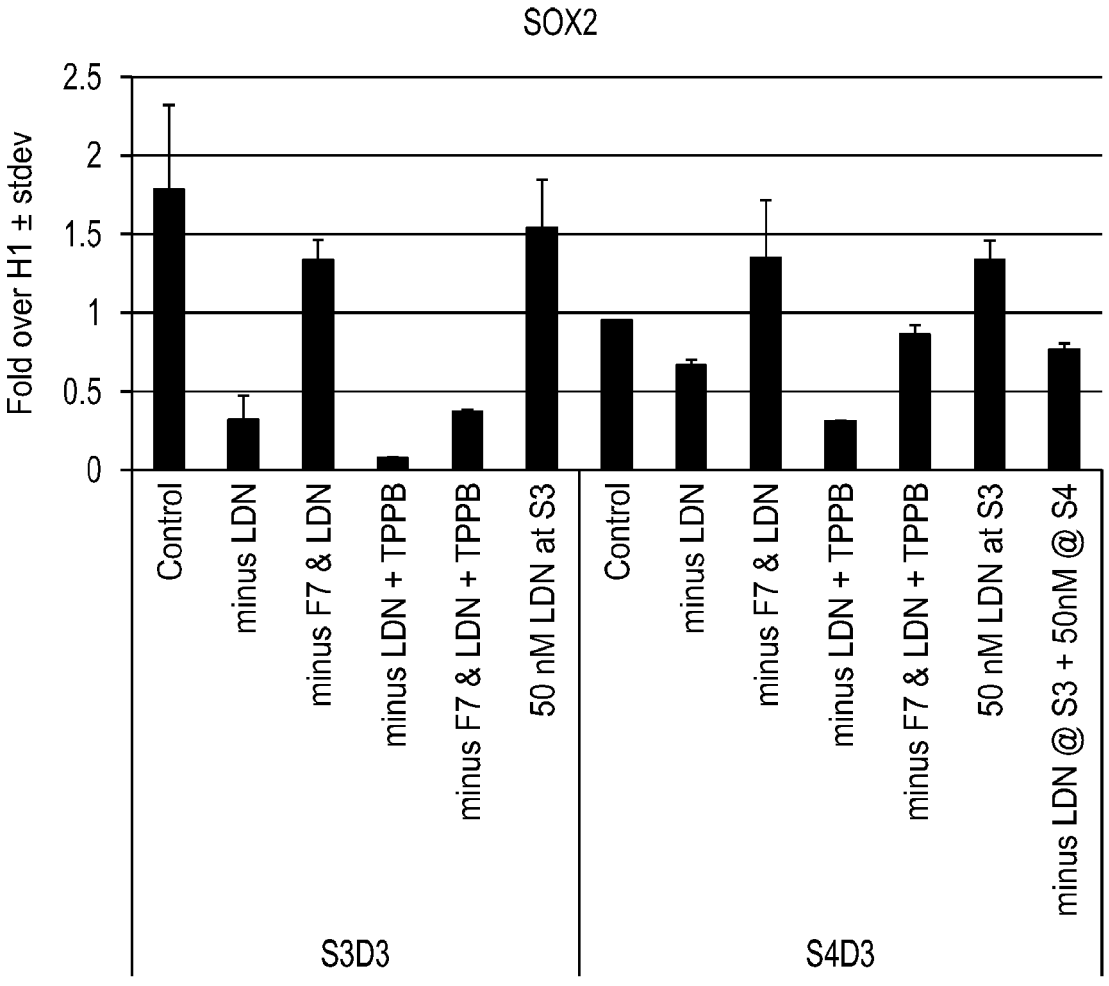

SOX2
Fold over H1 ± stdev
2.5
2
1.5
1
0.5
0
Control
minus LDN
minus F7 & LDN
minus LDN + TPPB
minus F7 & LDN + TPPB
50 nM LDN at S3
Control
minus LDN
minus F7 & LDN
minus LDN + TPPB
minus F7 & LDN + TPPB
50 nM LDN at S3
minus LDN @ S3 + 50nM @ S4
S3D3
S4D3

FIG. 10A

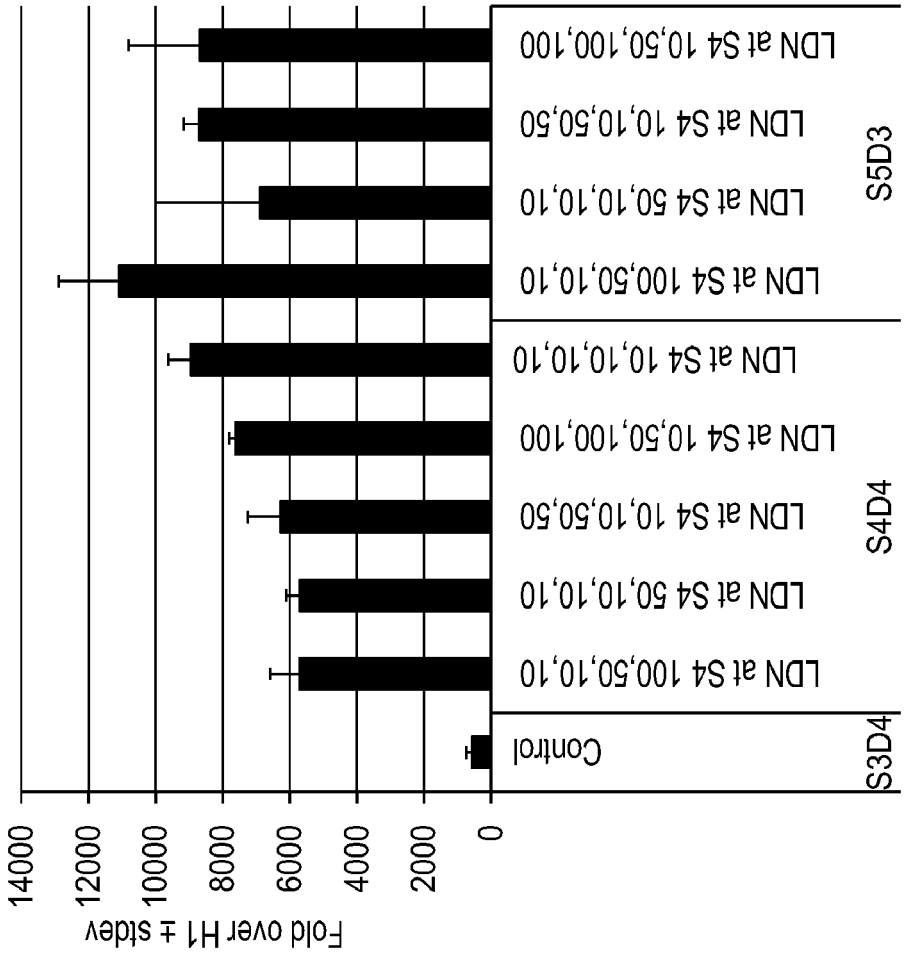


FIG. 10B

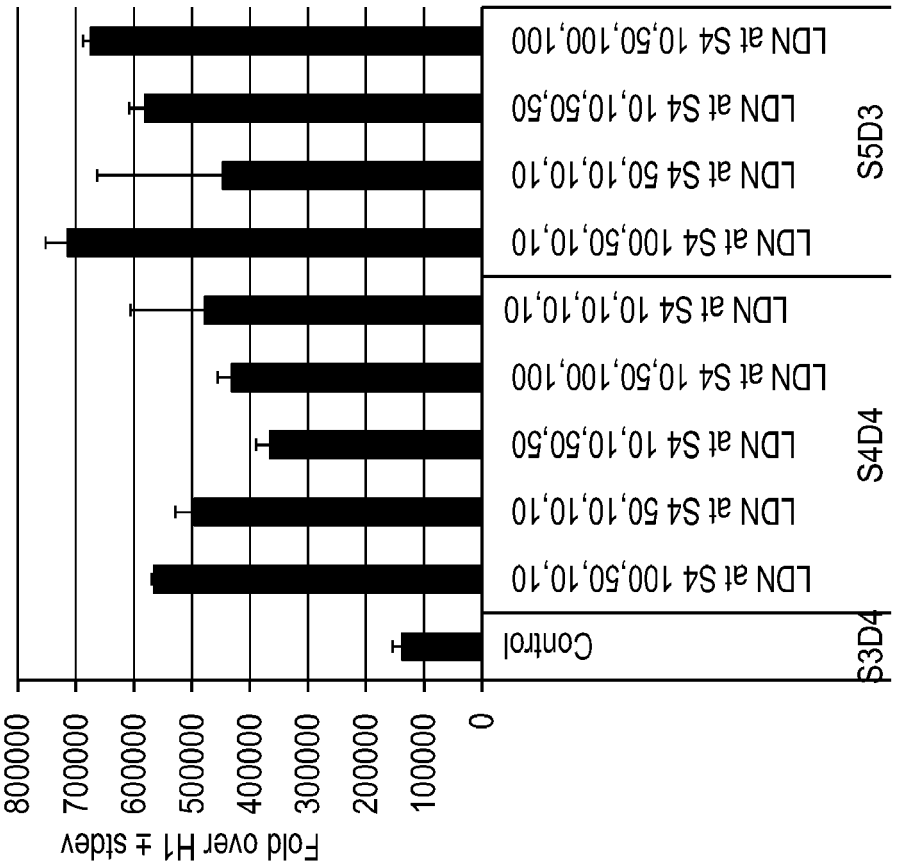


FIG. 10C

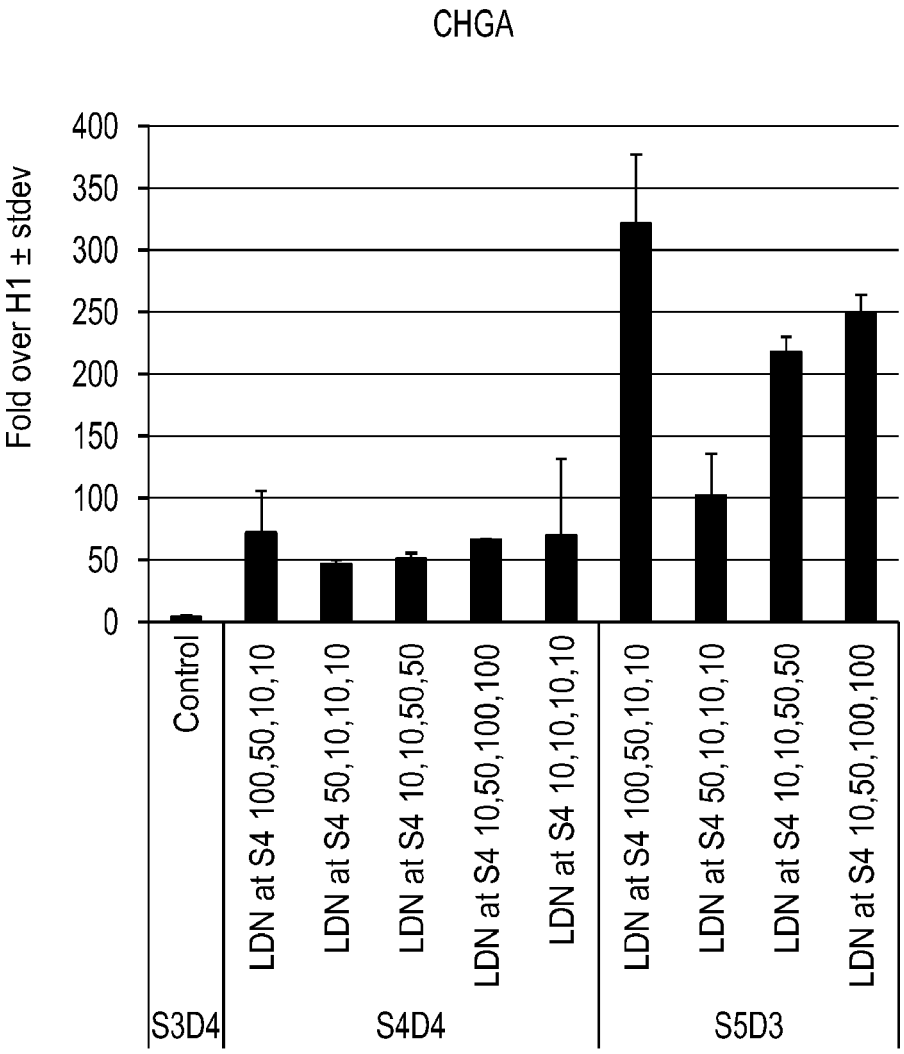

CHGA
Fold over H1 ± stdev
400
350
300
250
200
150
100
50
0
Control
LDN at S4 100,50,10,10
LDN at S4 50,10,10,10
LDN at S4 10,10,50,50
LDN at S4 10,50,100,100
LDN at S4 10,10,10,10
LDN at S4 100,50,10,10
LDN at S4 50,10,10,10
LDN at S4 10,10,50,50
LDN at S4 10,50,100,100
S3D4
S4D4
S5D3

FIG. 10D

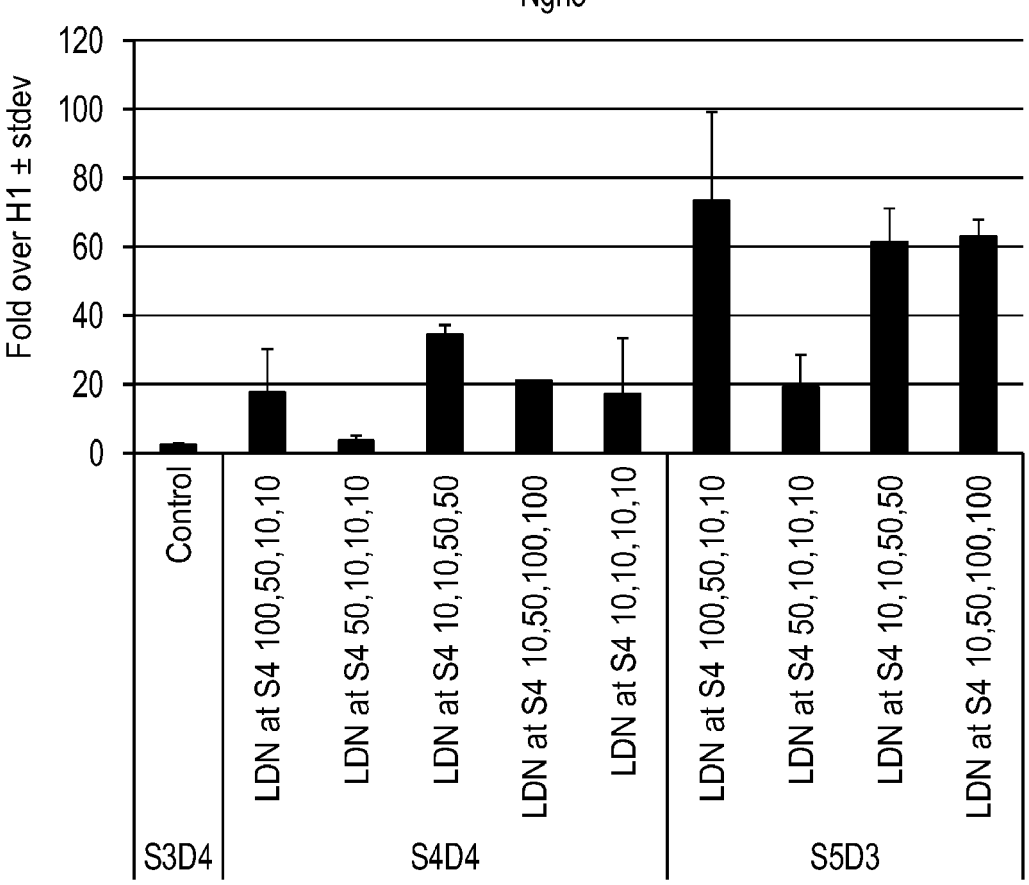


FIG. 10E

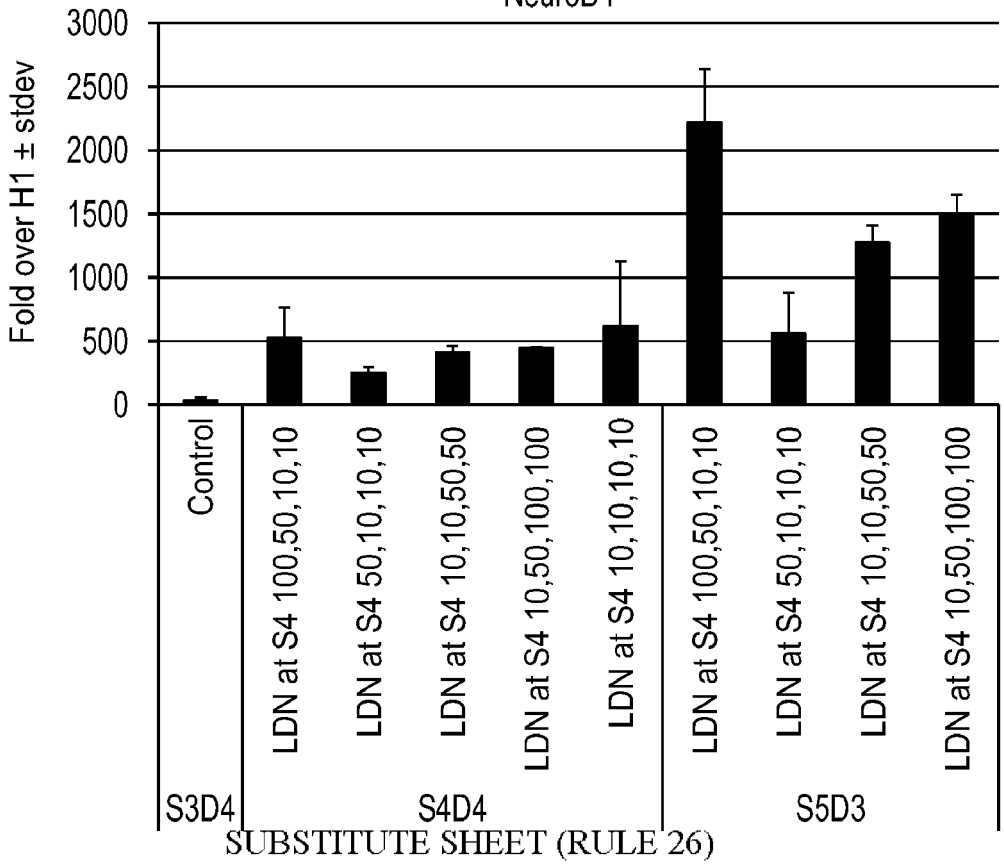


FIG. 10F

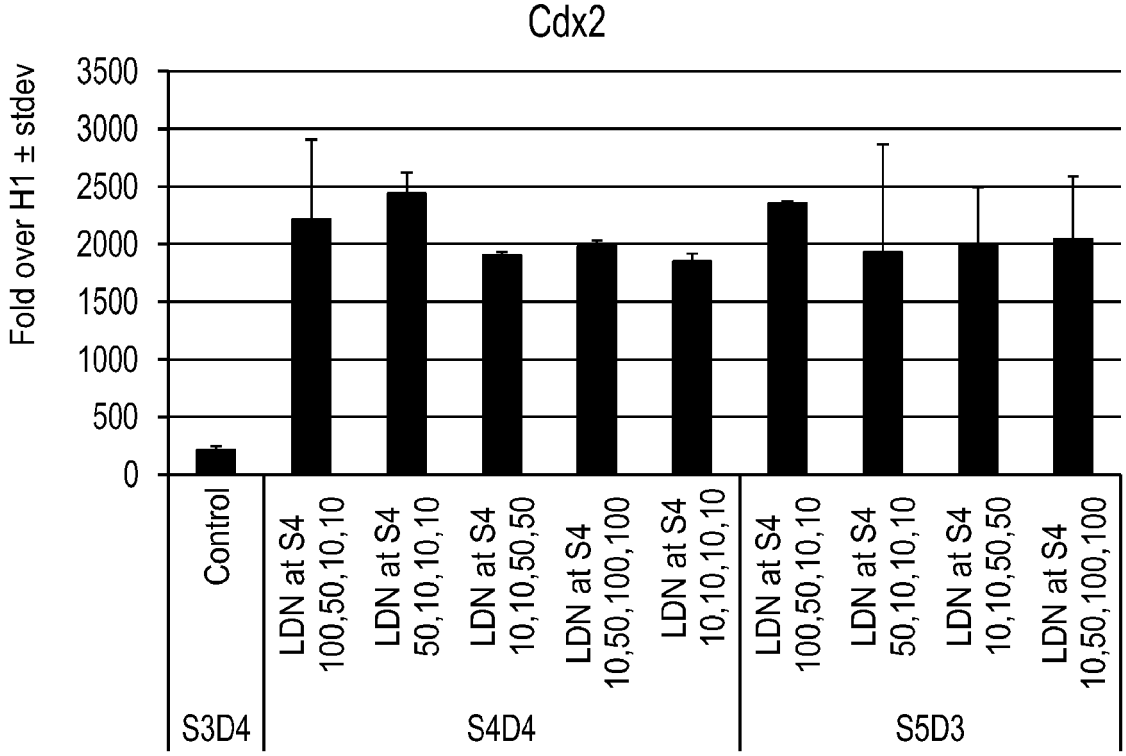


FIG. 10G

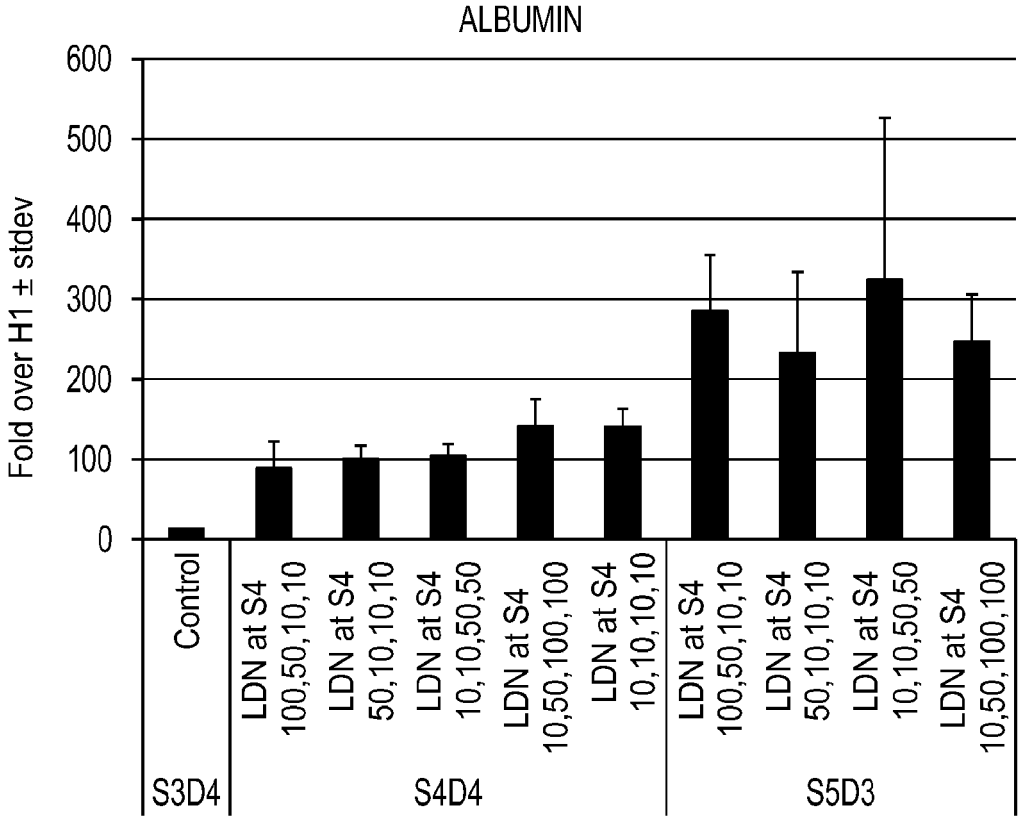


FIG. 10H

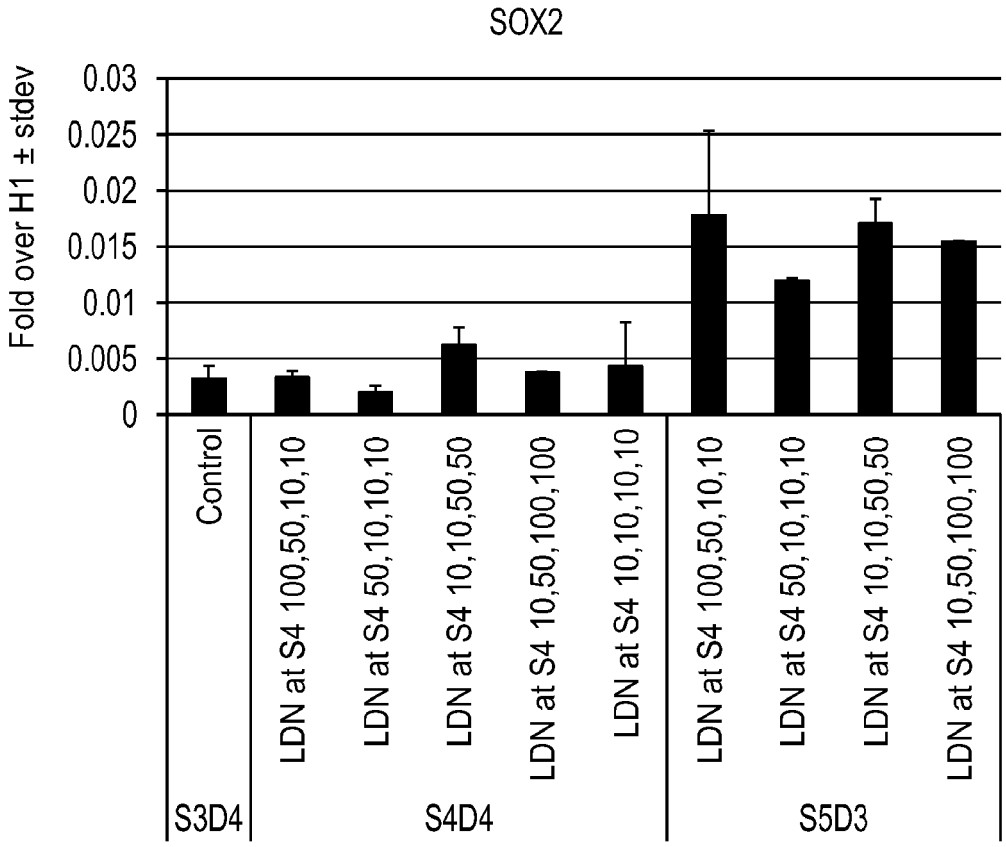

SOX2
Fold over H1 ± stdev
0.03
0.025
0.02
0.015
0.01
0.005
0
Control
LDN at S4 100,50,10,10
LDN at S4 50,10,10,10
LDN at S4 10,10,50,50
LDN at S4 10,50,100,100
LDN at S4 10,10,10,10
LDN at S4 100,50,10,10
LDN at S4 50,10,10,10
LDN at S4 10,10,50,50
LDN at S4 10,50,100,100
S3D4
S4D4
S5D3

FIG. 11A

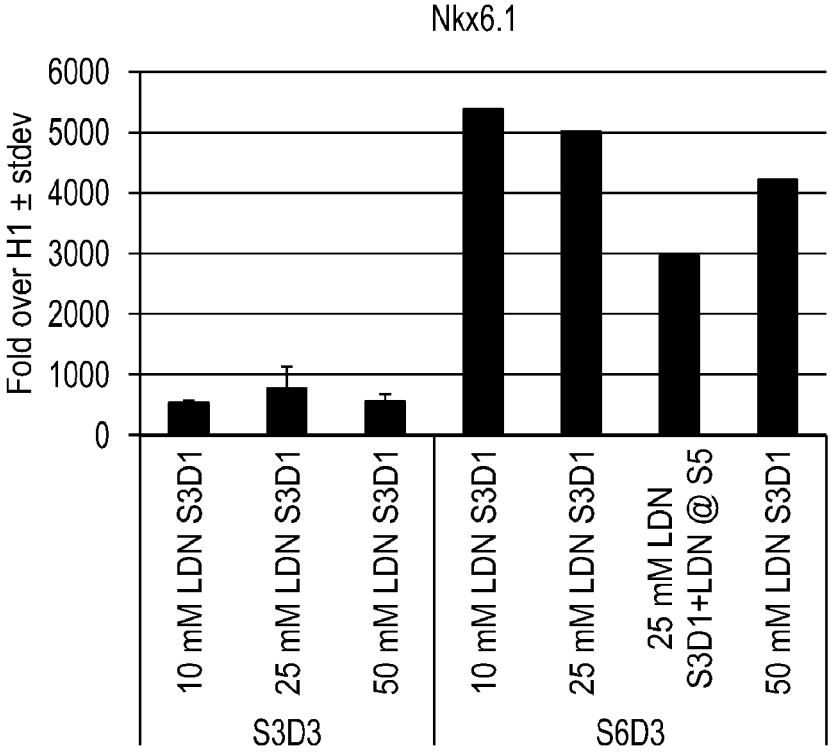


FIG. 11B

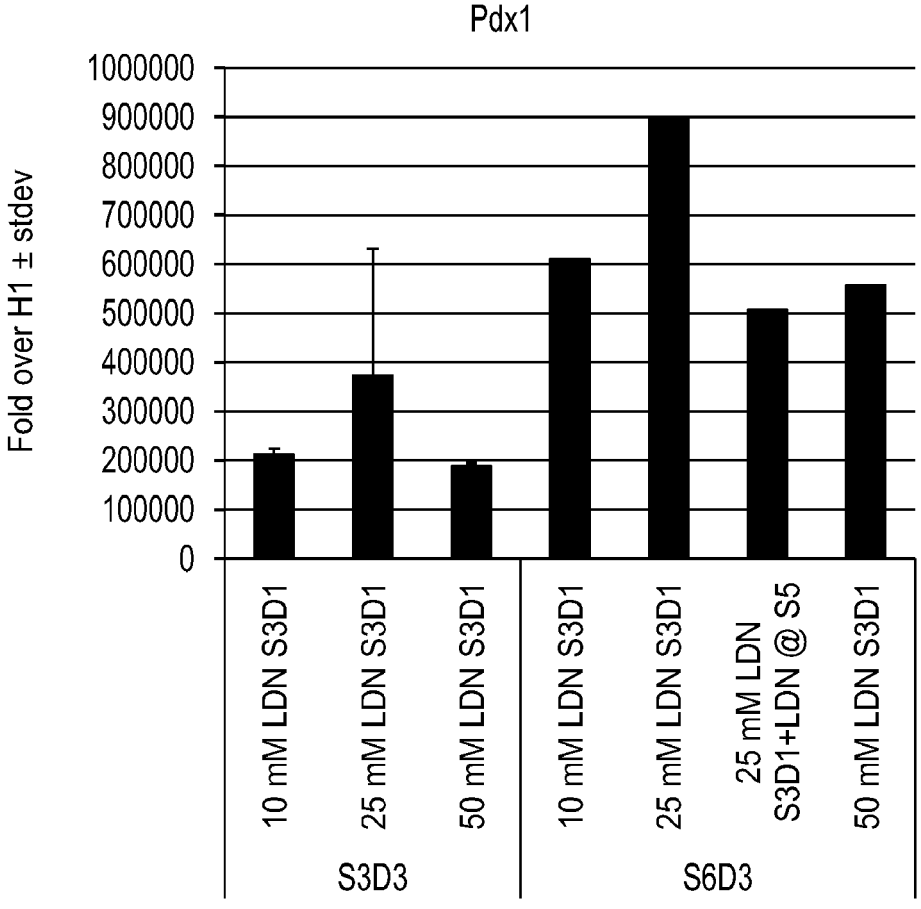


FIG. 11C

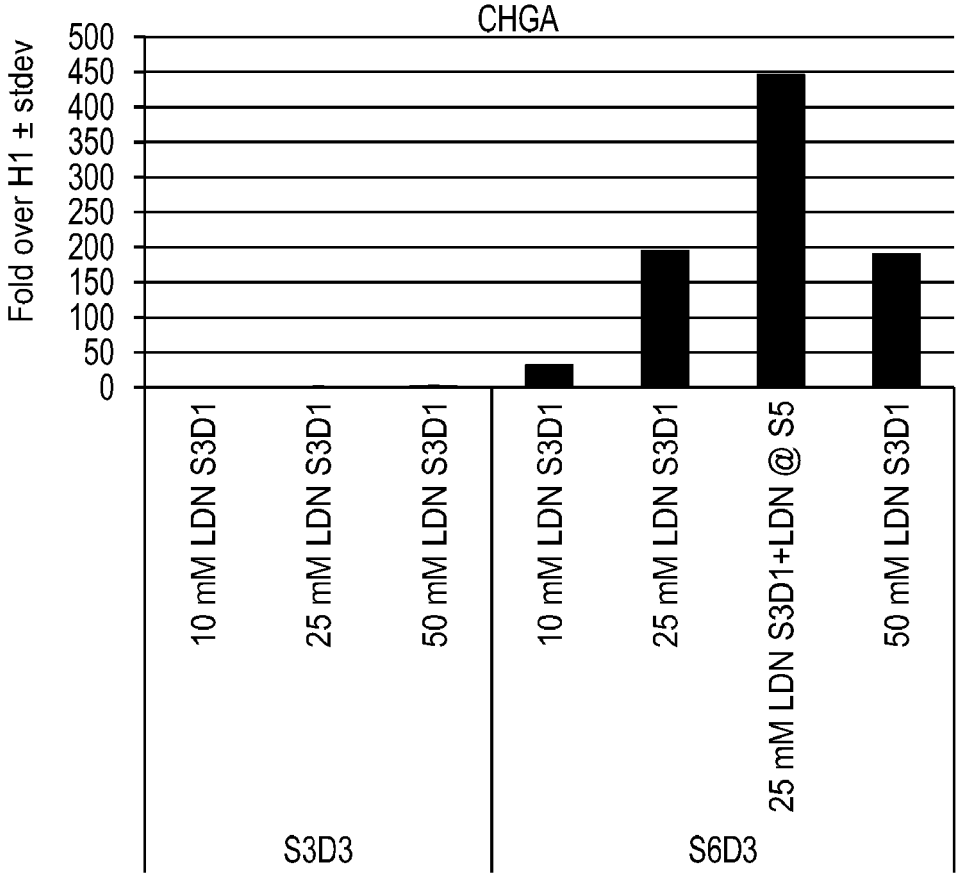


FIG. 11D

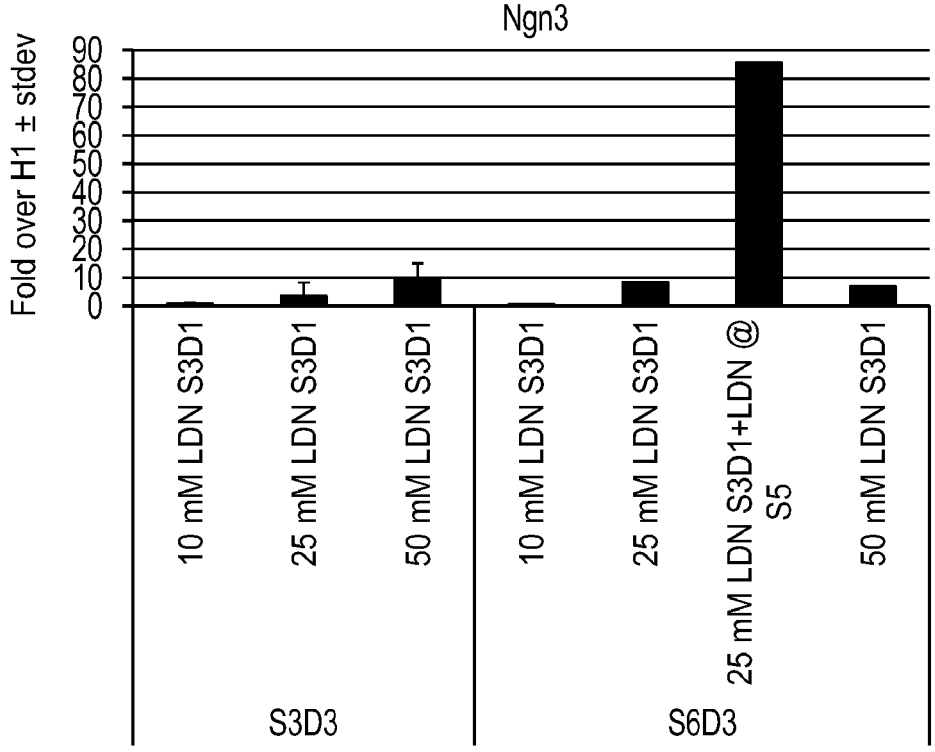


FIG. 11E

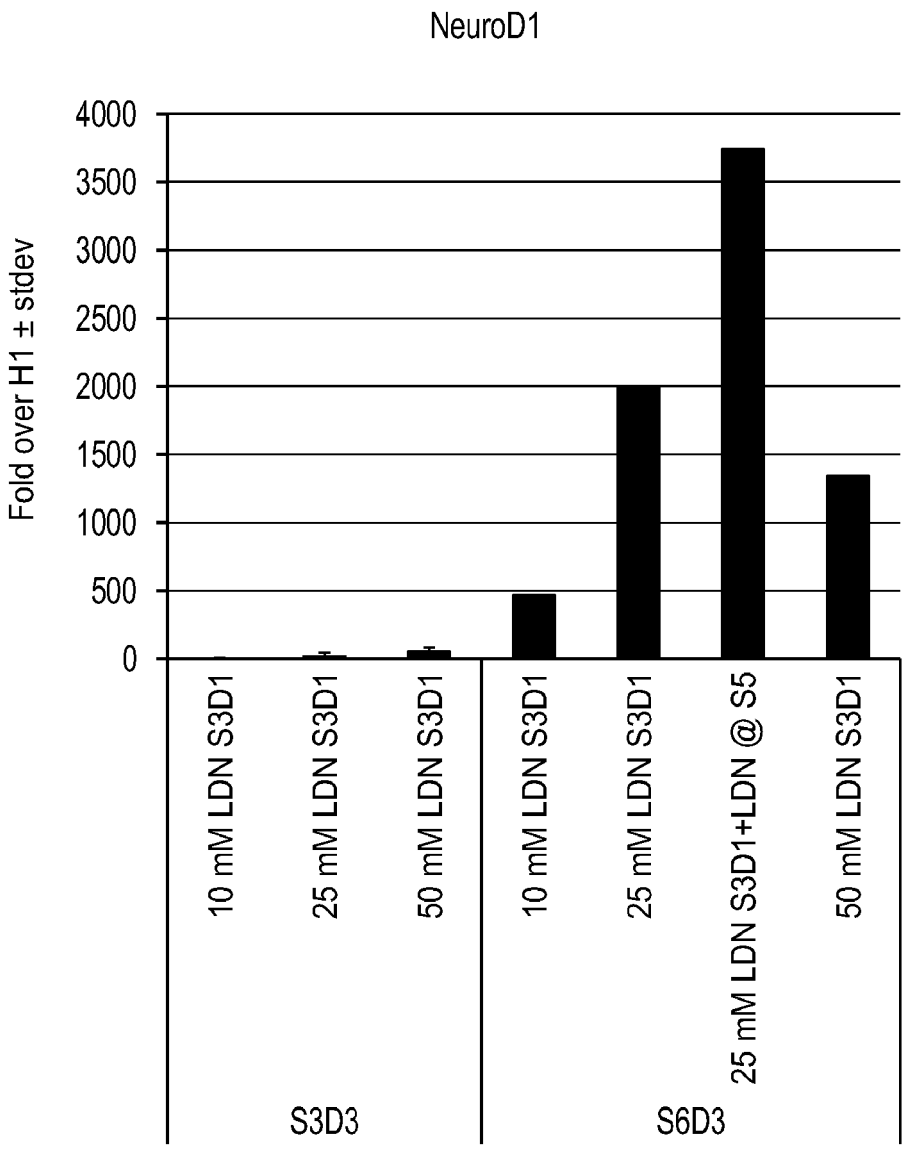

NeuroD1
Fold over H1 ± stdev
4000
3500
3000
2500
2000
1500
1000
500
0
10 mM LDN S3D1
25 mM LDN S3D1
50 mM LDN S3D1
10 mM LDN S3D1
25 mM LDN S3D1
25 mM LDN S3D1+LDN @ S5
50 mM LDN S3D1
S3D3
S6D3

FIG. 11F

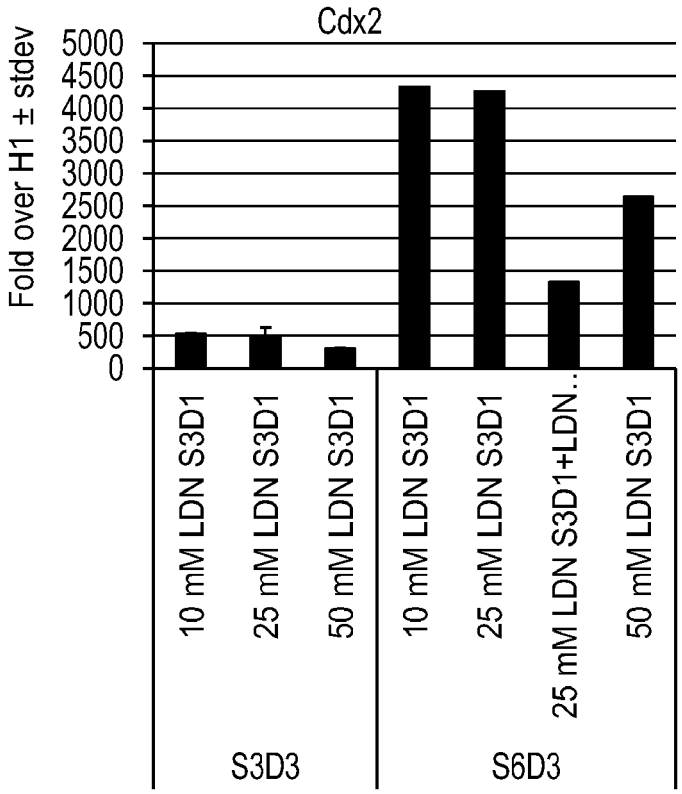


FIG. 11G

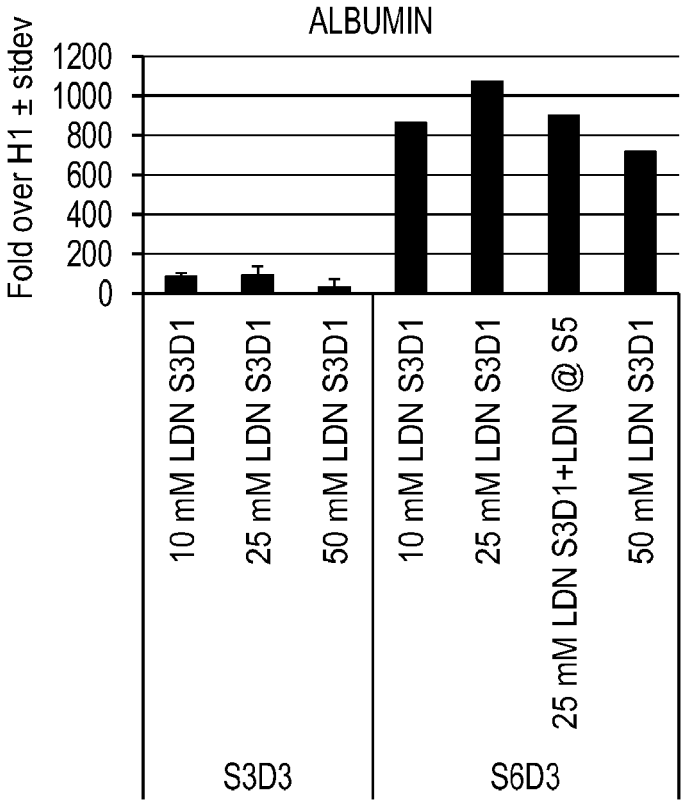


FIG. 11H

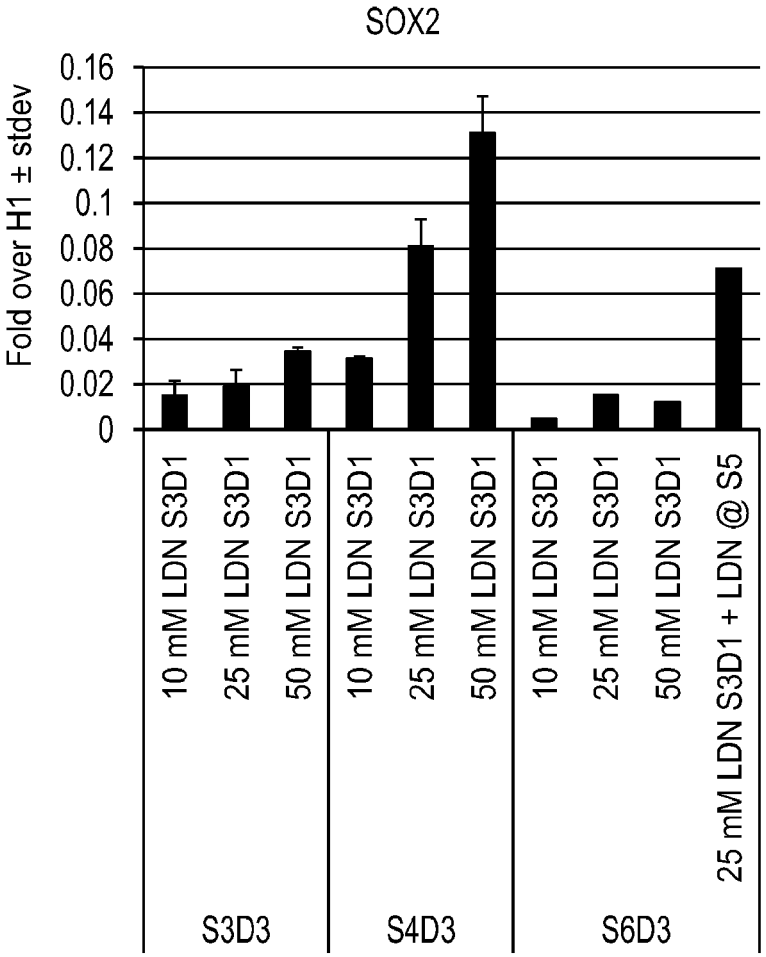

SOX2
Fold over H1 ± stdev
0.16
0.14
0.12
0.1
0.08
0.06
0.04
0.02
0
10 mM LDN S3D1
25 mM LDN S3D1
50 mM LDN S3D1
10 mM LDN S3D1
25 mM LDN S3D1
50 mM LDN S3D1
10 mM LDN S3D1
25 mM LDN S3D1
50 mM LDN S3D1
25 mM LDN S3D1 + LDN @ S5
S3D3
S4D3
S6D3

FIG. 12A

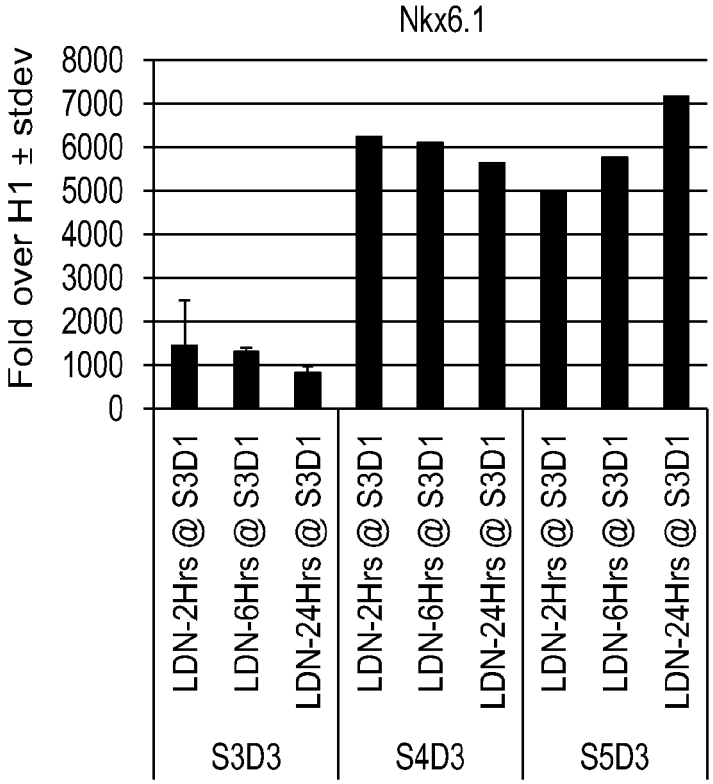


FIG. 12B

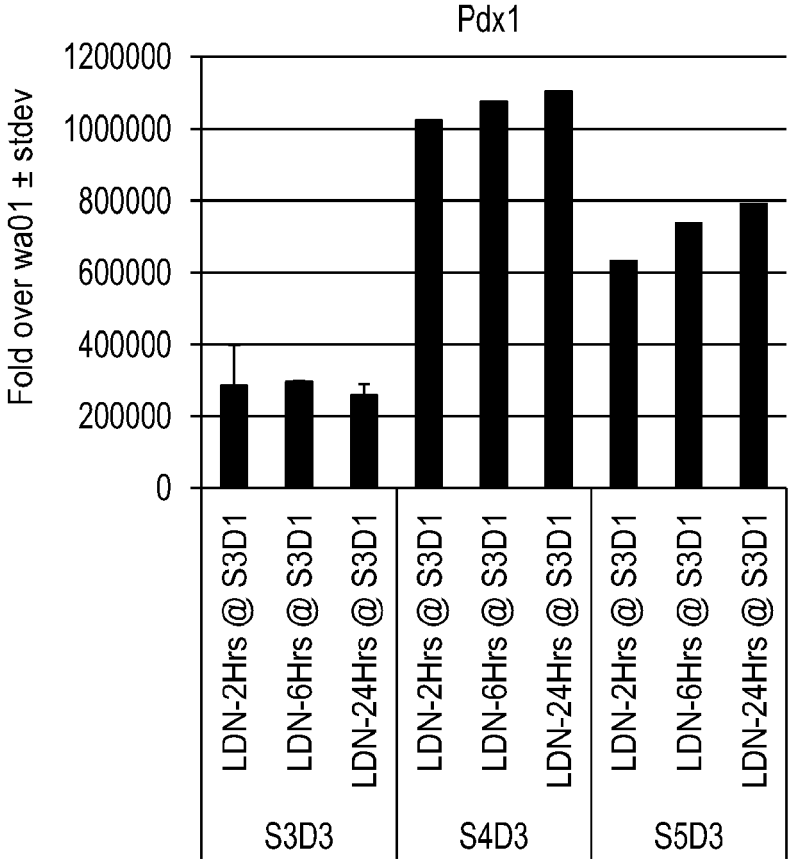


FIG. 12C

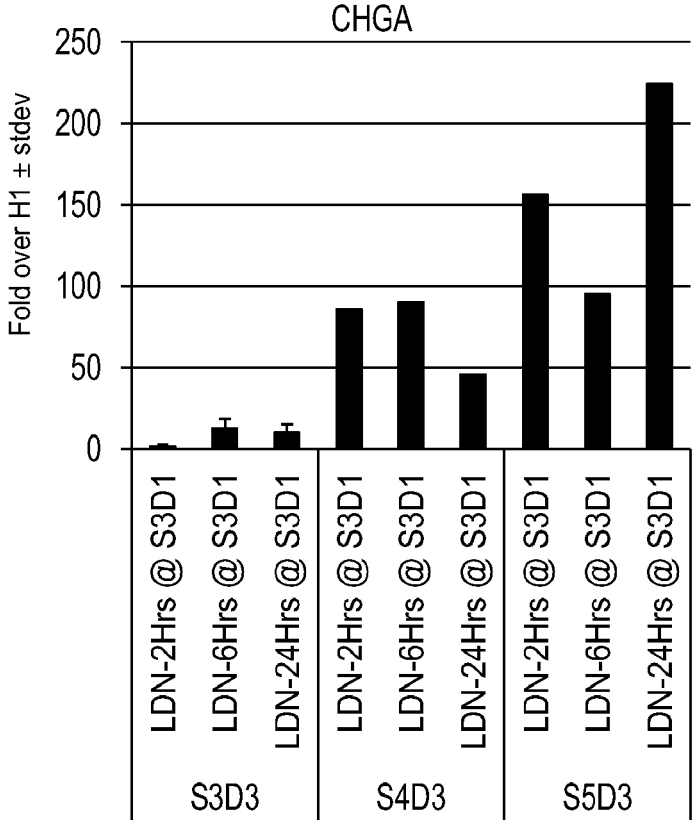


FIG. 12D

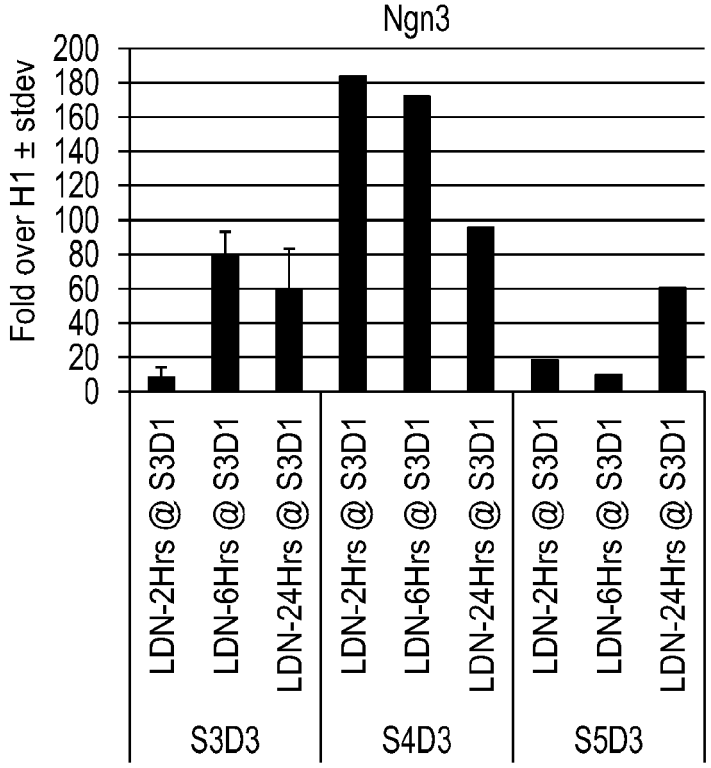


FIG. 12E

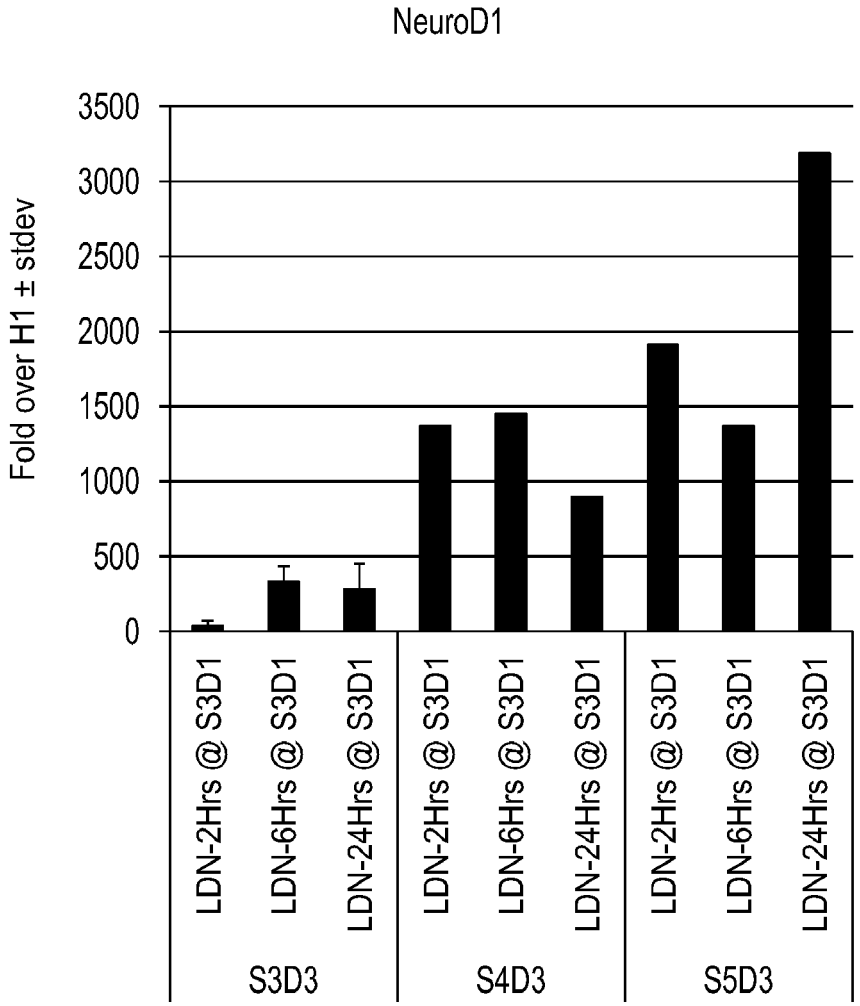

NeuroD1
Fold over H1 ± stdev
3500
3000
2500
2000
1500
1000
500
0
LDN-2Hrs @ S3D1
LDN-6Hrs @ S3D1
LDN-24Hrs @ S3D1
LDN-2Hrs @ S3D1
LDN-6Hrs @ S3D1
LDN-24Hrs @ S3D1
LDN-2Hrs @ S3D1
LDN-6Hrs @ S3D1
LDN-24Hrs @ S3D1
S3D3
S4D3
S5D3

FIG. 12F

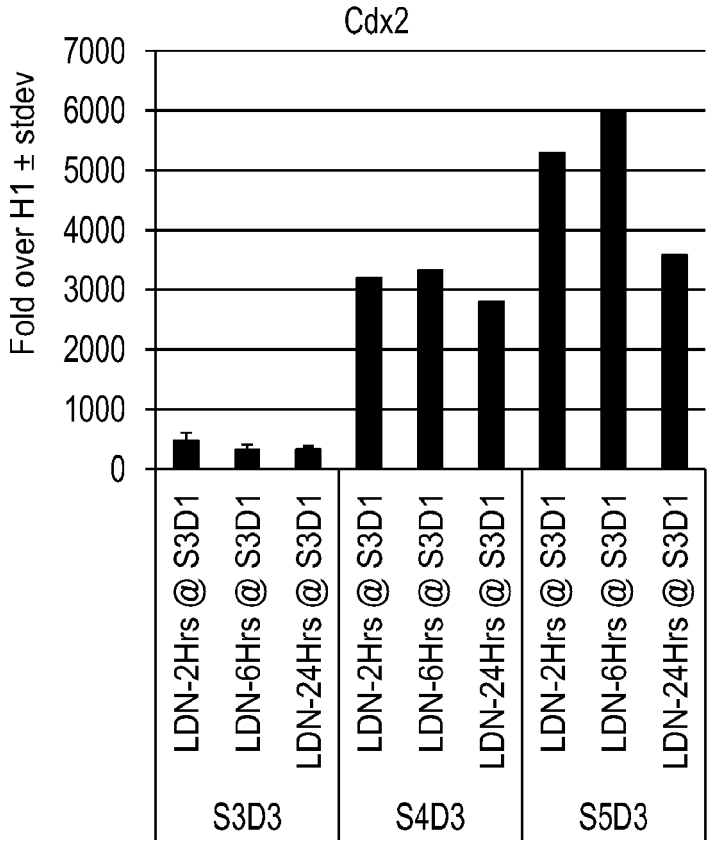


FIG. 12G

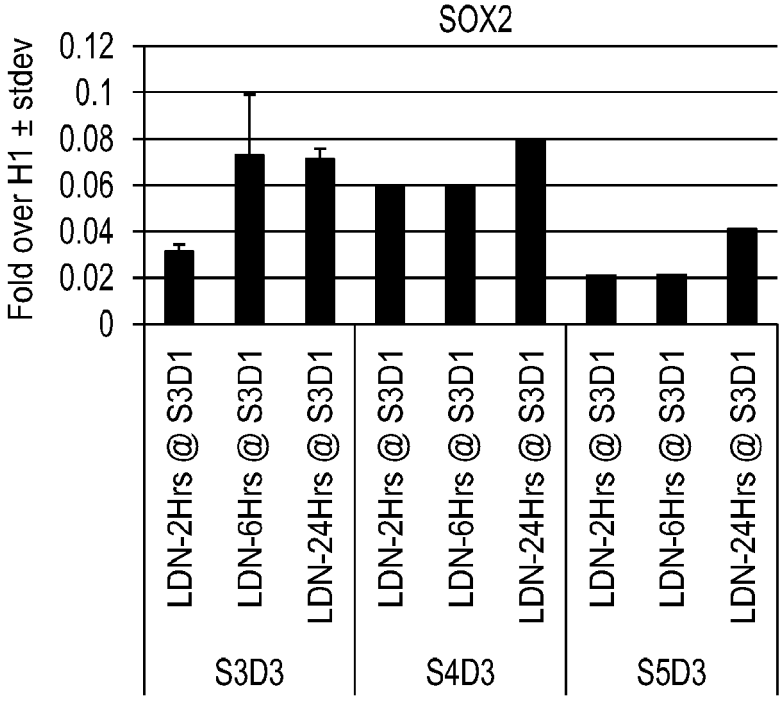


FIG. 13A

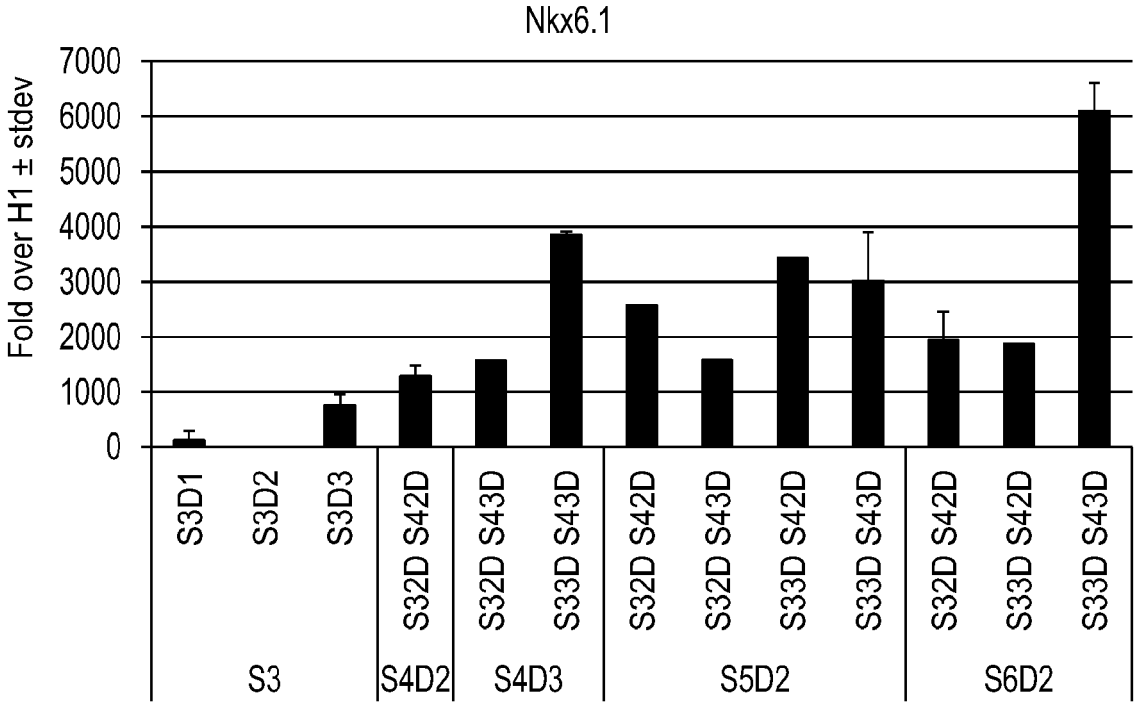


FIG. 13B

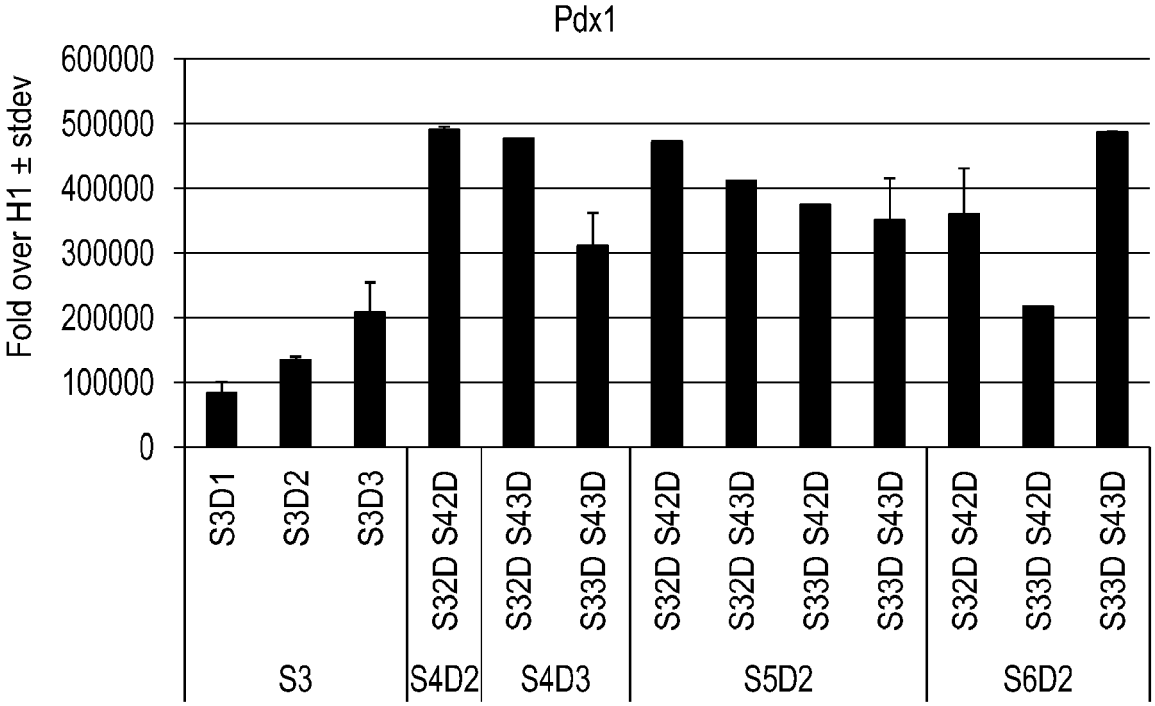


FIG. 13C

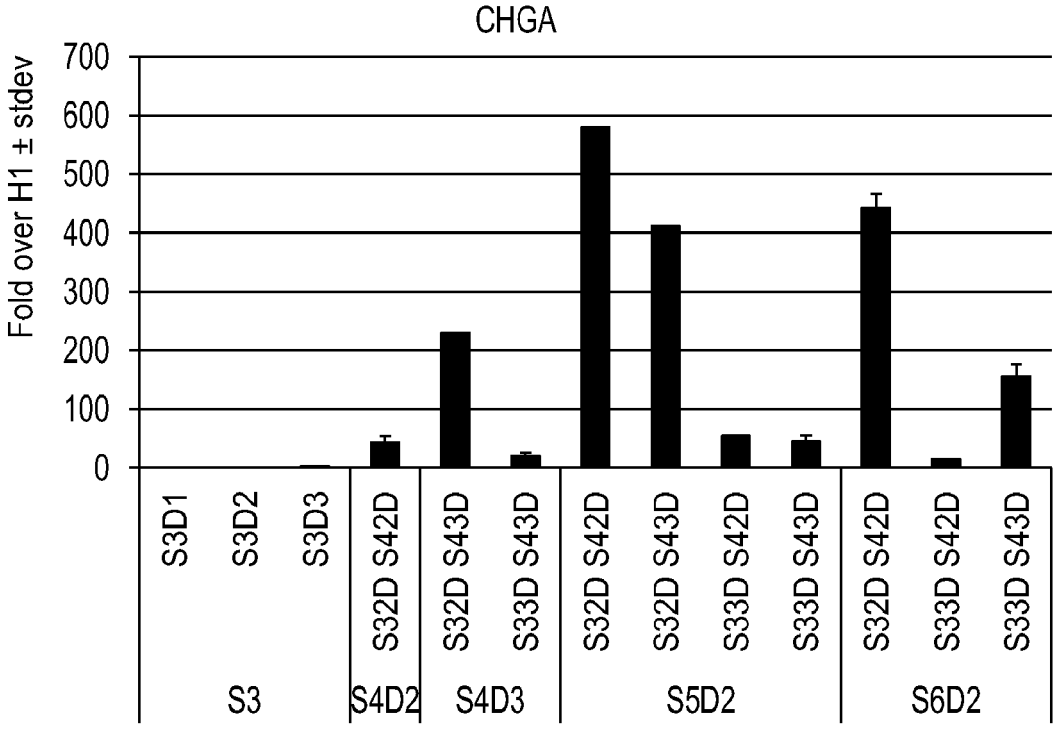


FIG. 13D

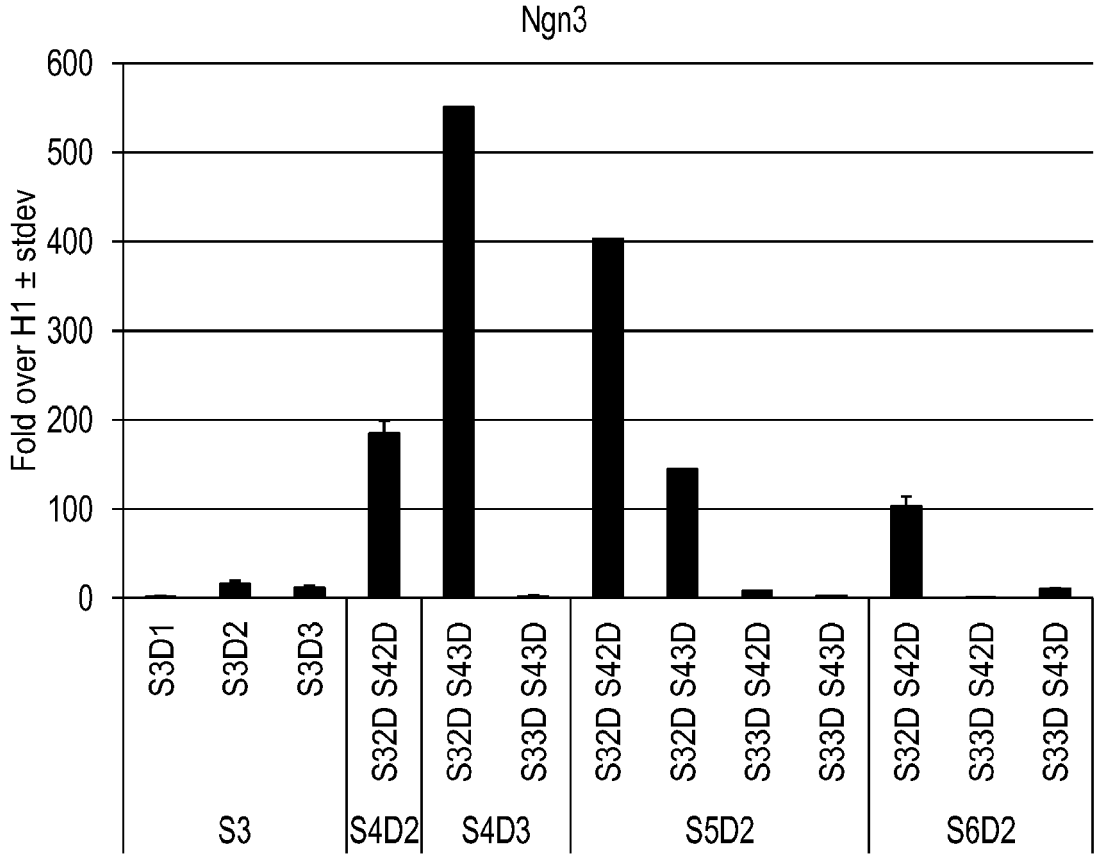


FIG. 13E

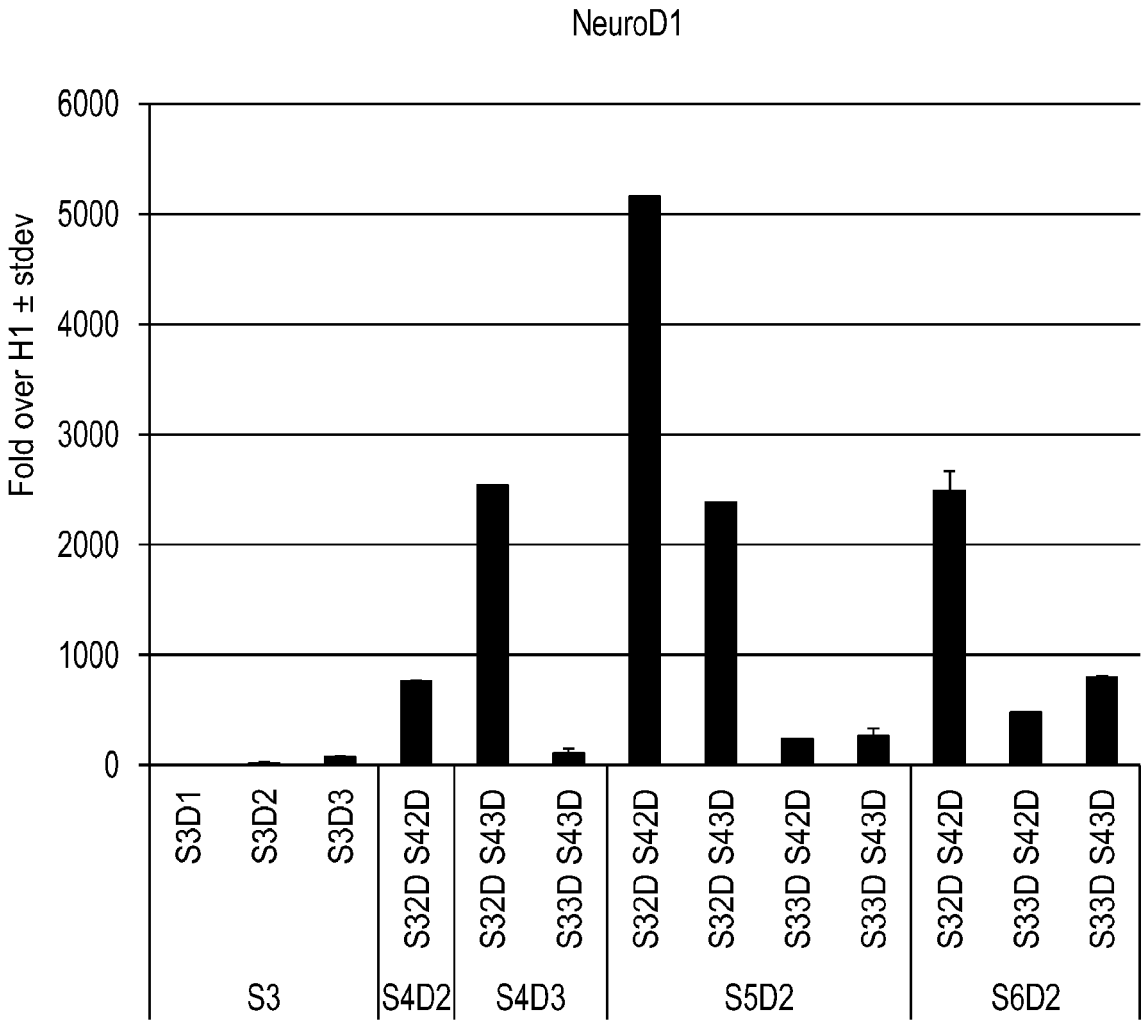

NeuroD1
Fold over H1 ± stdev
6000
5000
4000
3000
2000
1000
0
S3D1
S3D2
S3D3
S32D S42D
S32D S43D
S33D S43D
S32D S42D
S32D S43D
S33D S42D
S33D S43D
S32D S42D
S33D S42D
S33D S43D
S3
S4D2
S4D3
S5D2
S6D2

FIG. 13F

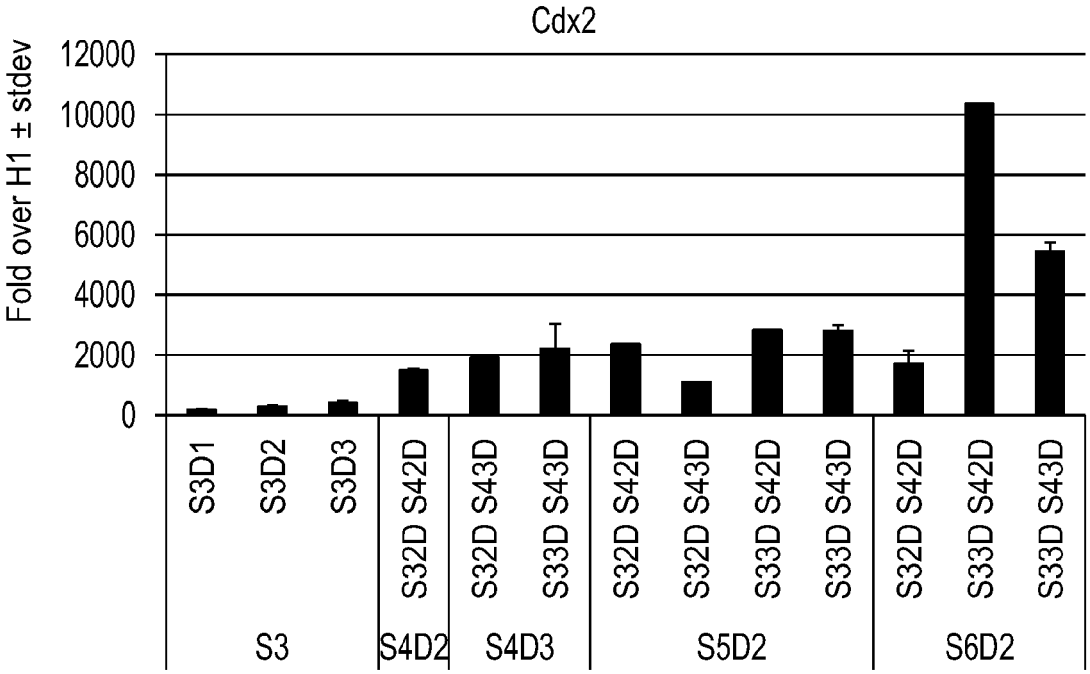


FIG. 13G

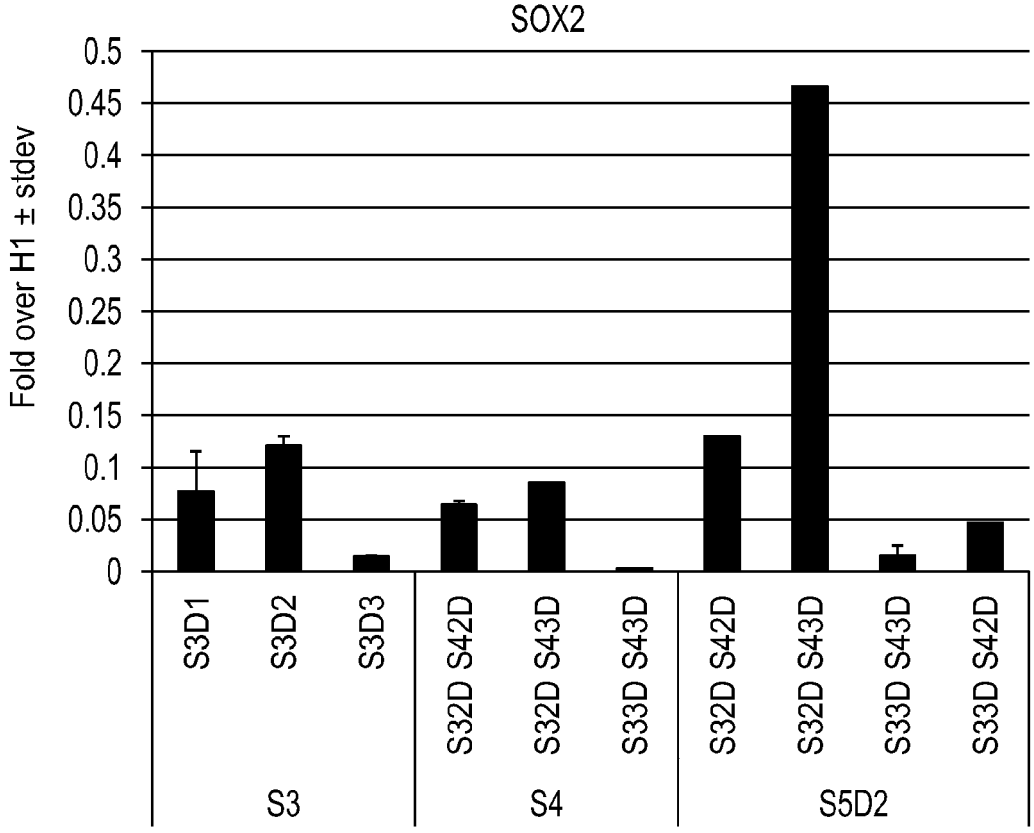


FIG. 14A

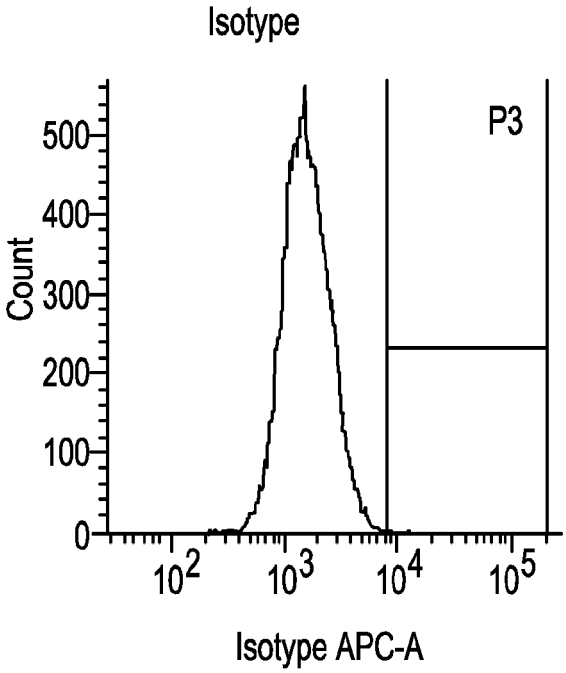


FIG. 14B

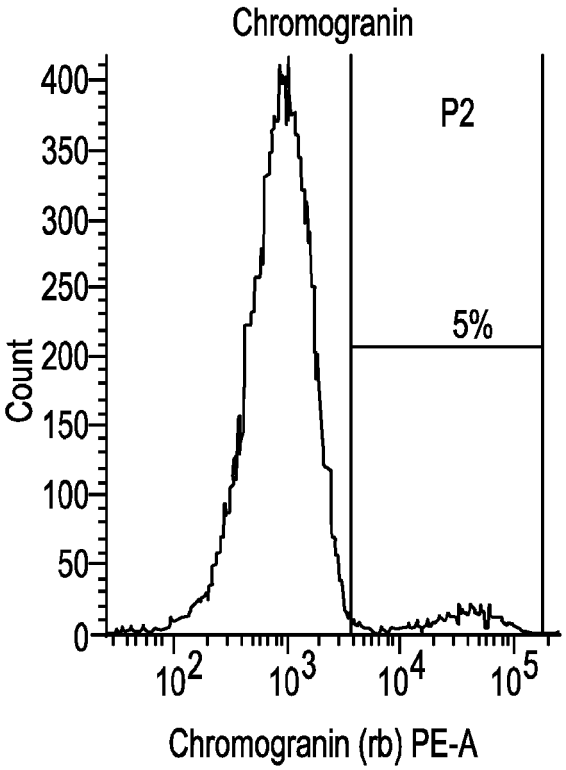


FIG. 14C

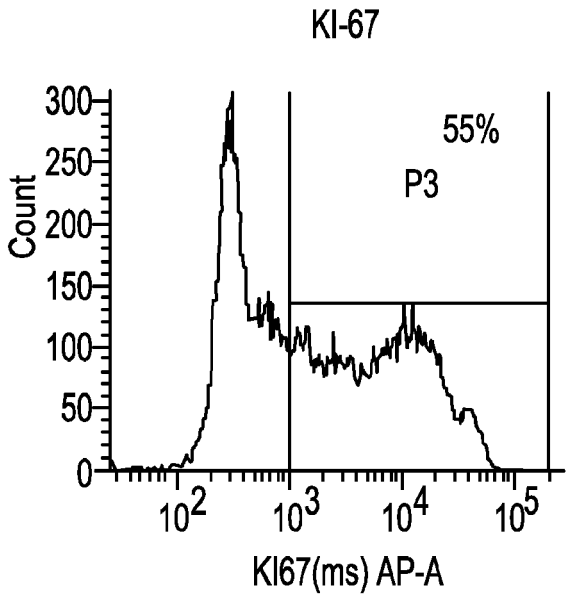


FIG. 14D

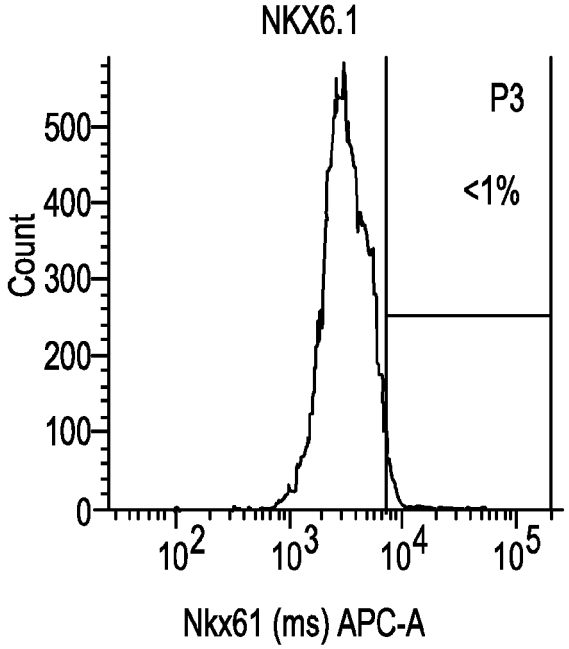


FIG. 14E

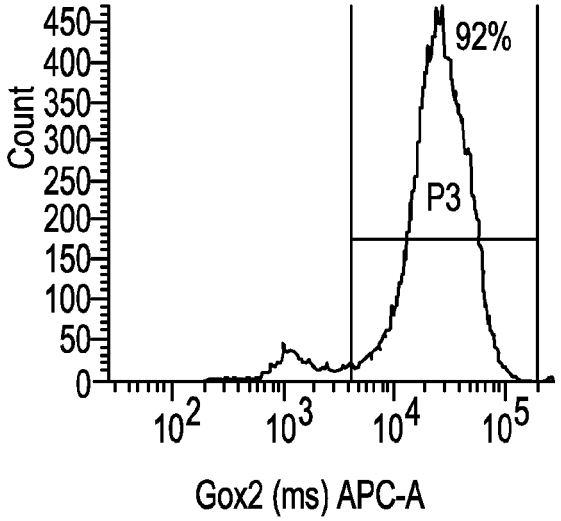


FIG. 14F

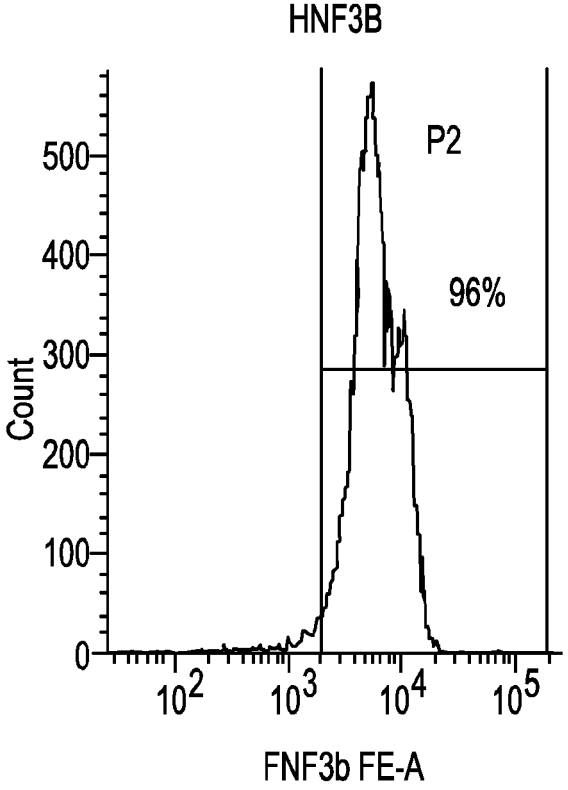


FIG. 14G

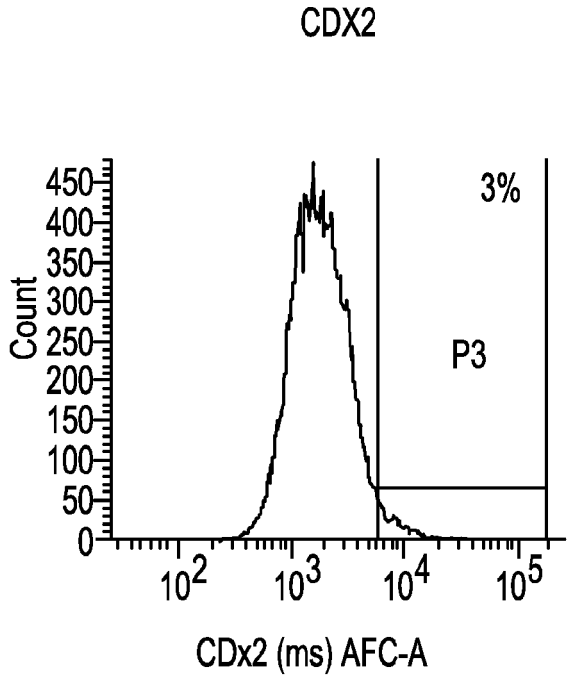


FIG. 14H

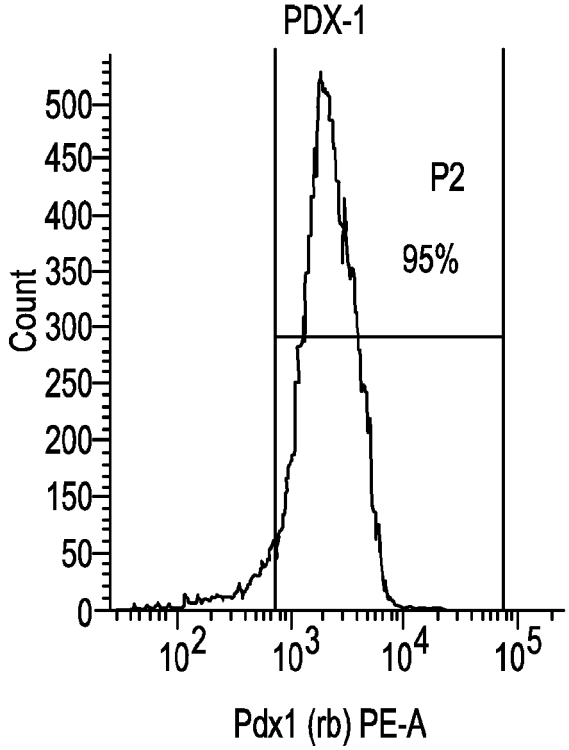


FIG. 15A

Isotype

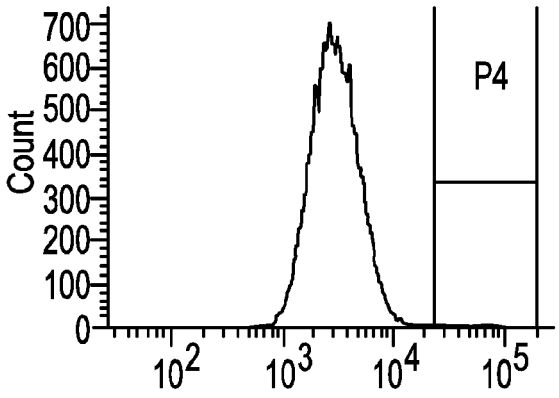


FIG. 15B

NKX6.1

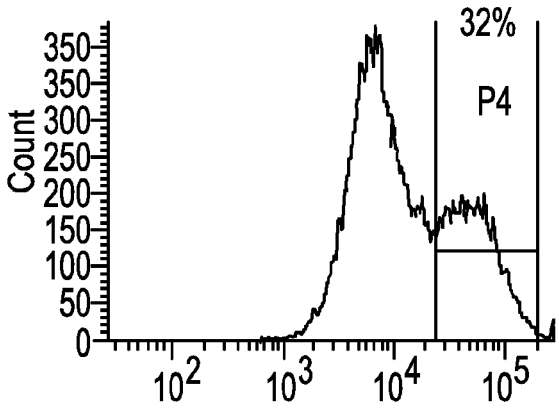


FIG. 15C

KI-67

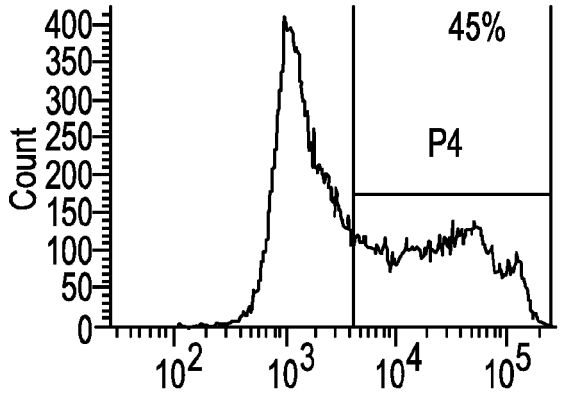


FIG. 15D

Chromogranin

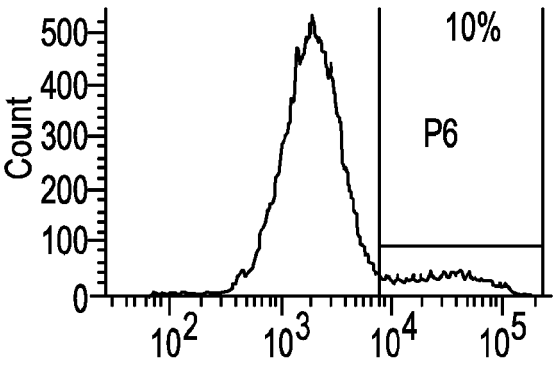


FIG. 15E

SOX2

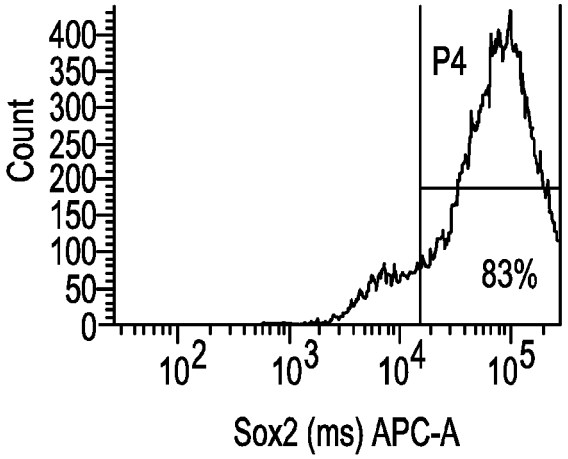


FIG. 15F

CDX2

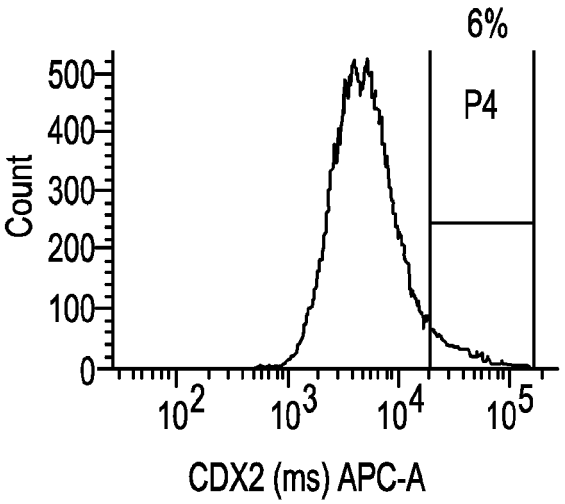


FIG. 15G

PDX-1

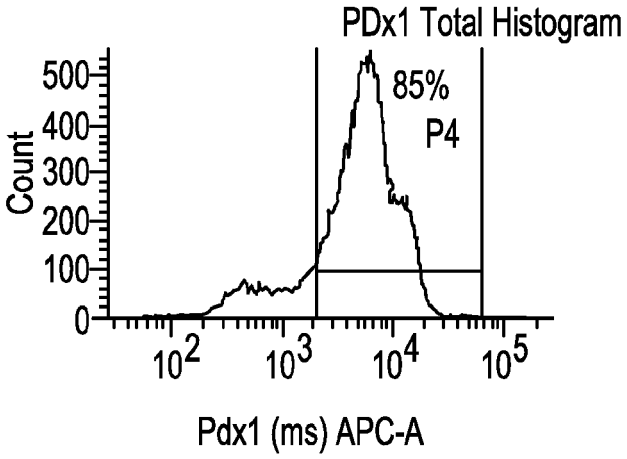


FIG. 16A

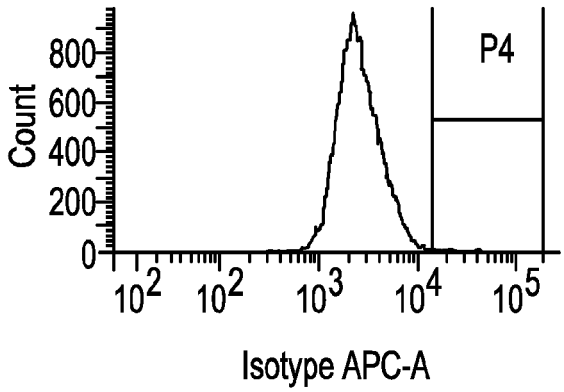


FIG. 16B

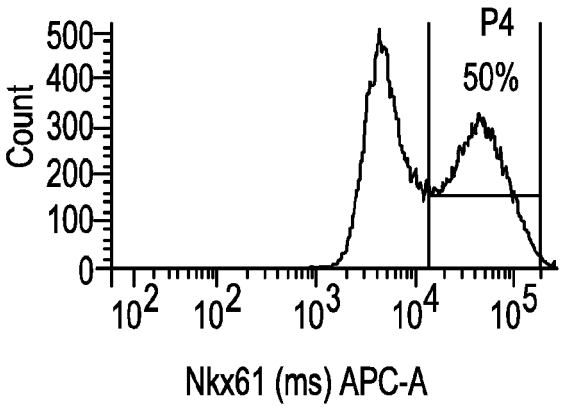


FIG. 16C

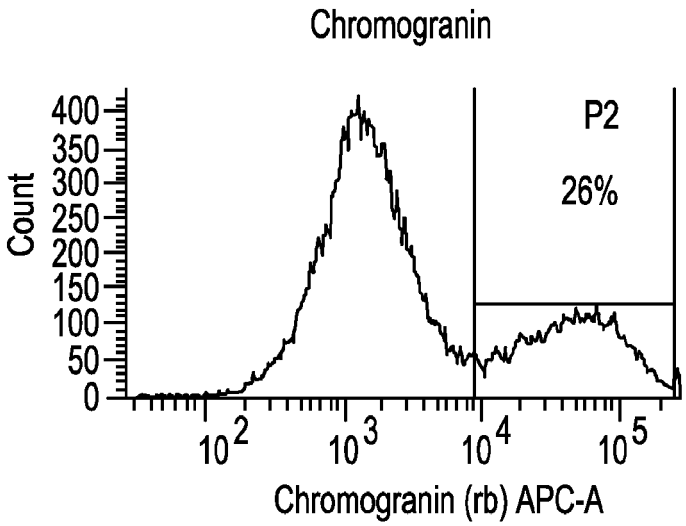


FIG. 16D

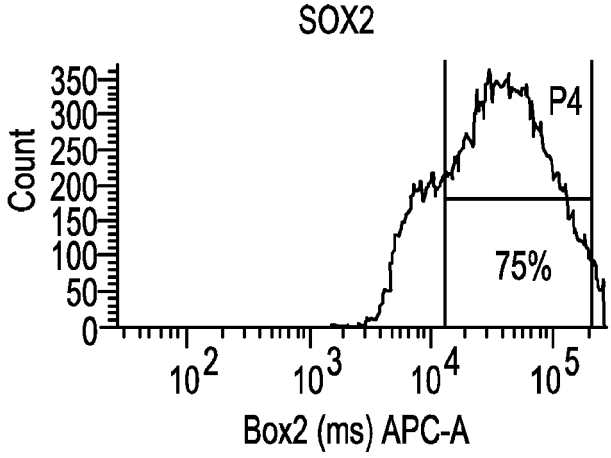


FIG. 16E

CDX2

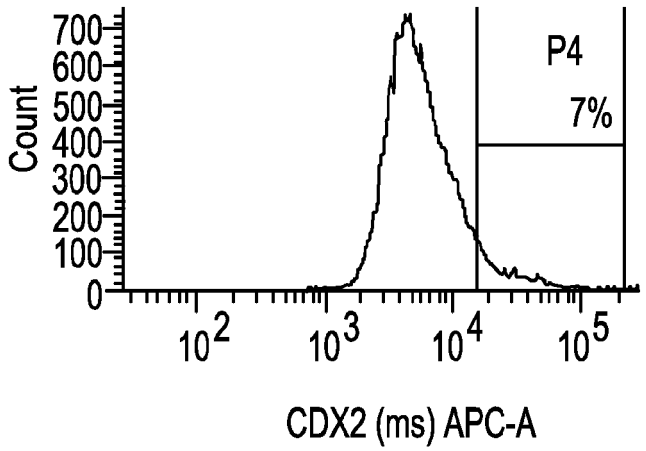


FIG. 16F

PDX-1

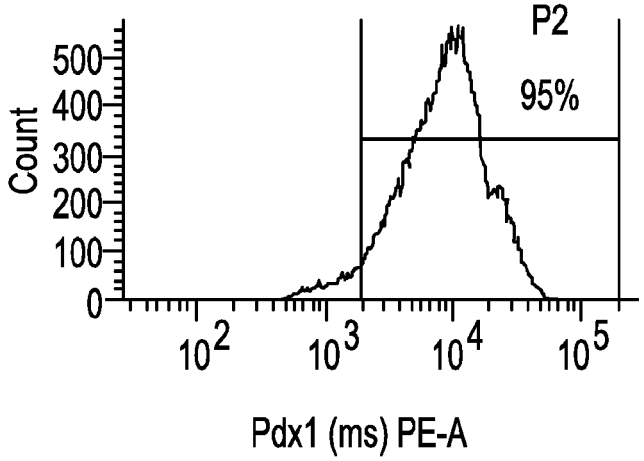


FIG. 17A

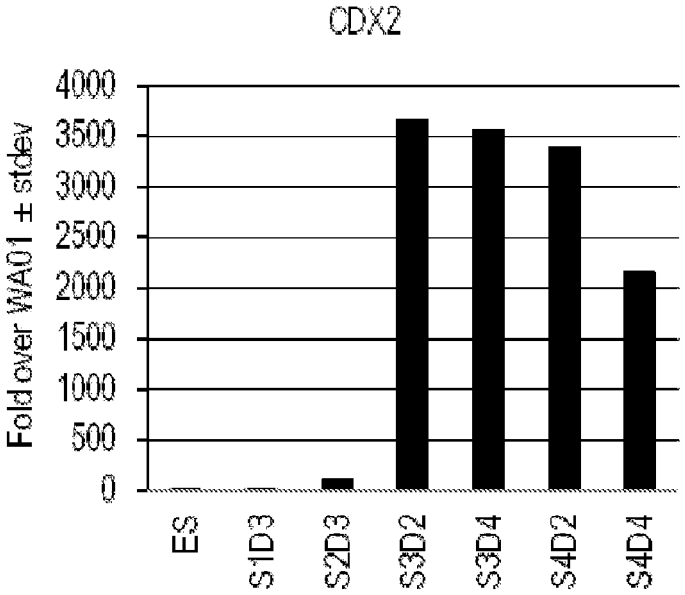


FIG. 17B

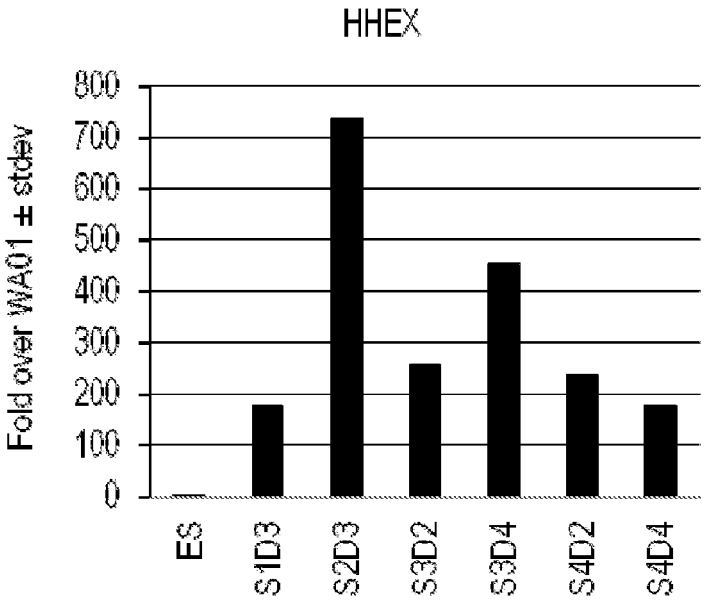


FIG. 17C

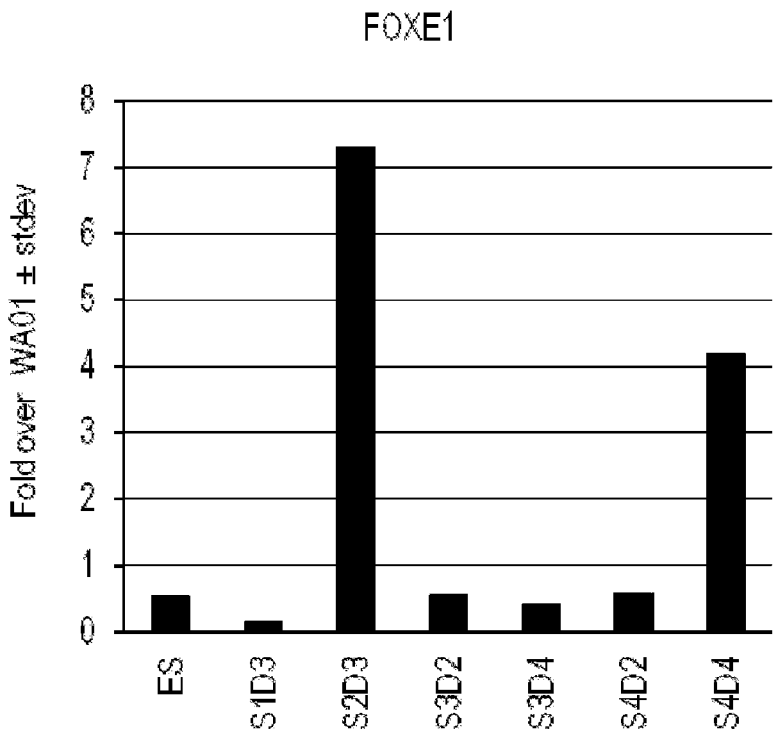


FIG. 17D

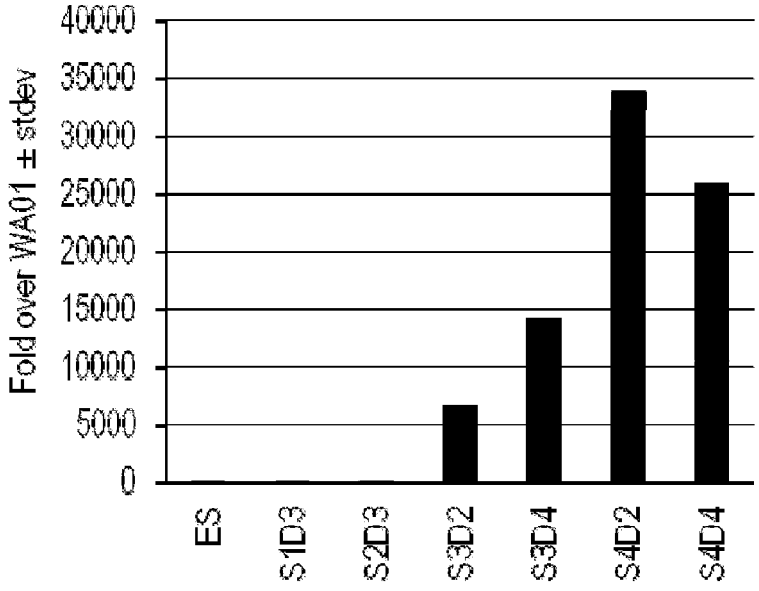


FIG. 17E

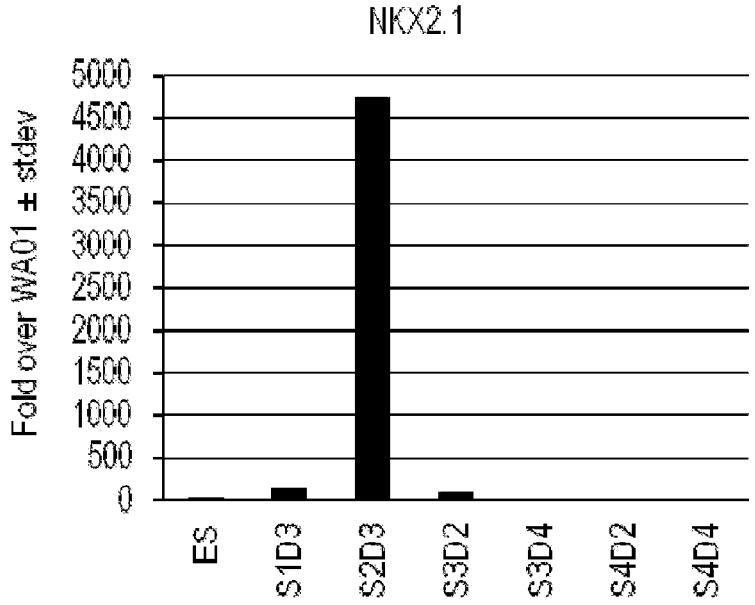


FIG. 17F

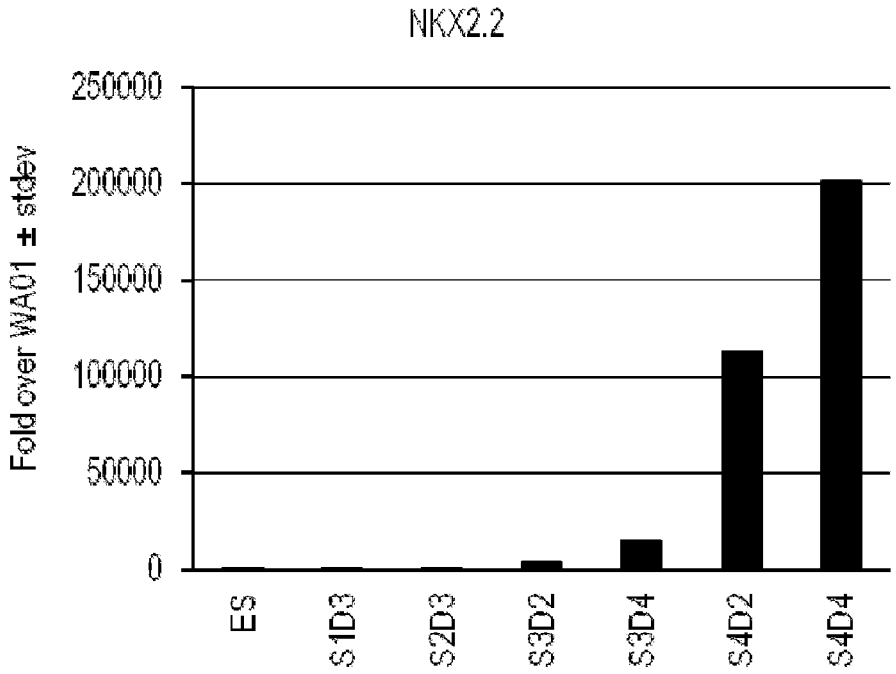


FIG. 17G

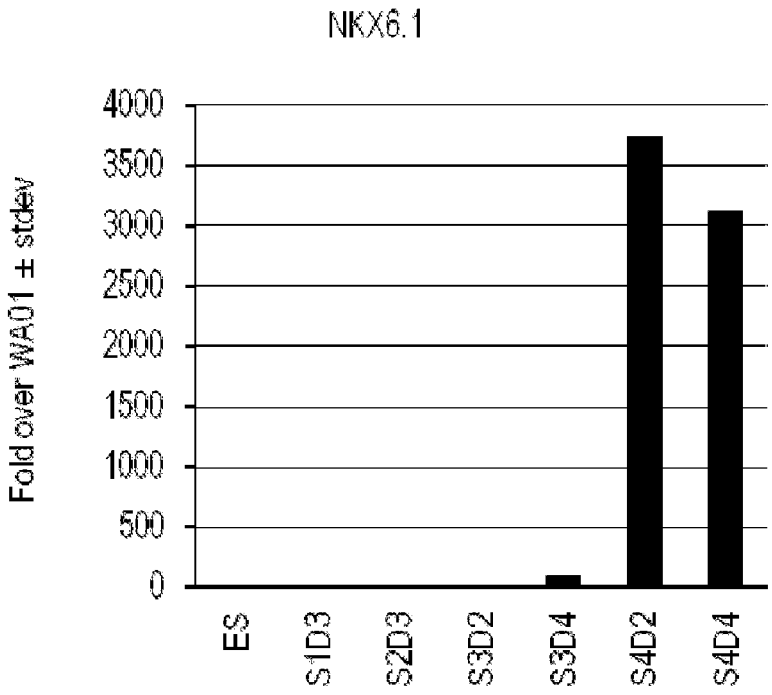


FIG. 17H

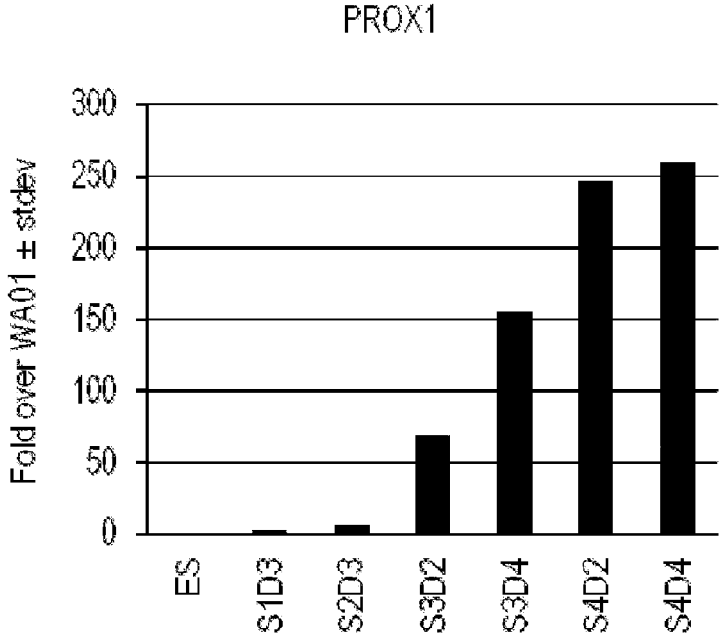


FIG. 17I

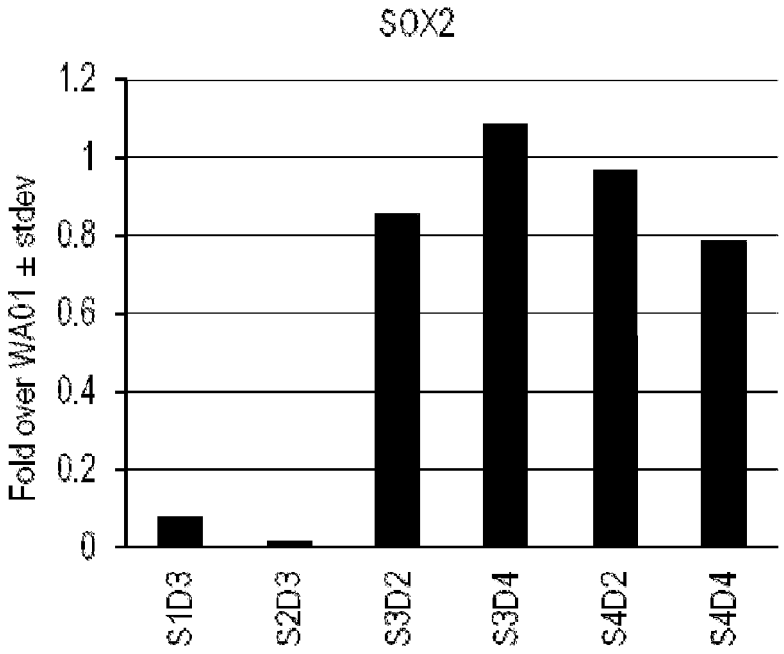


FIG. 17J

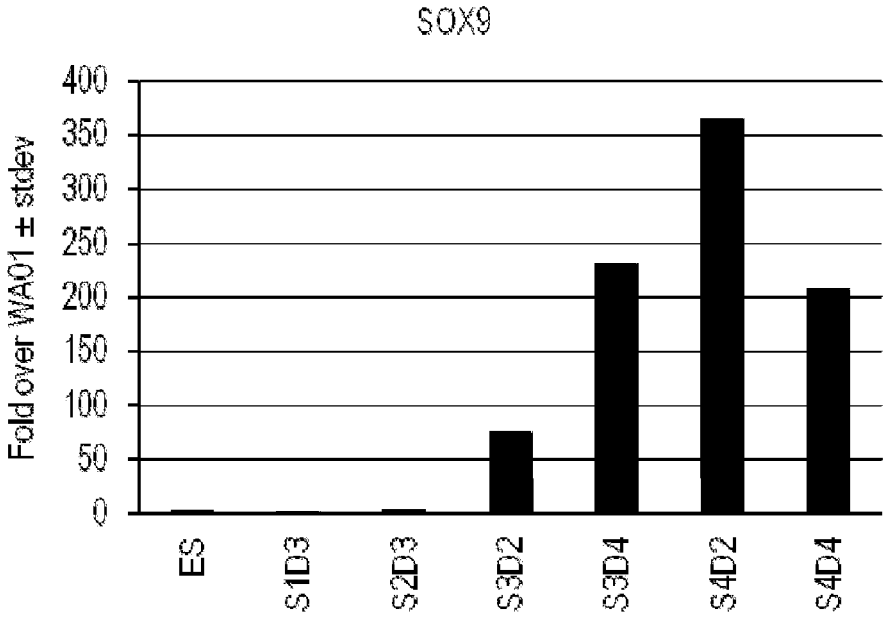


FIG. 18A

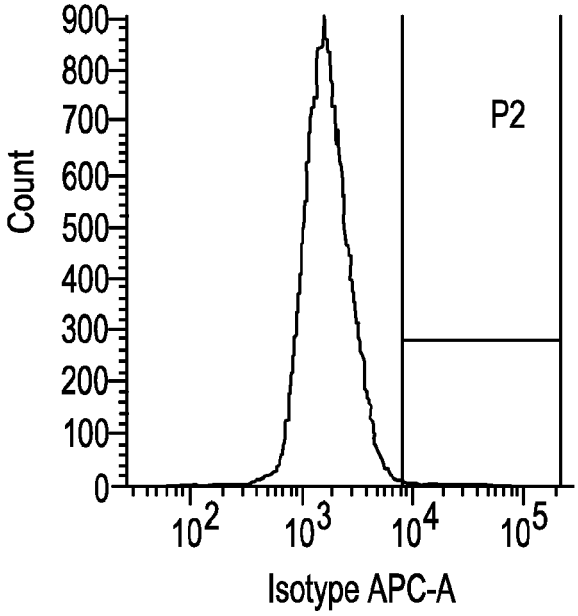


FIG. 18B

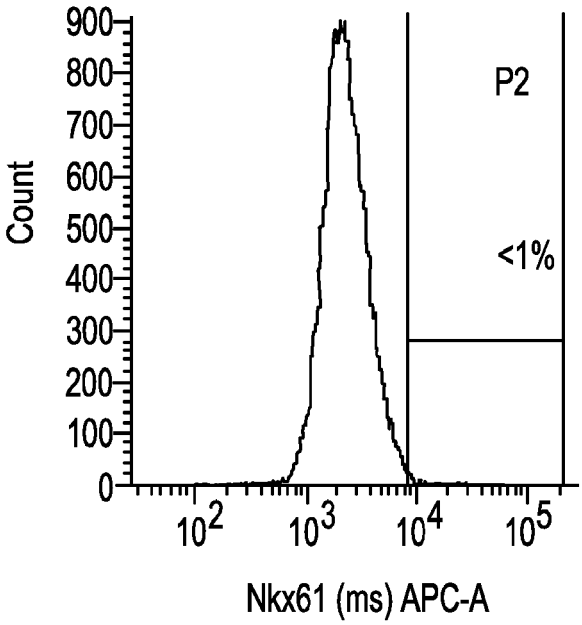


FIG. 18C

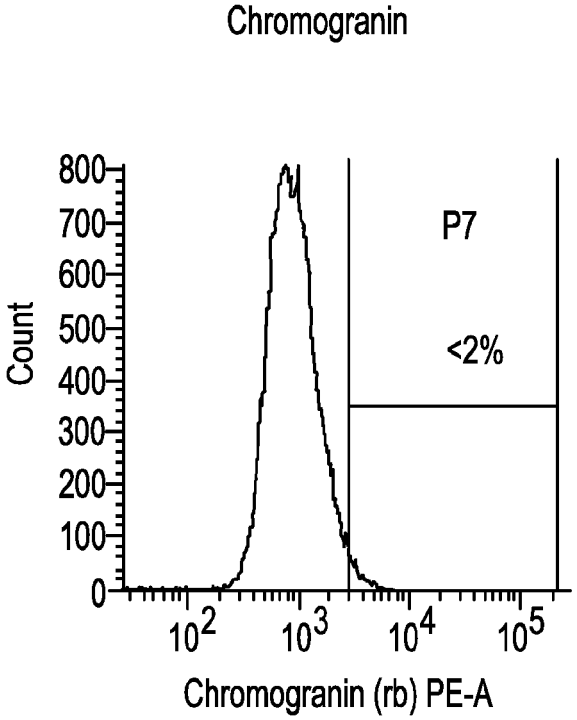


FIG. 18D

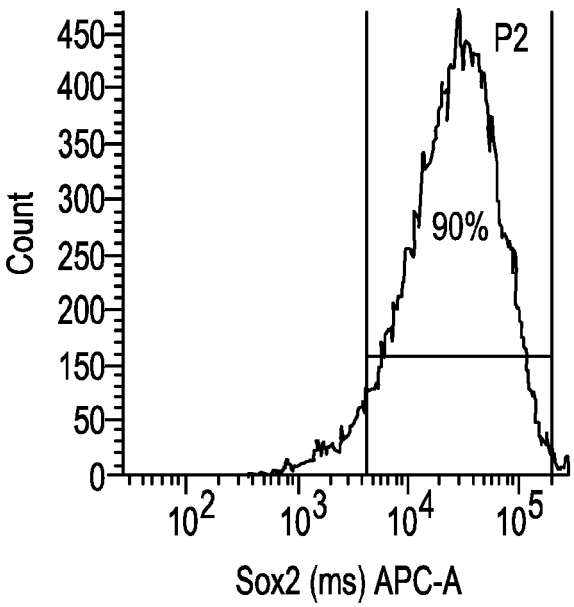


FIG. 18E

CDX2

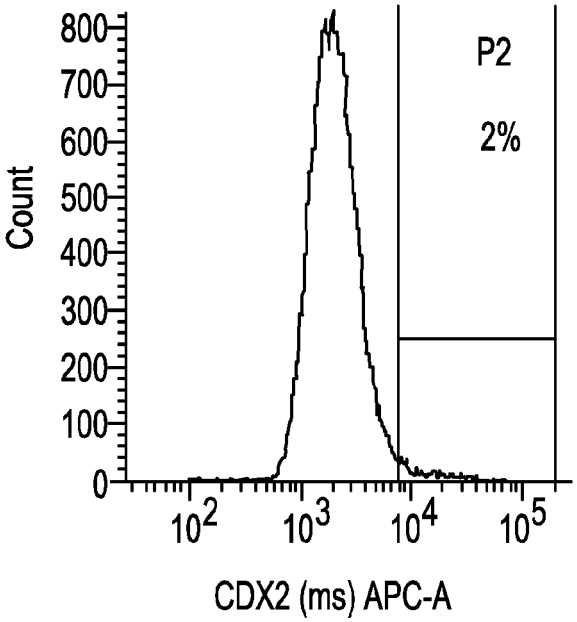


FIG. 18F

KI-67

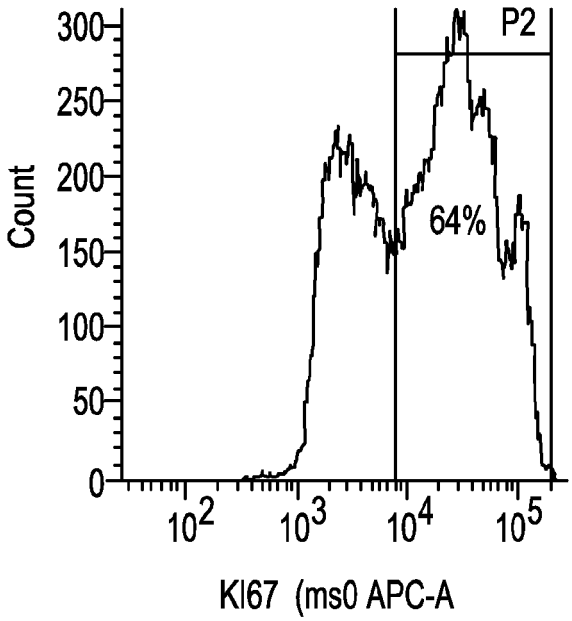


FIG. 18G

PDX-1

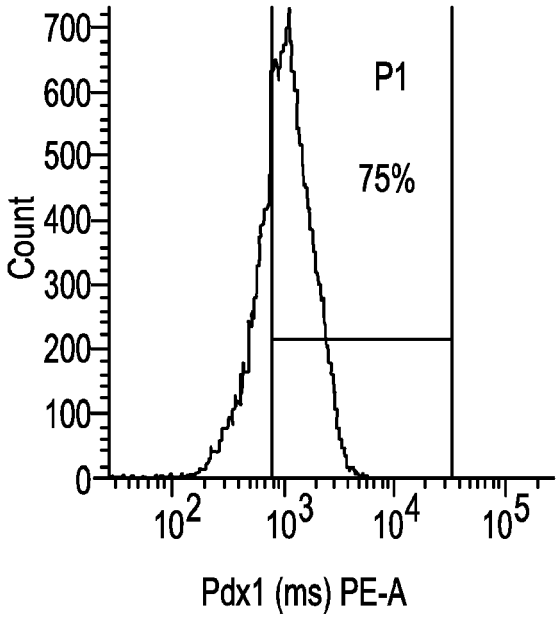


FIG. 19A

Isotype

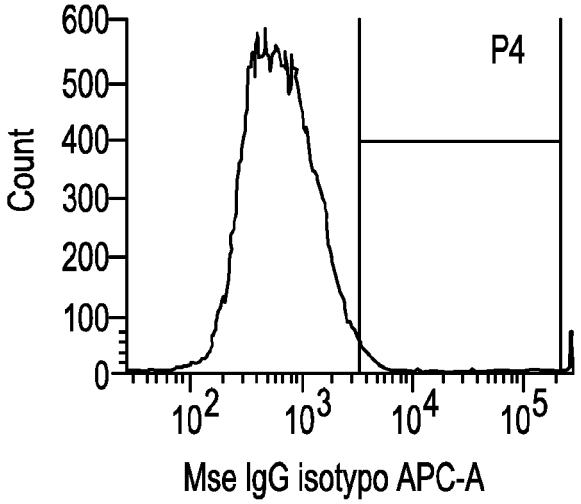


FIG. 19B

NKX6.1

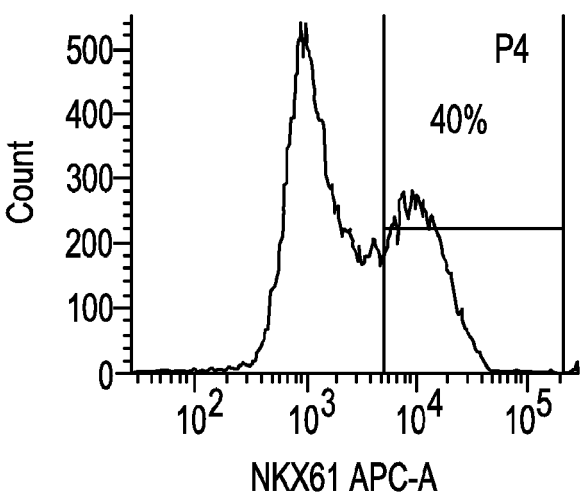


FIG. 19C

Chromogranin

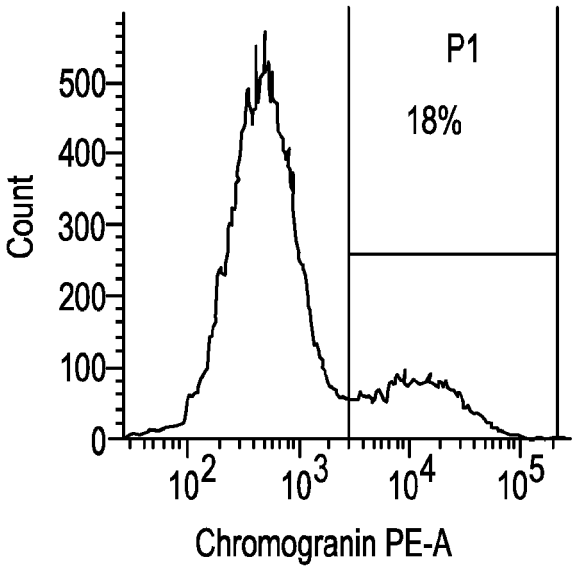


FIG. 19D

SOX2

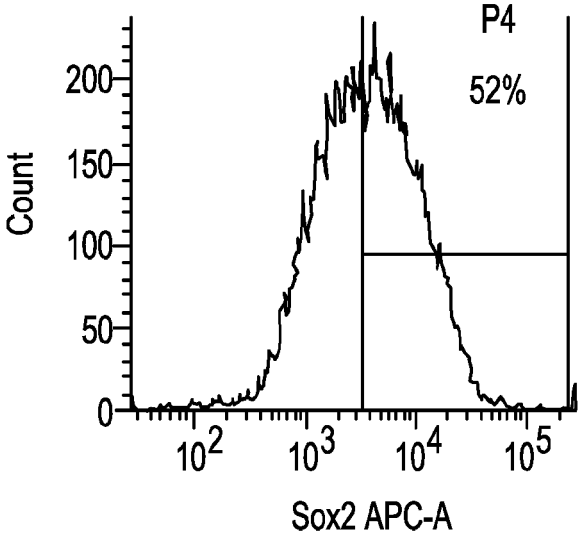


FIG. 19E

CDX2

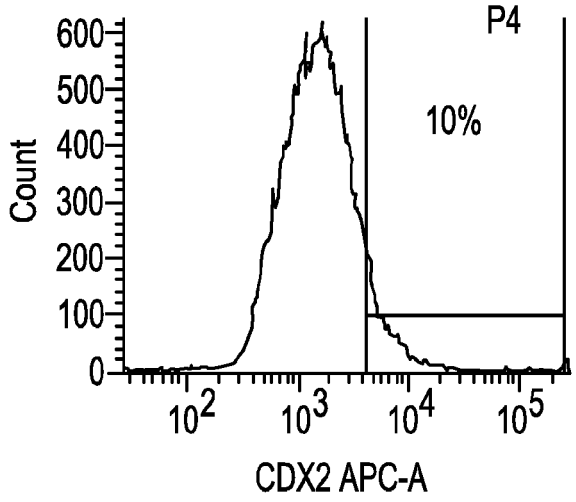


FIG. 19F

KI-67

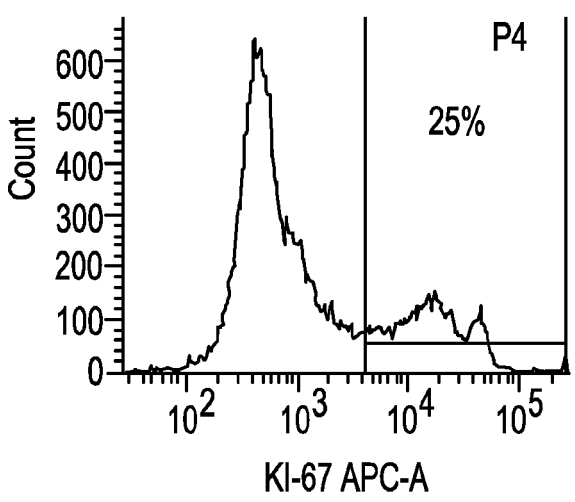


FIG. 19G

PDX-1

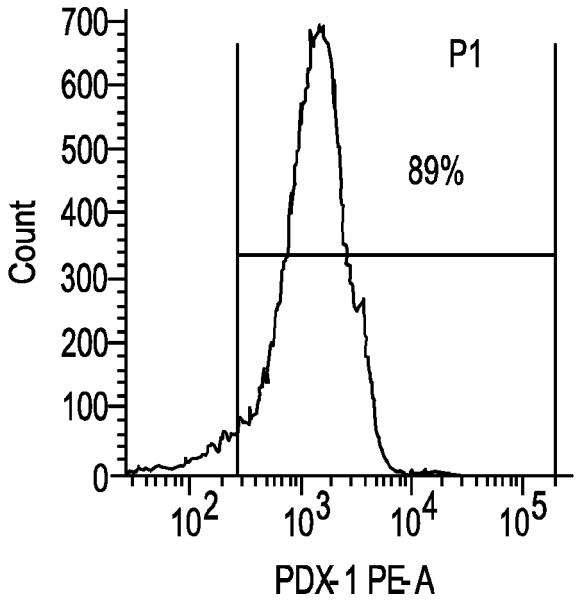


FIG. 20B

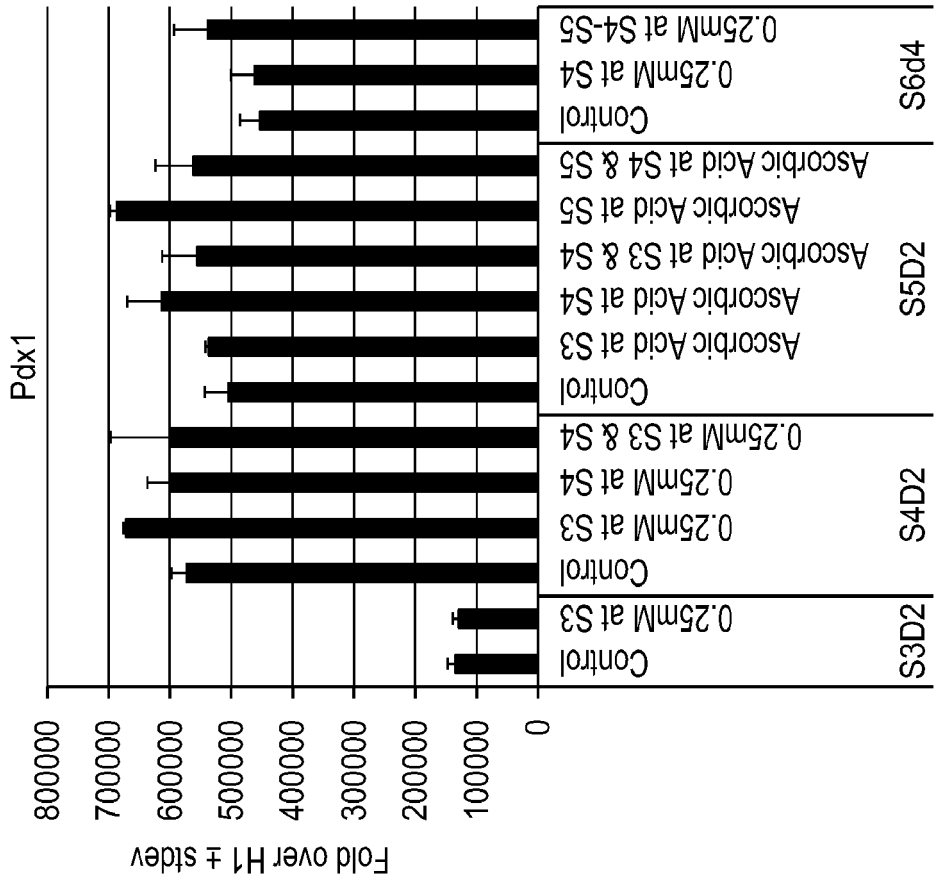


FIG. 20A

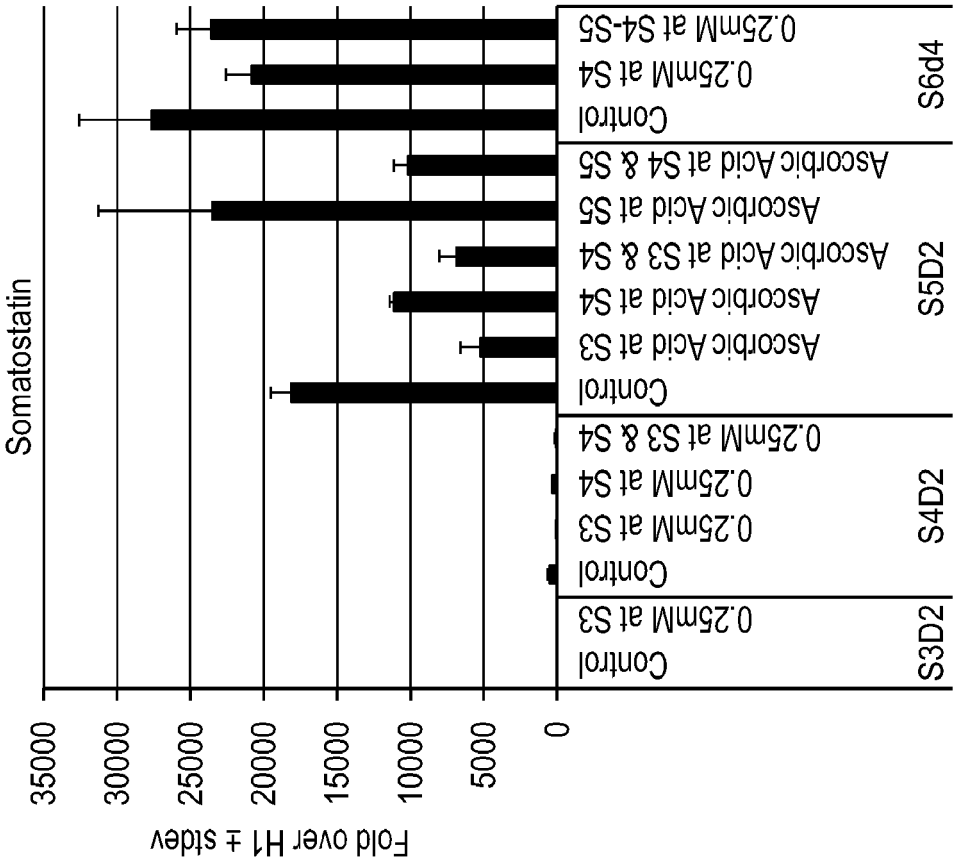


FIG. 20C

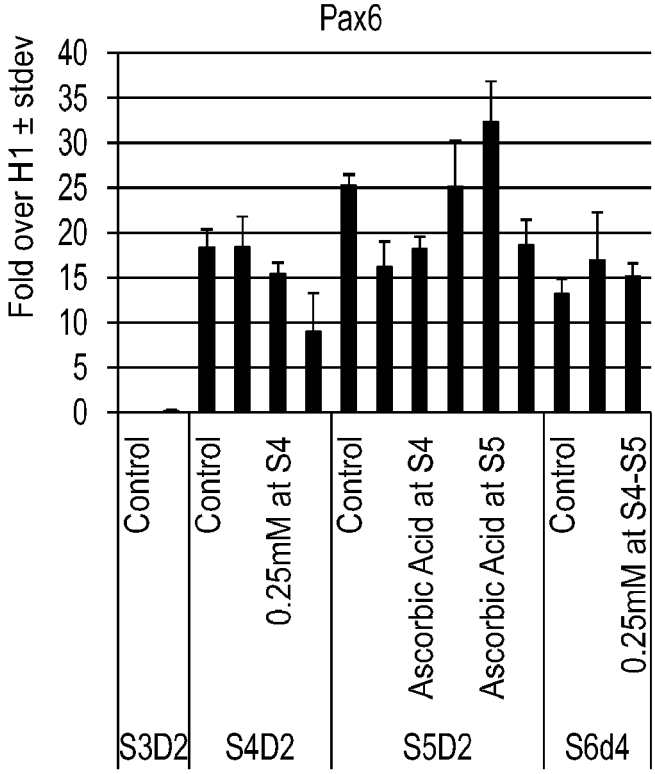


FIG. 20D

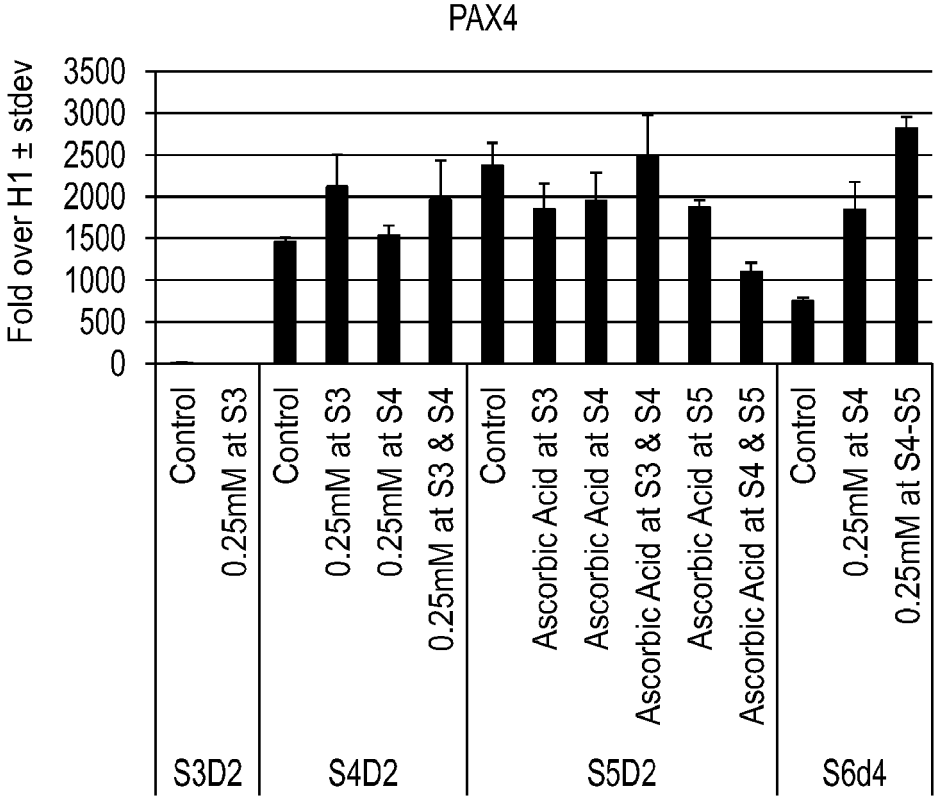


FIG. 20E

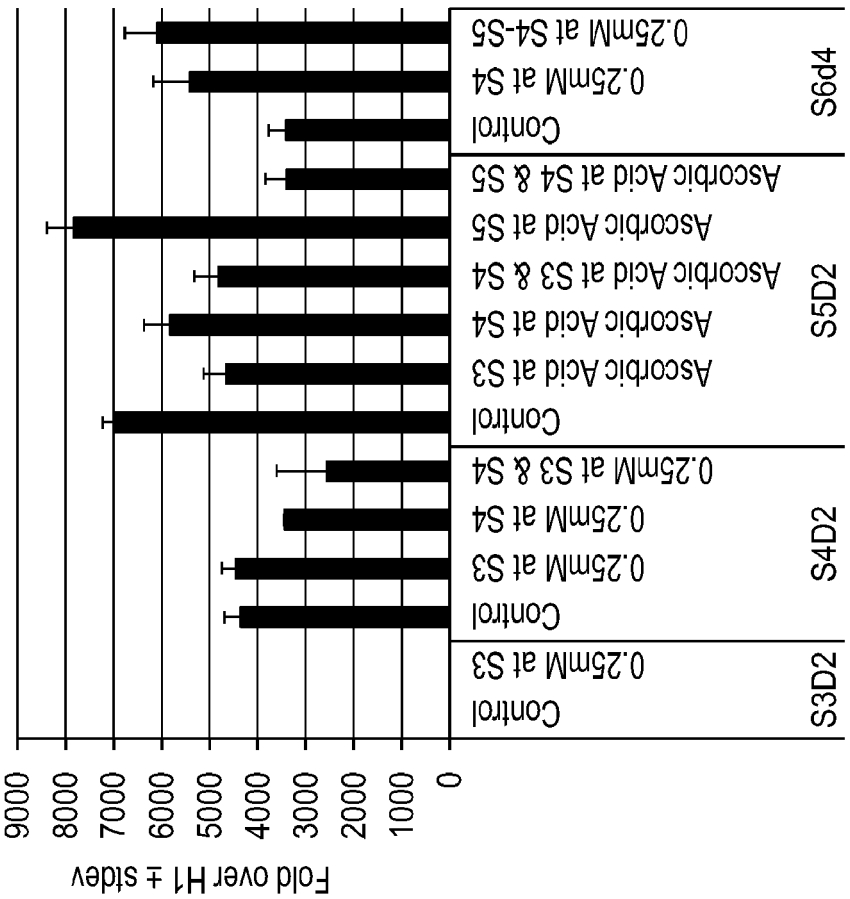


FIG. 20F

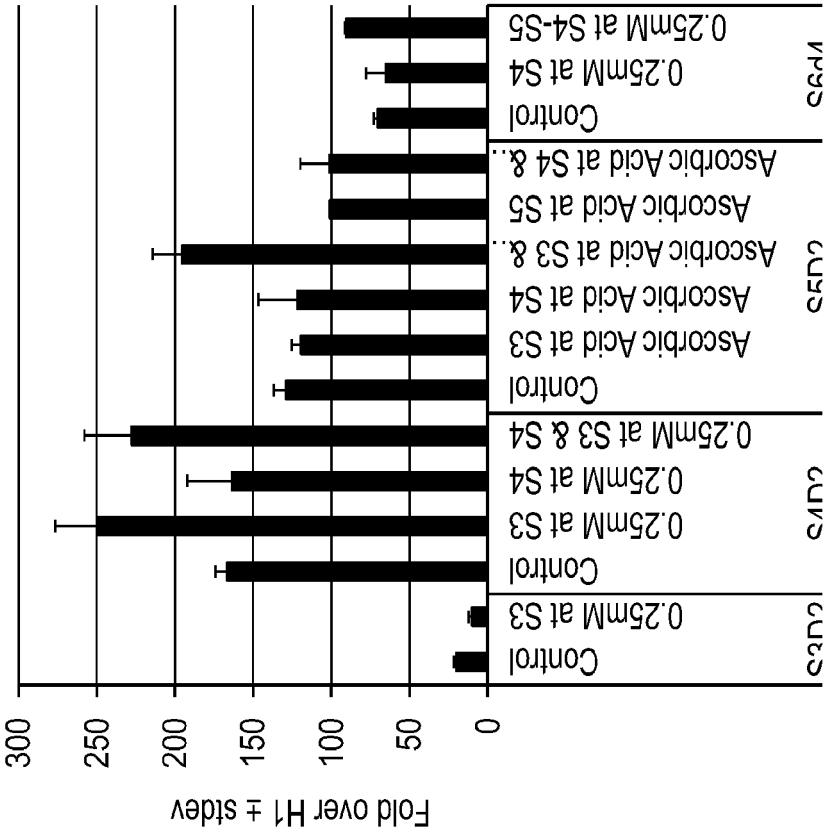


FIG. 20H

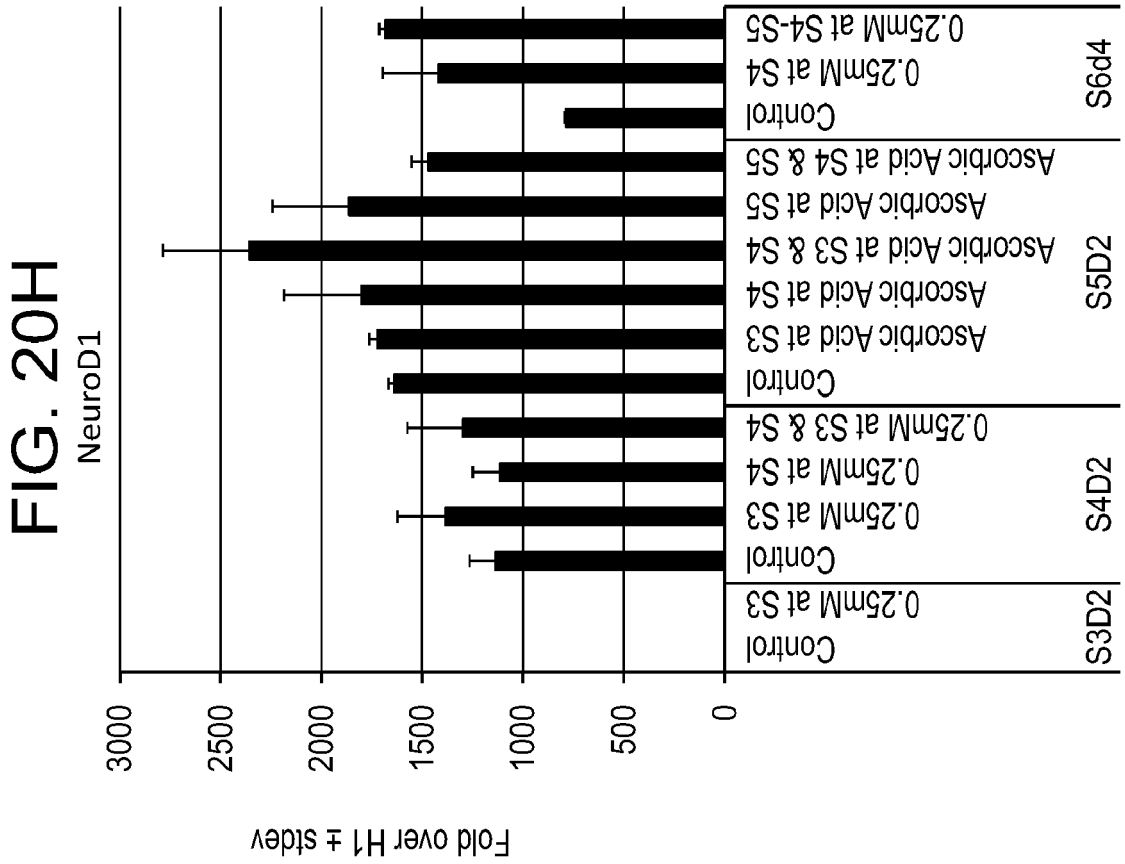


FIG. 20G

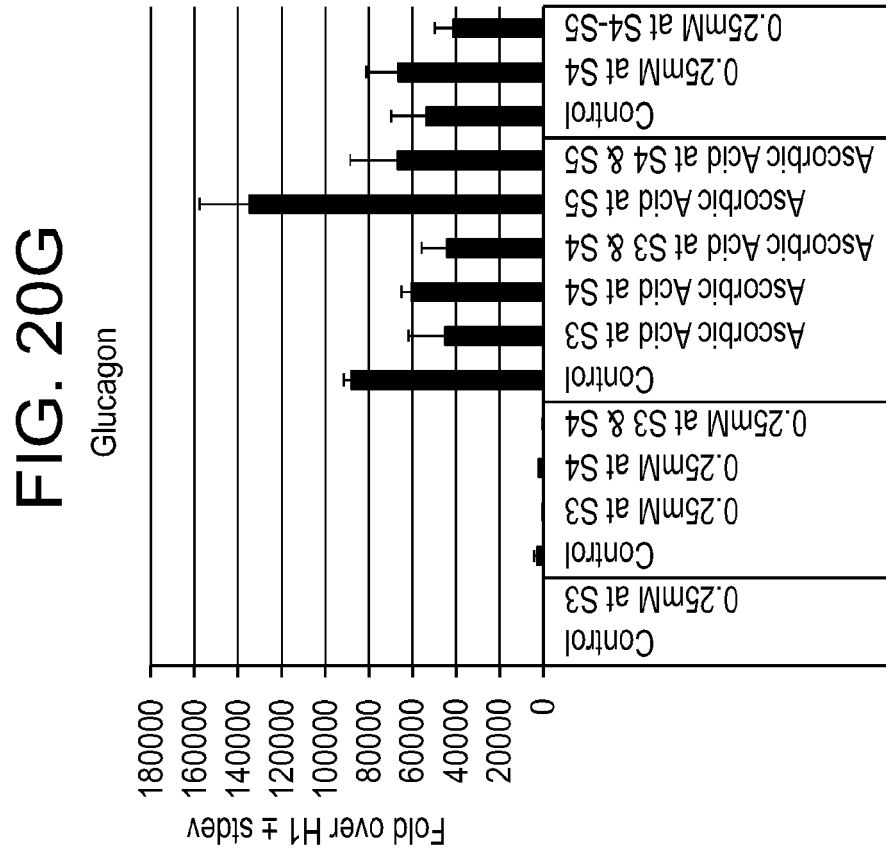


FIG. 20I

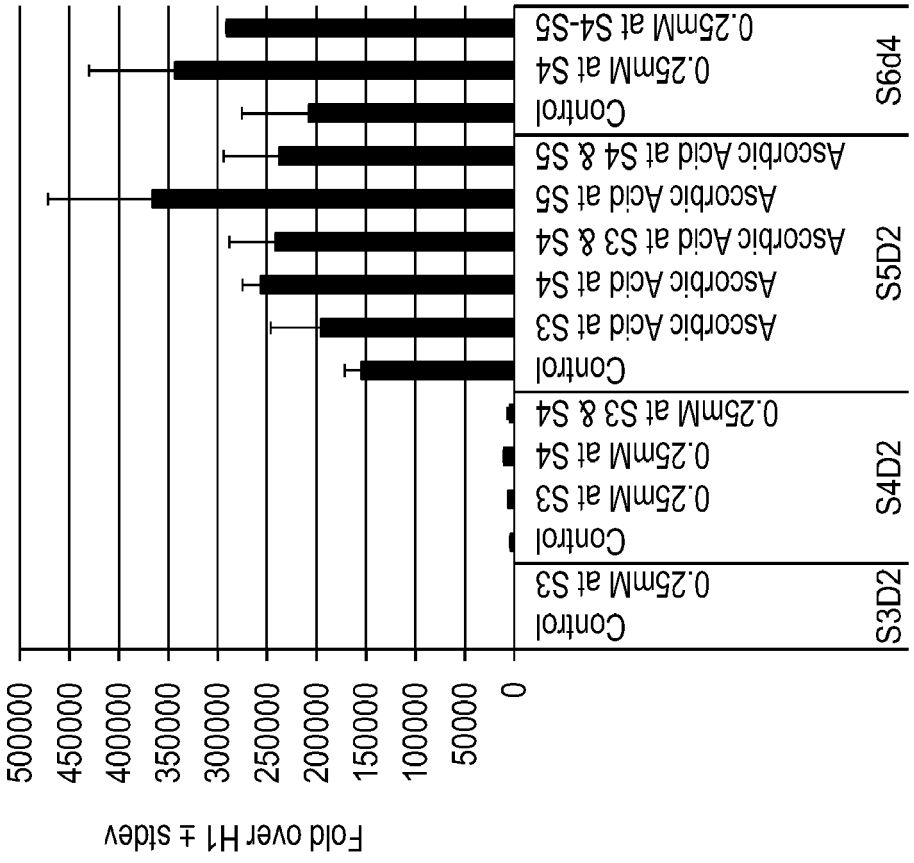


FIG. 20J

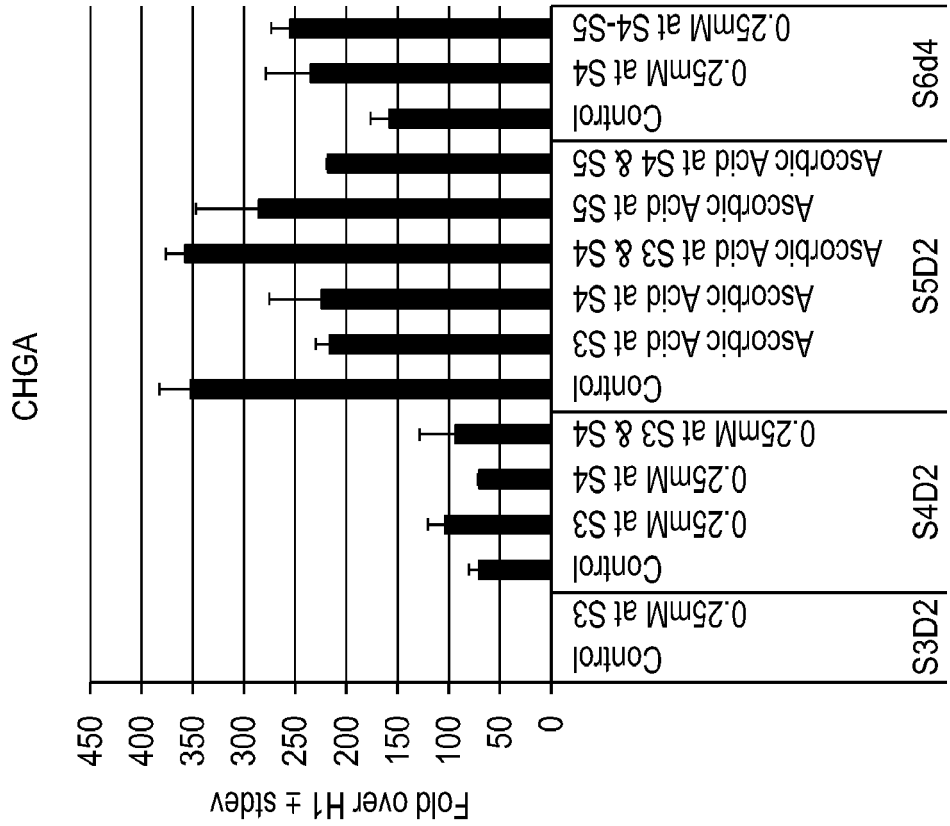


FIG. 21A

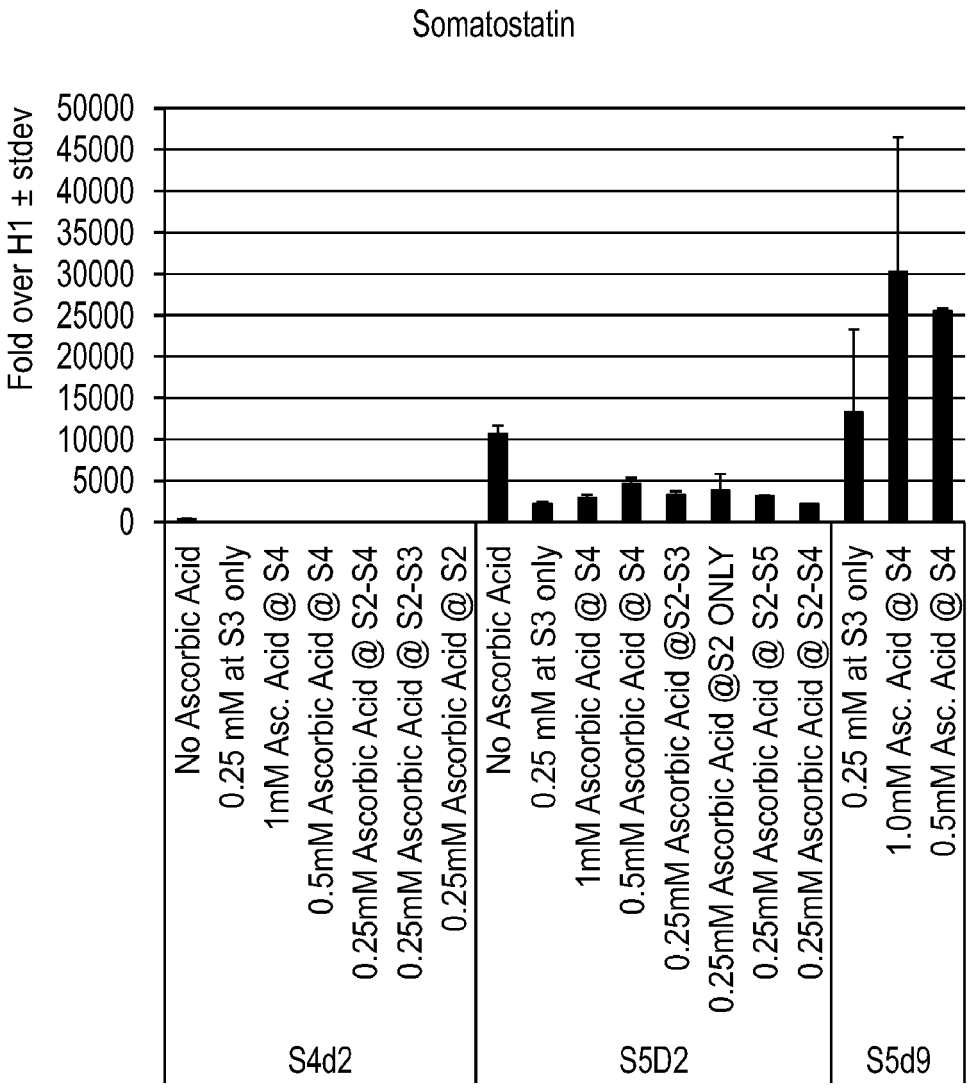

Somatostatin
Fold over H1 ± stdev
50000
45000
40000
35000
30000
25000
20000
15000
10000
5000
0
No Ascorbic Acid
0.25 mM at S3 only
1mM Asc. Acid @ S4
0.5mM Ascorbic Acid @ S4
0.25mM Ascorbic Acid @ S2-S4
0.25mM Ascorbic Acid @ S2-S3
0.25mM Ascorbic Acid @ S2
No Ascorbic Acid
0.25 mM at S3 only
1mM Ascorbic Acid @ S4
0.5mM Ascorbic Acid @ S4
0.25mM Ascorbic Acid @S2-S3
0.25mM Ascorbic Acid @S2 ONLY
0.25mM Ascorbic Acid @ S2-S5
0.25mM Ascorbic Acid @ S2-S4
0.25 mM at S3 only
1.0mM Asc. Acid @ S4
0.5mM Asc. Acid @ S4
S4d2
S5D2
S5d9

FIG. 21B

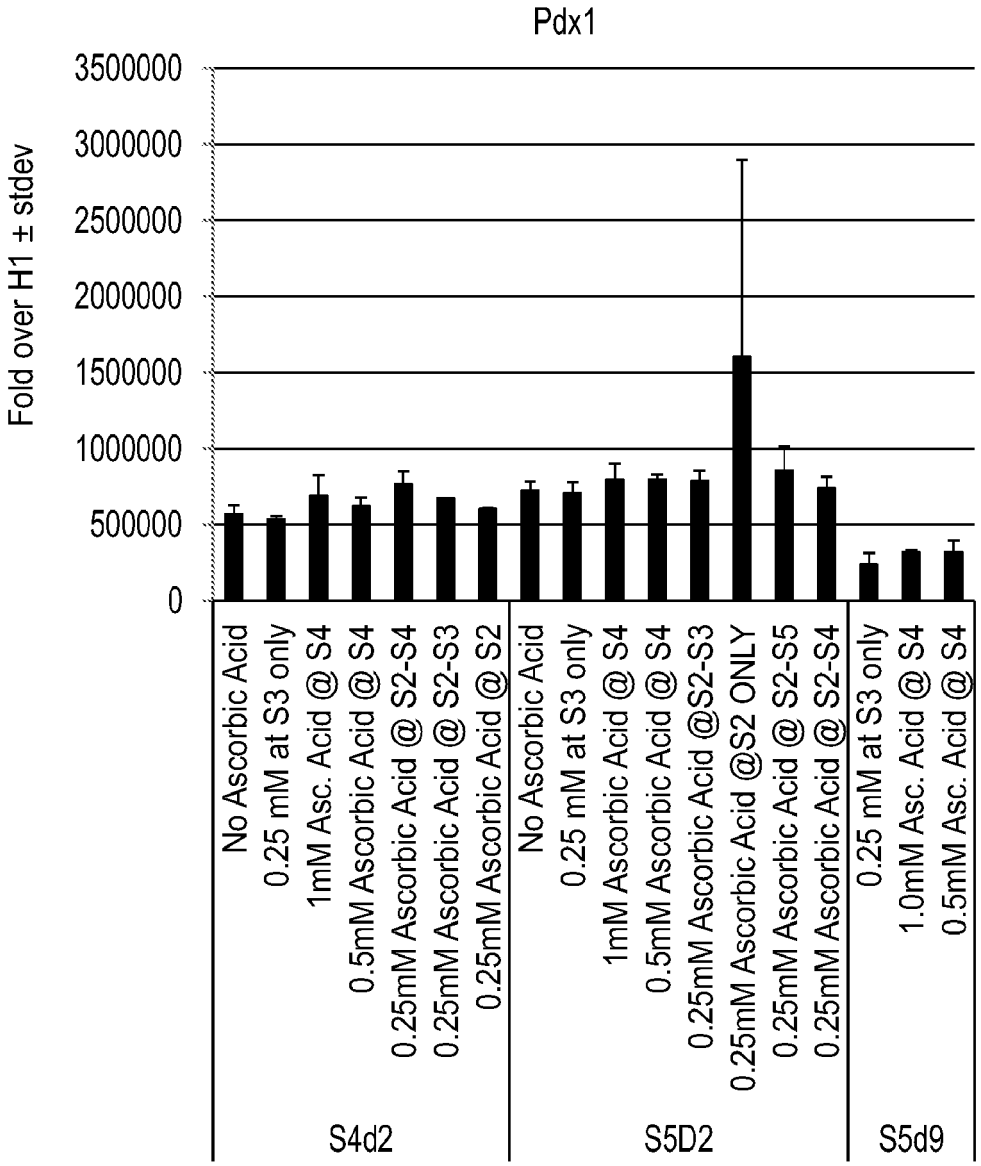

Pdx1
Fold over H1 ± stdev
3500000
3000000
2500000
2000000
1500000
1000000
500000
0
No Ascorbic Acid
0.25 mM at S3 only
1mM Asc. Acid @ S4
0.5mM Ascorbic Acid @ S4
0.25mM Ascorbic Acid @ S2-S4
0.25mM Ascorbic Acid @ S2-S3
0.25mM Ascorbic Acid @ S2
No Ascorbic Acid
0.25 mM at S3 only
1mM Ascorbic Acid @ S4
0.5mM Ascorbic Acid @ S4
0.25mM Ascorbic Acid @S2-S3
0.25mM Ascorbic Acid @S2 ONLY
0.25mM Ascorbic Acid @ S2-S5
0.25mM Ascorbic Acid @ S2-S4
0.25 mM at S3 only
1.0mM Asc. Acid @ S4
0.5mM Asc. Acid @ S4
S4d2
S5D2
S5d9

FIG. 21C

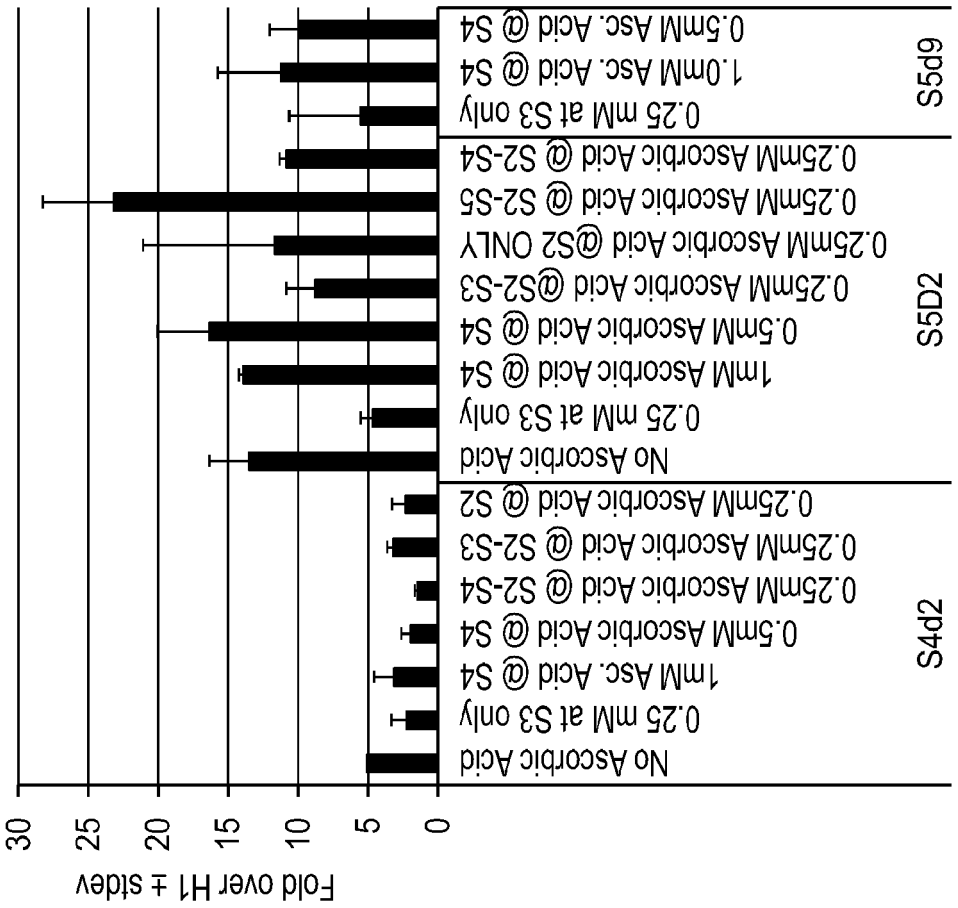


FIG. 21D

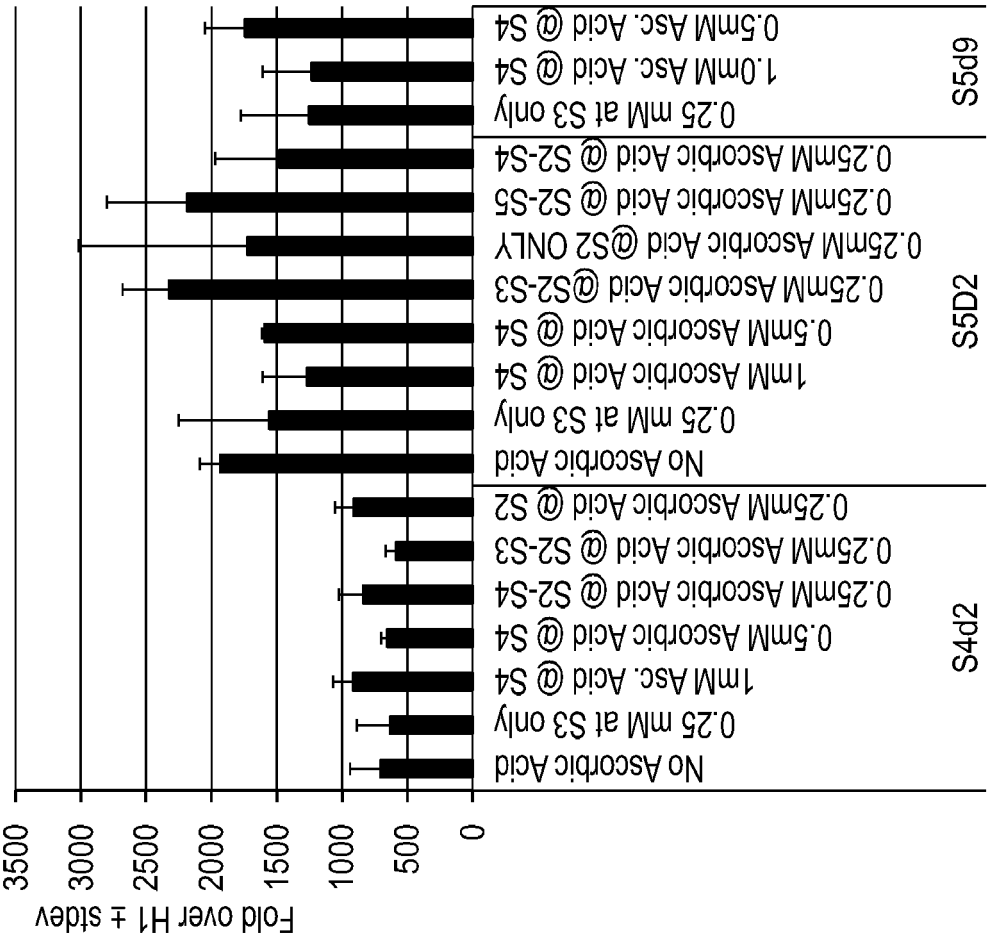


FIG. 21E

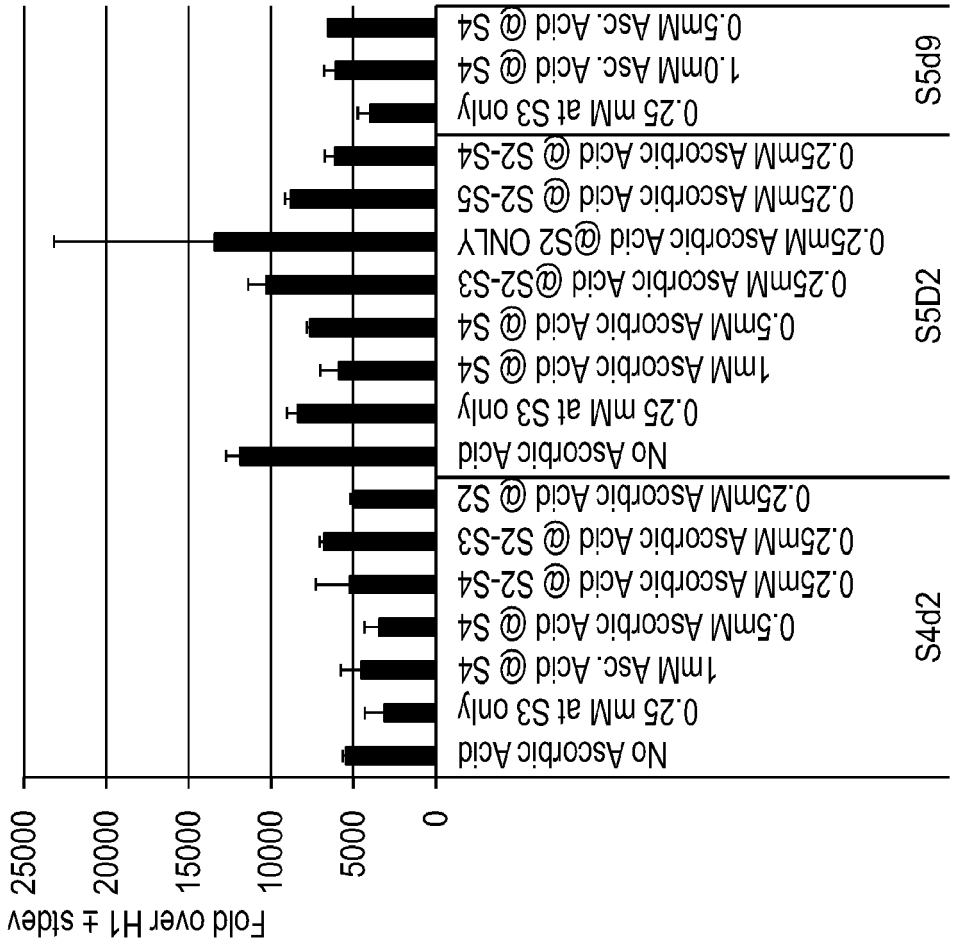


FIG. 21F

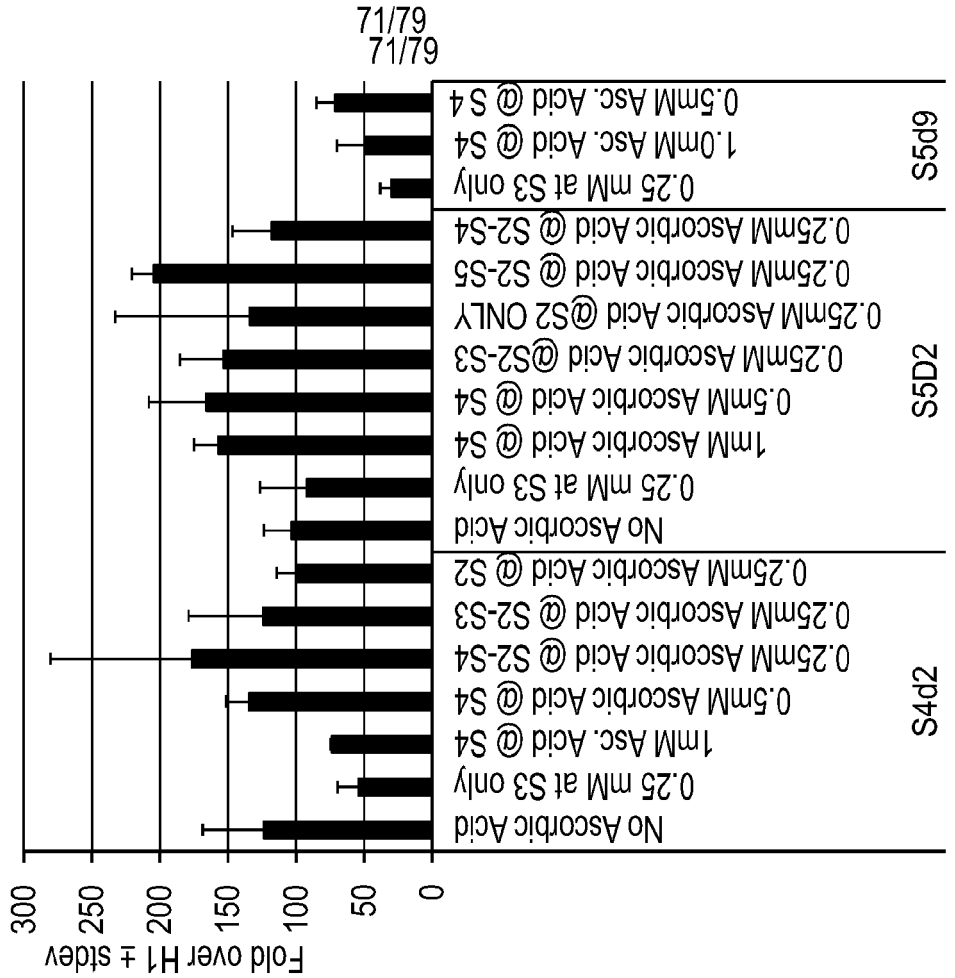


FIG. 21G

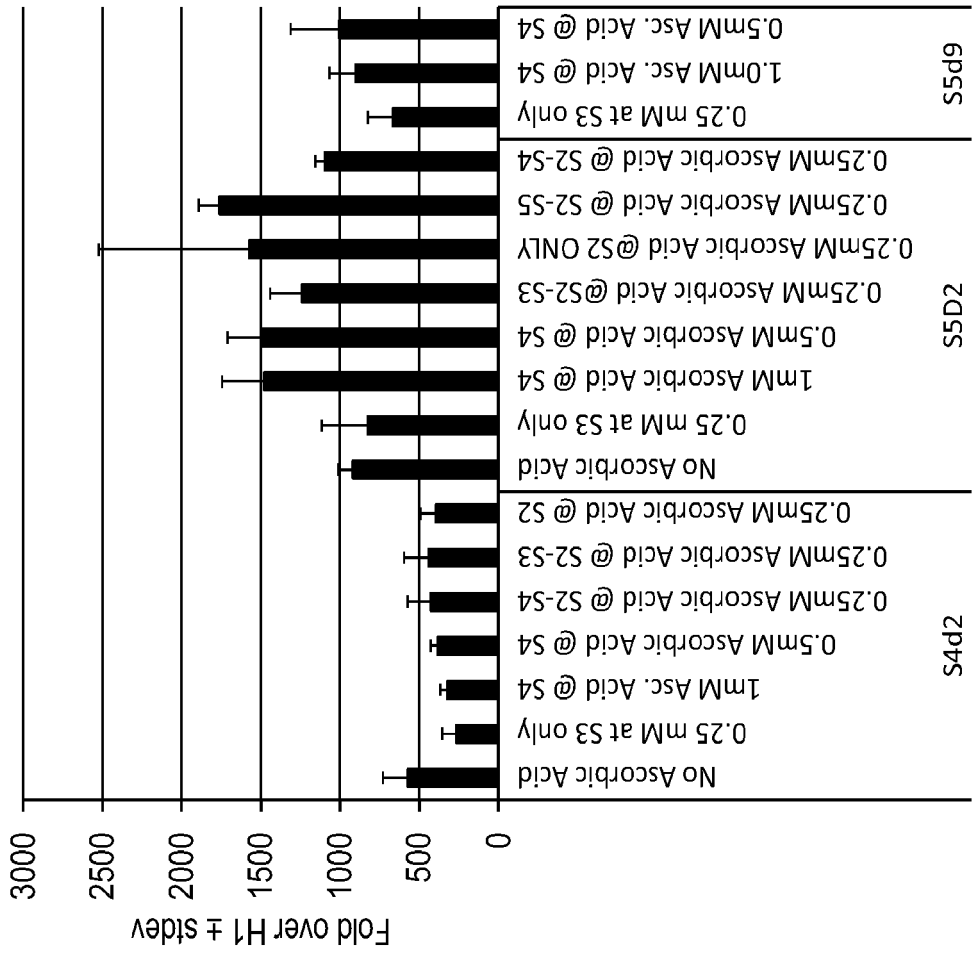


FIG. 21H

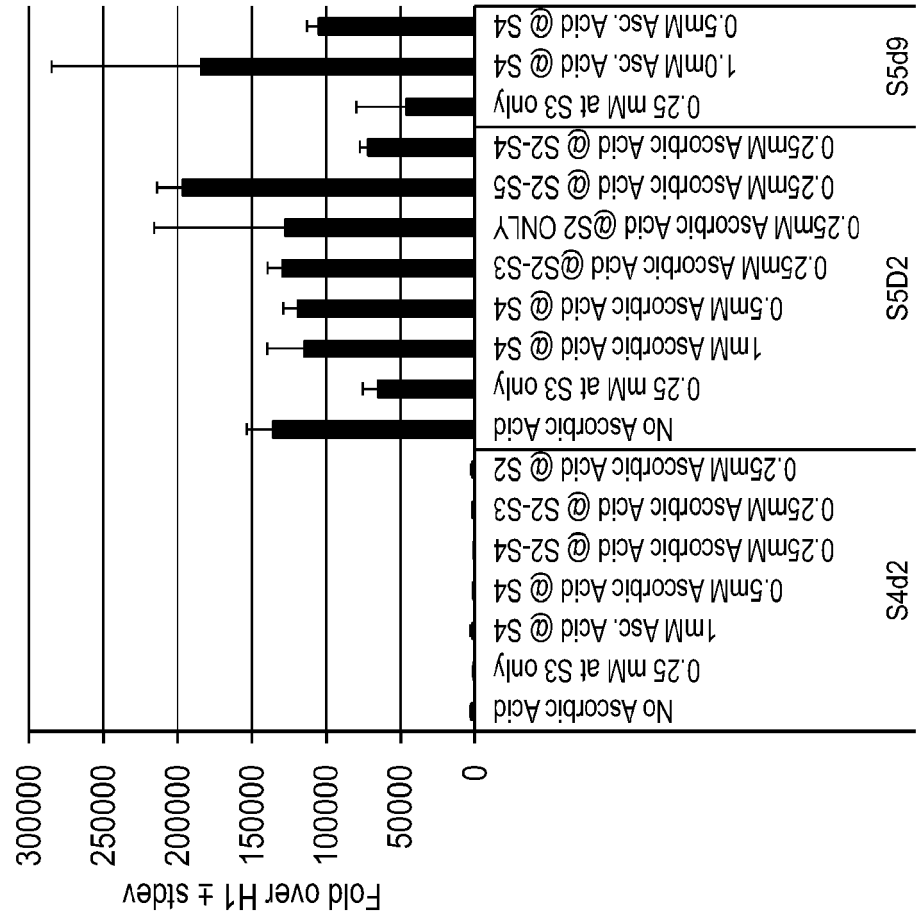


FIG. 21I

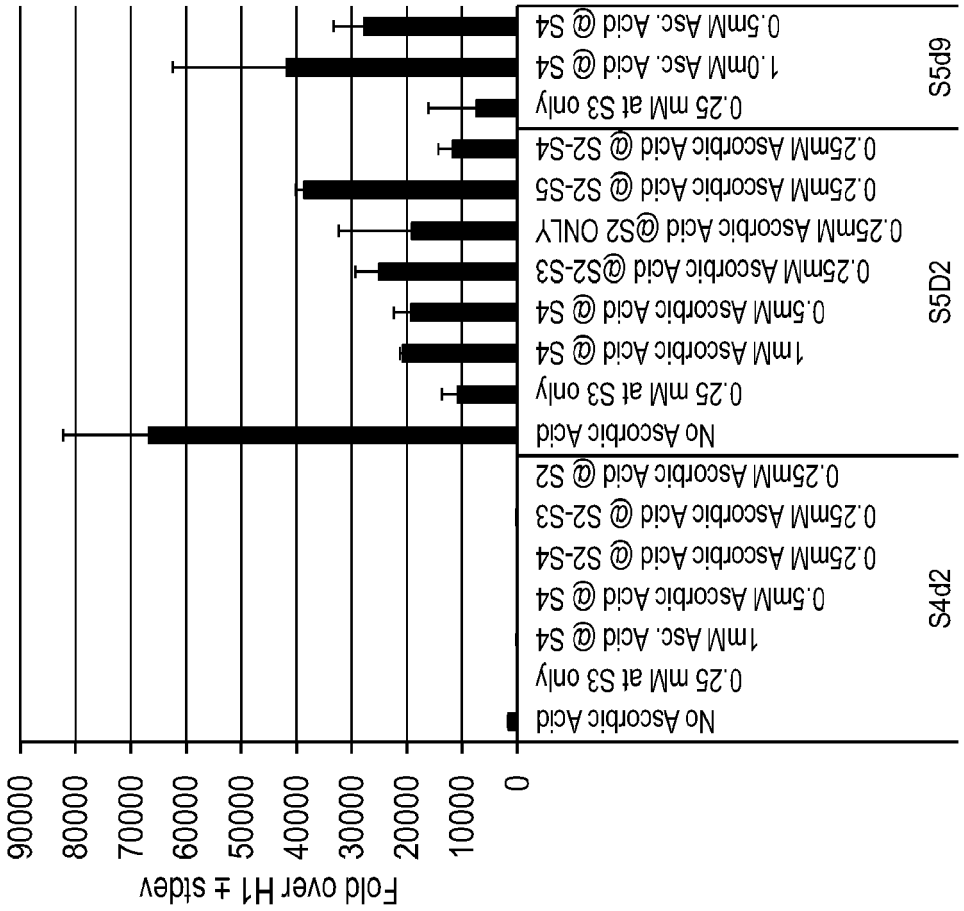


FIG. 21J

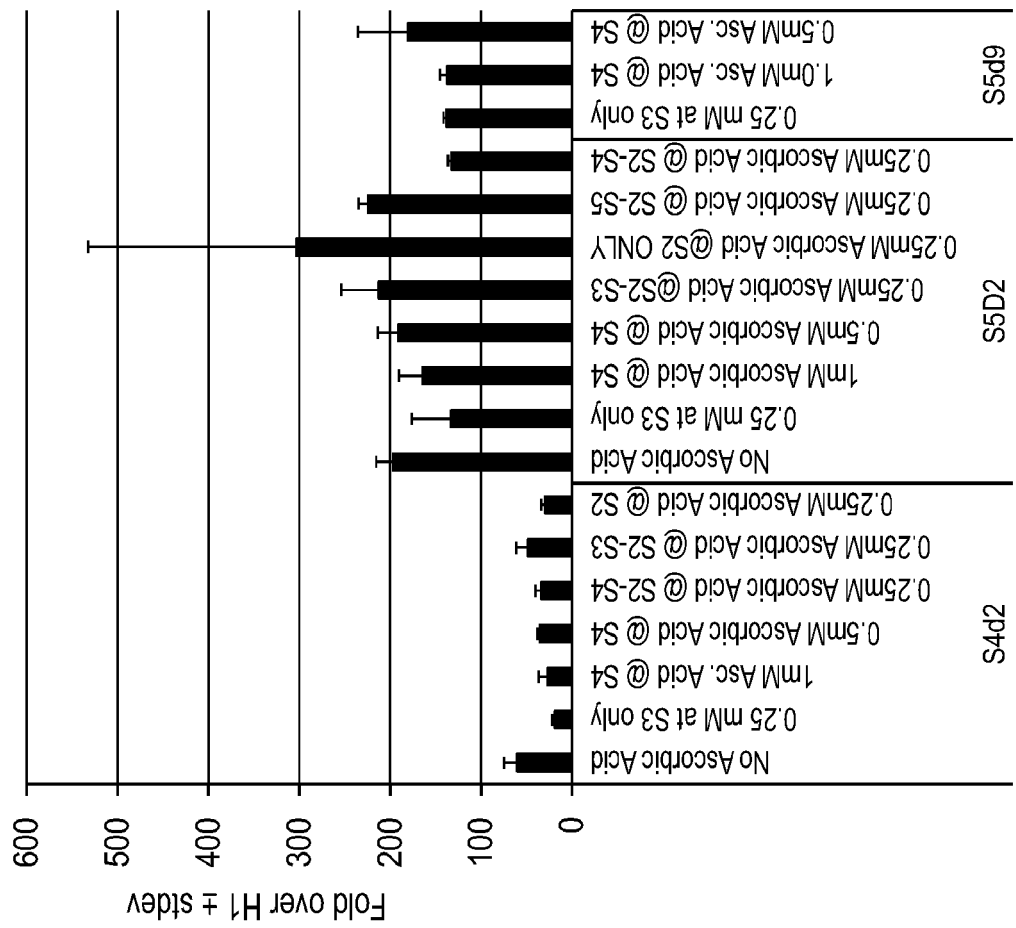


FIG. 22A

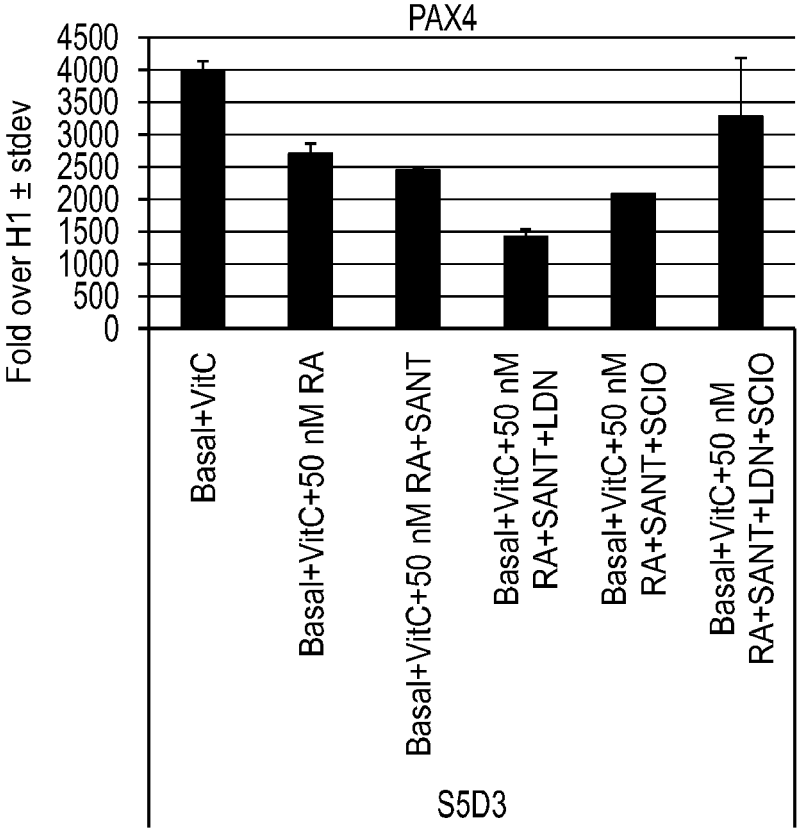


FIG. 22B

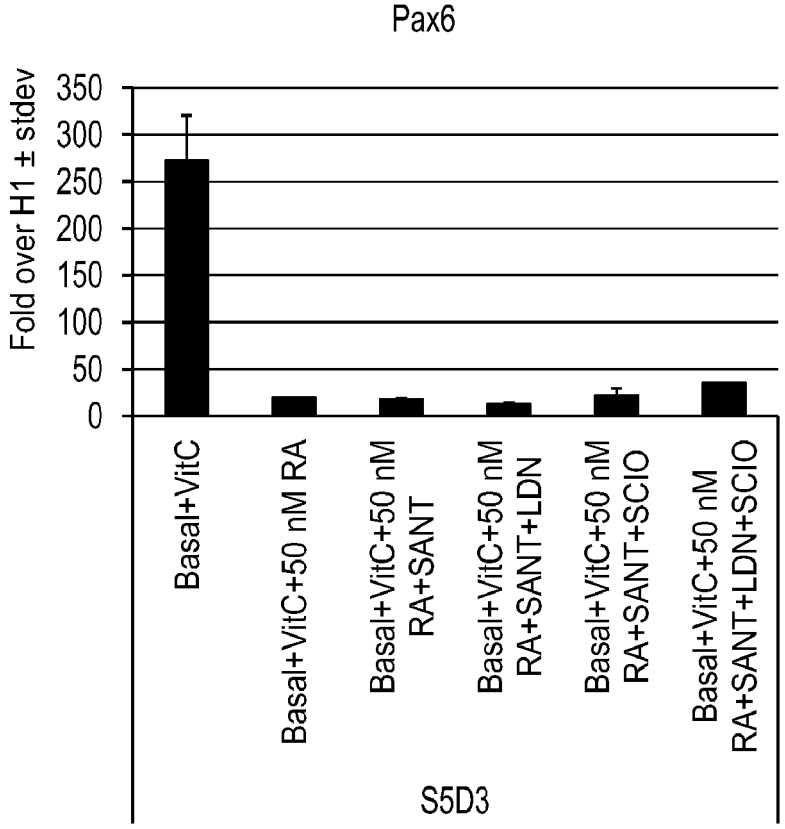


FIG. 22C

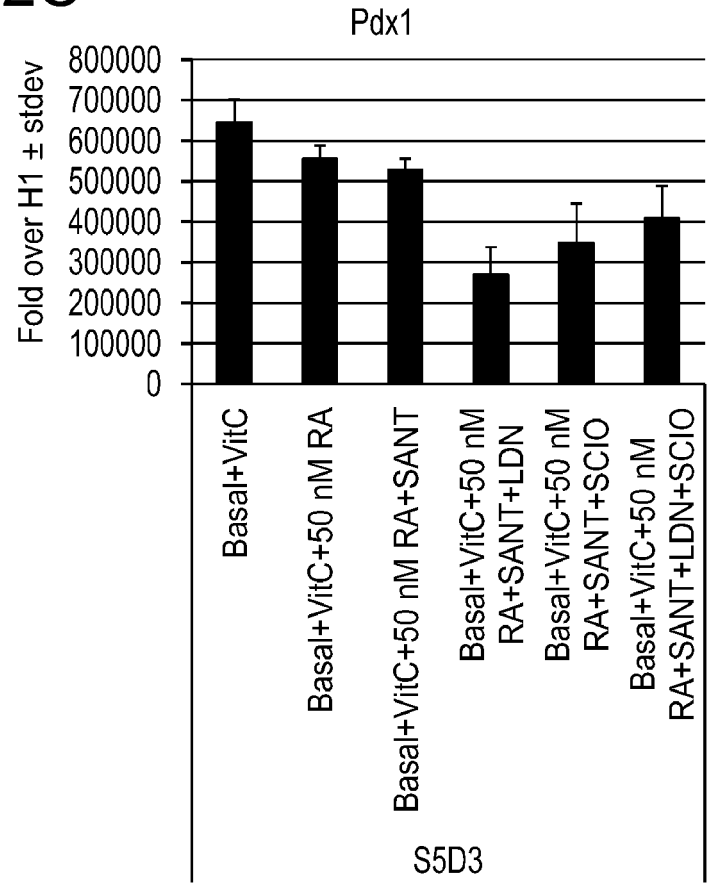


FIG. 22D

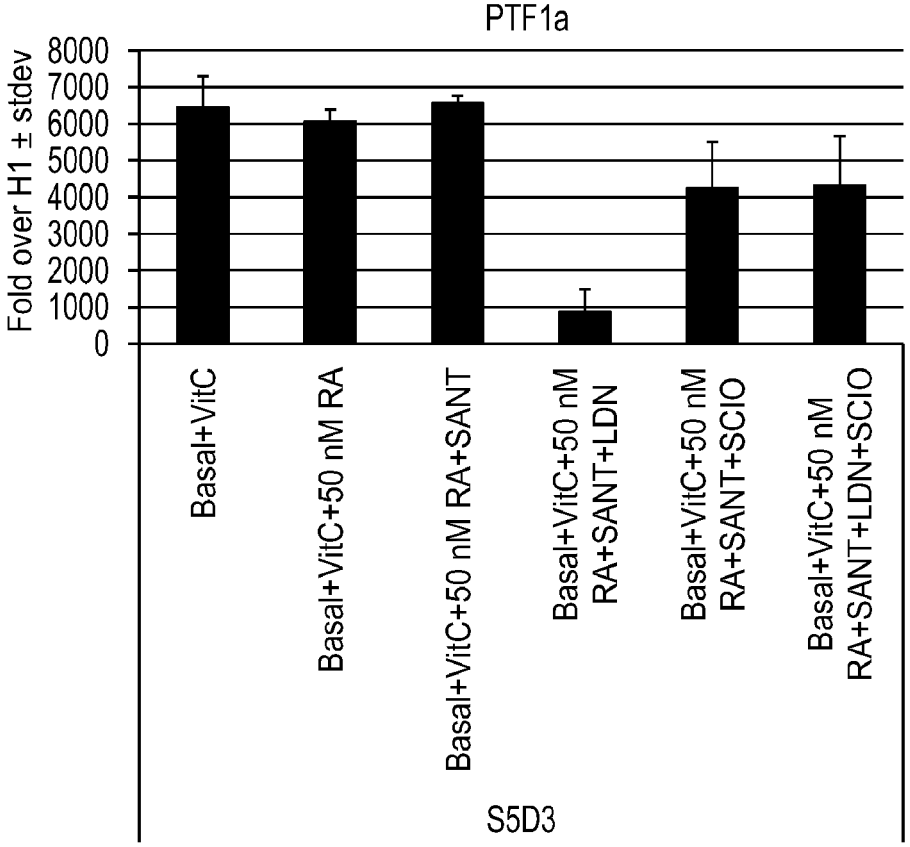


FIG. 22F

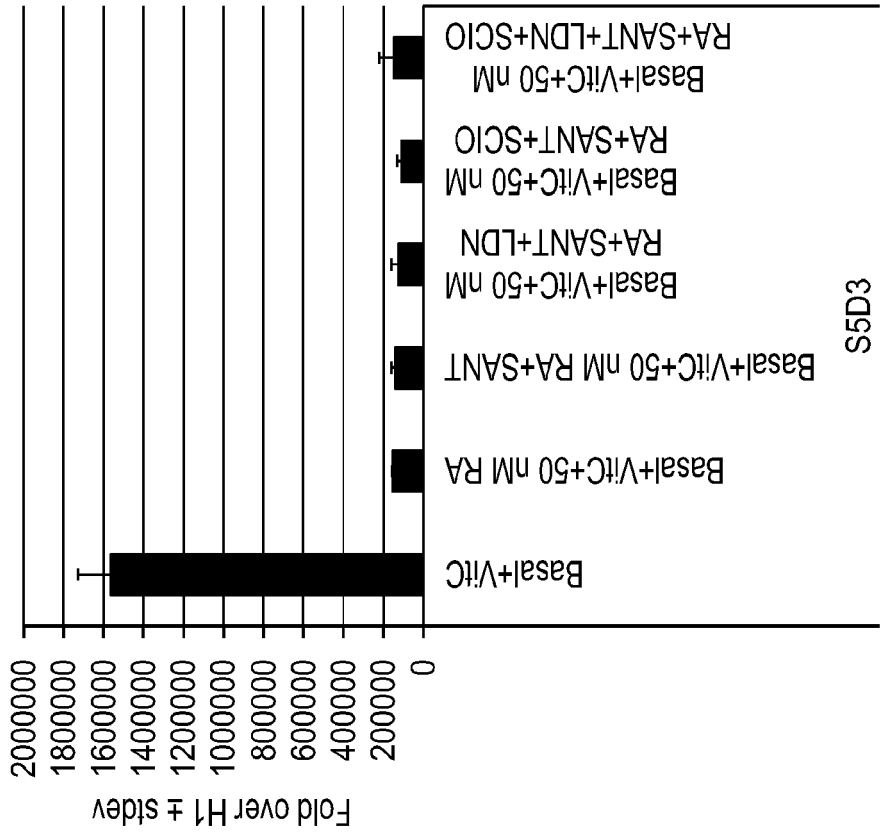


FIG. 22E

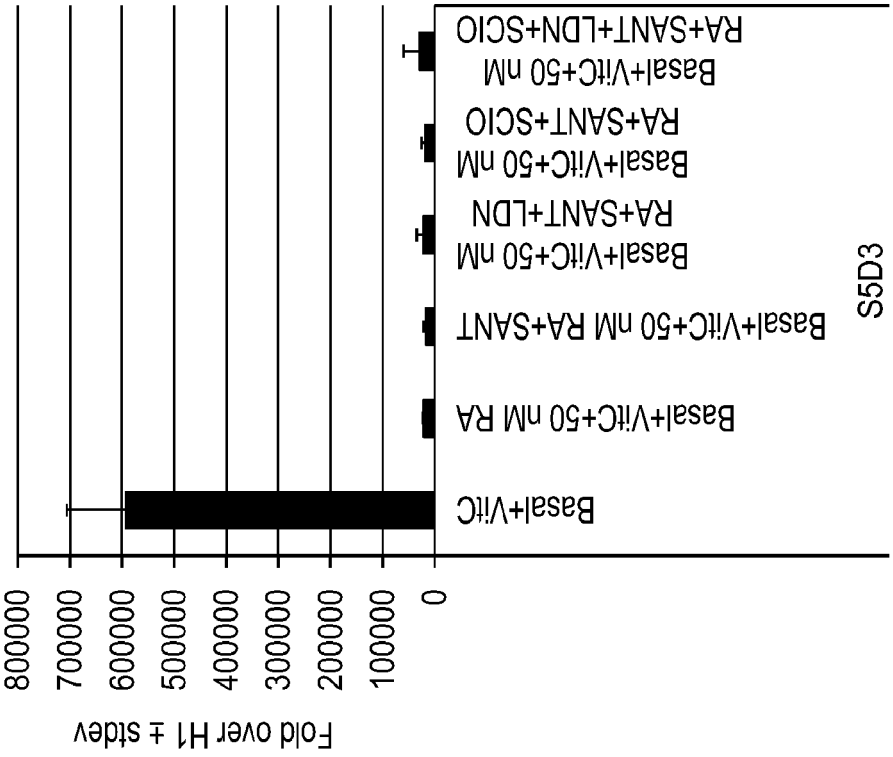


FIG. 22H

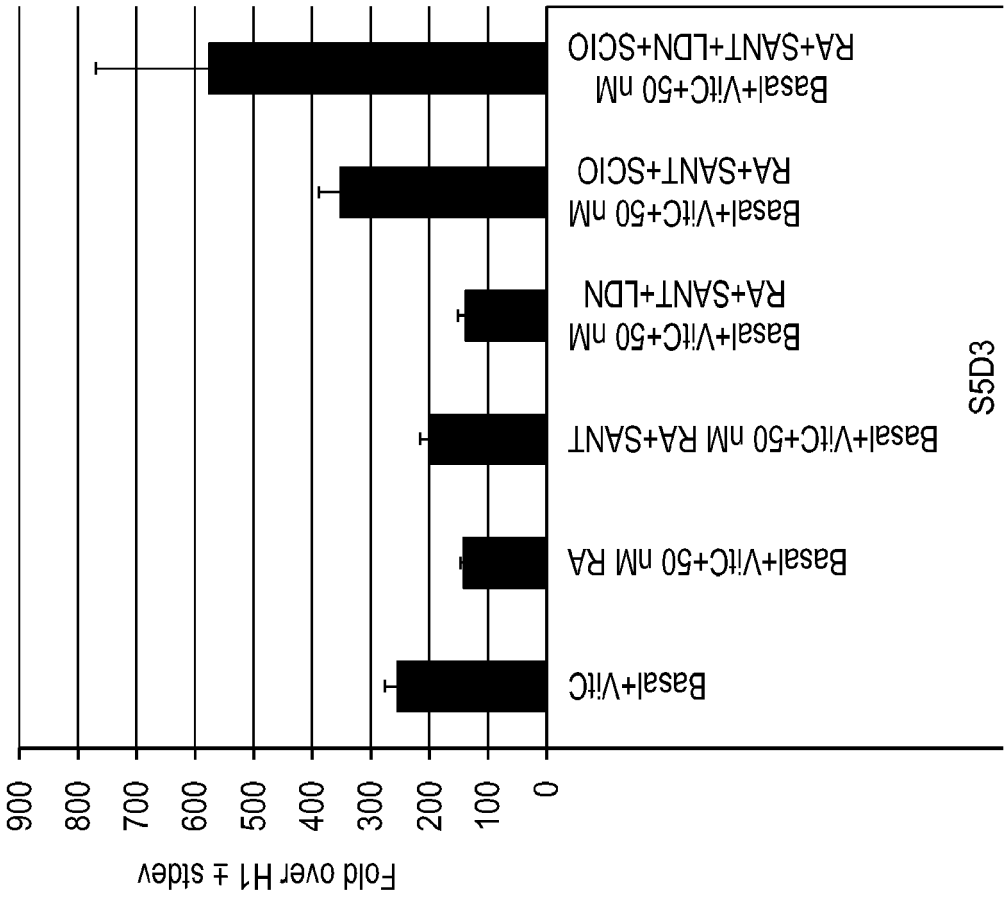


FIG. 22G

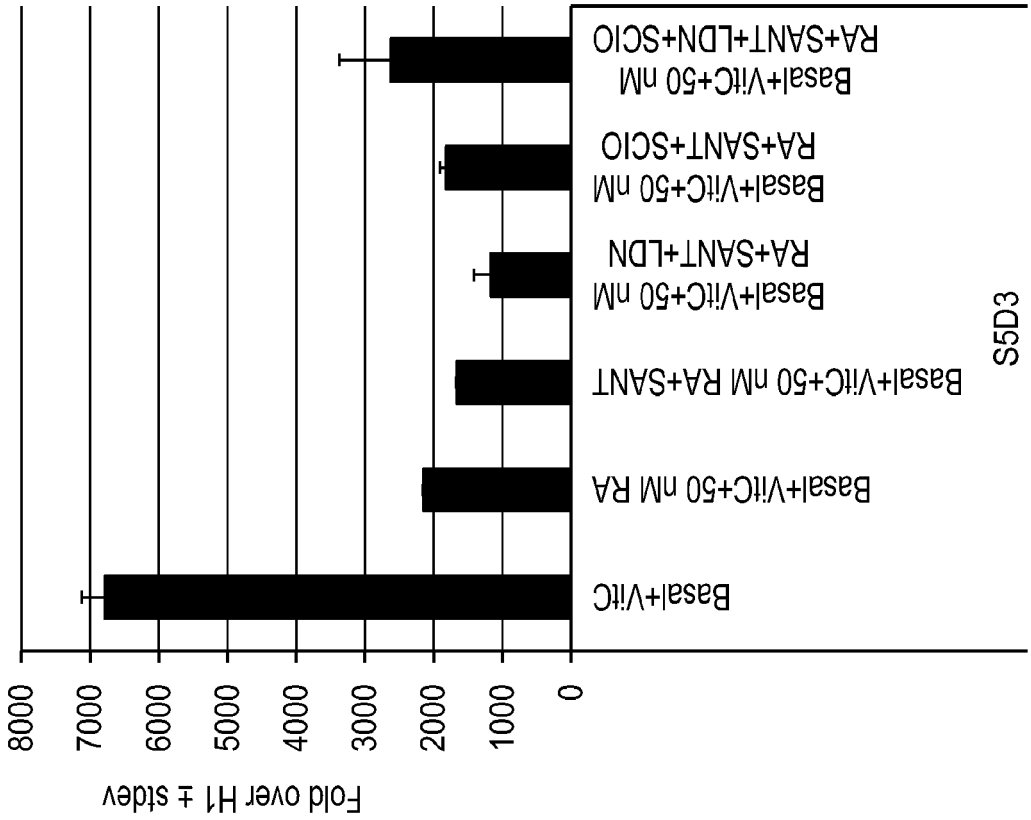


FIG. 22J

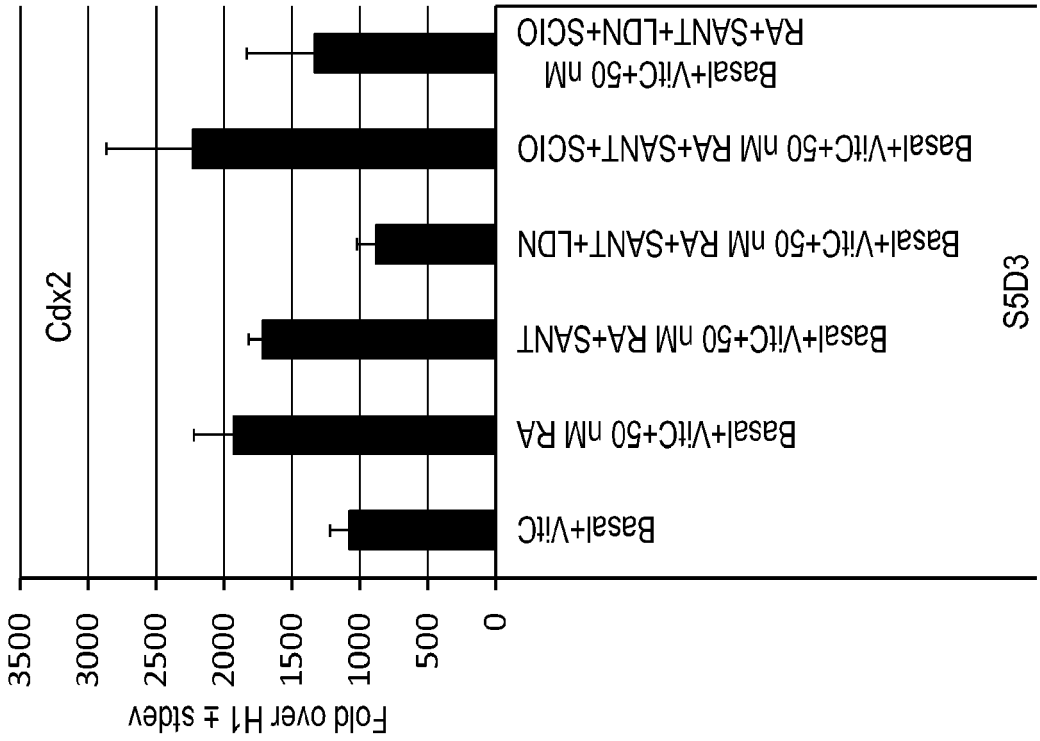


FIG. 22I

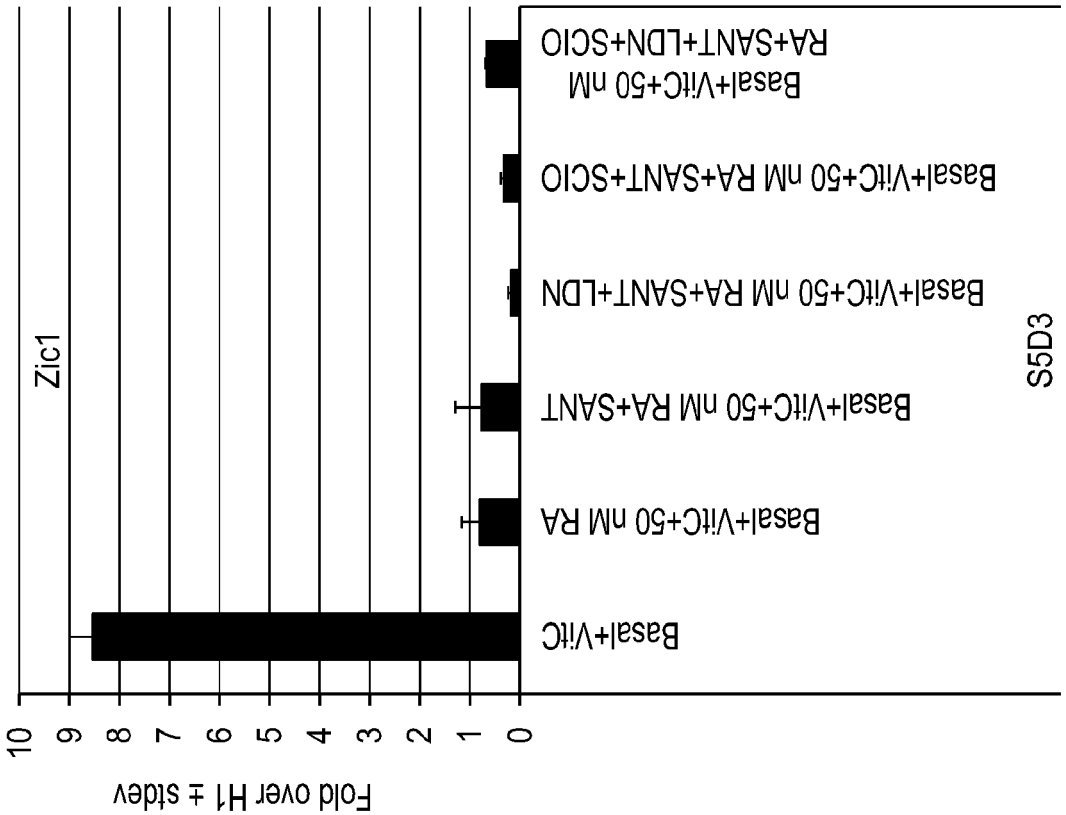


FIG. 22L

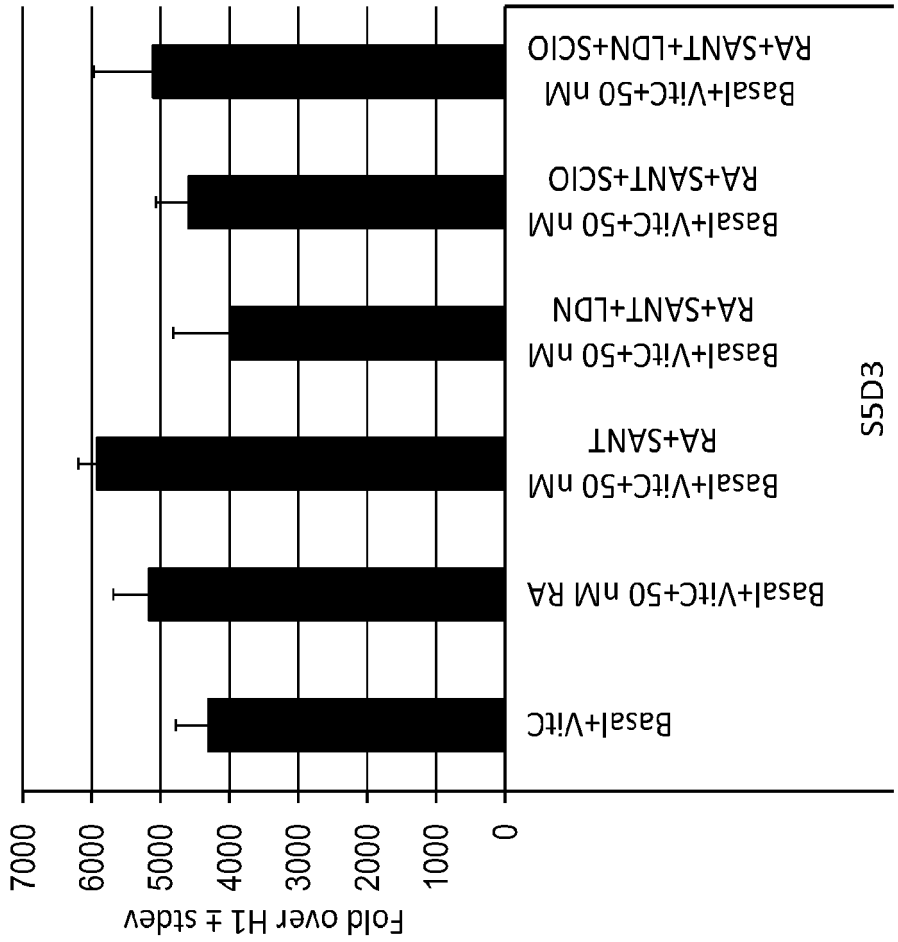


FIG. 22K

