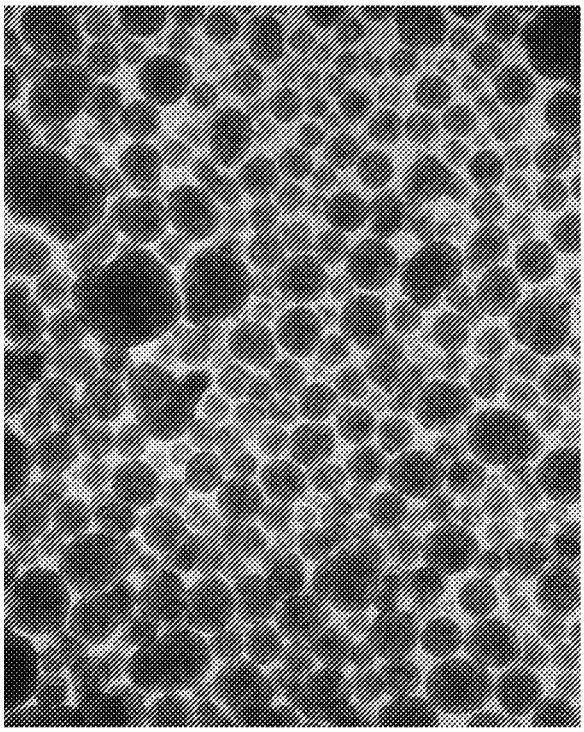
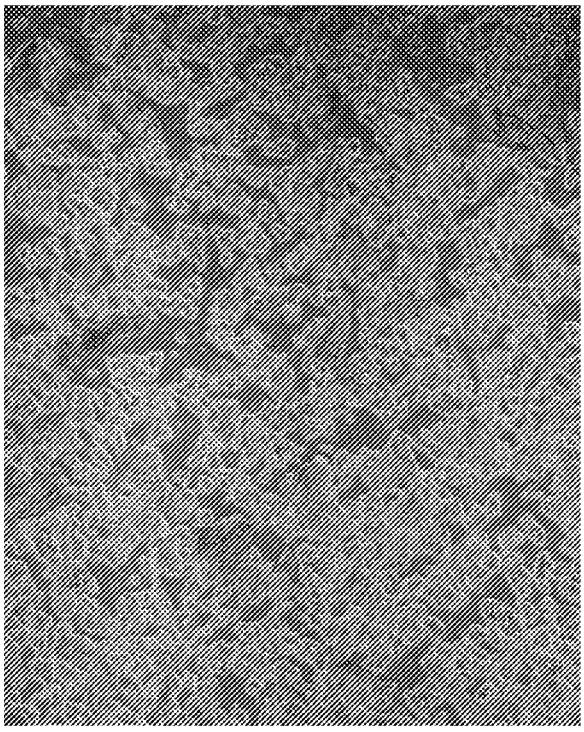
Figure 1a



24 hours in non-adherent static culutre



Immediately after lifting

Figure 1b

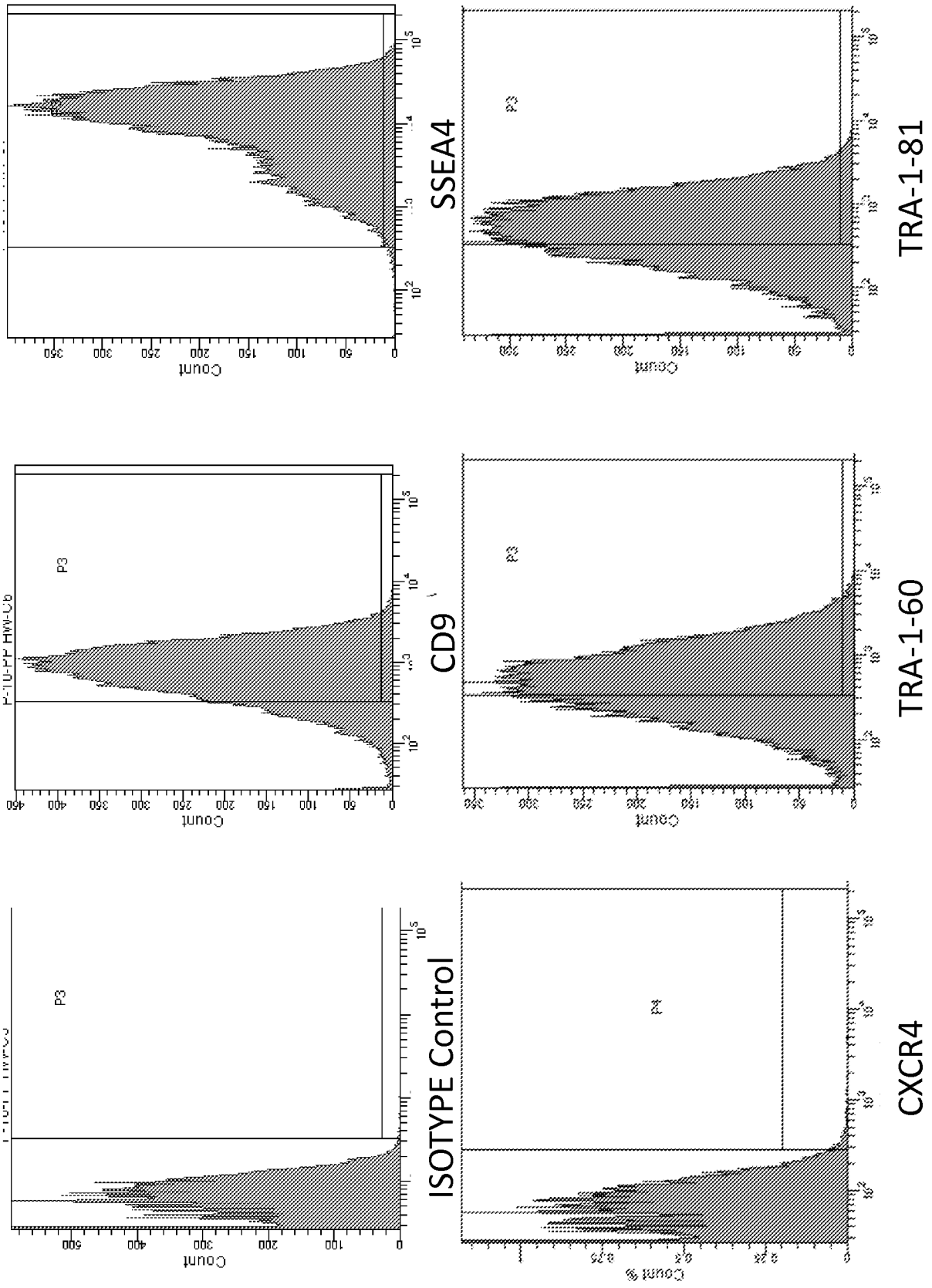

CXCR4
ISOTYPE Control
CD9
TRA-1-60
SSEA4
TRA-1-81
P3
P4
Count
Count %

Figure 1c

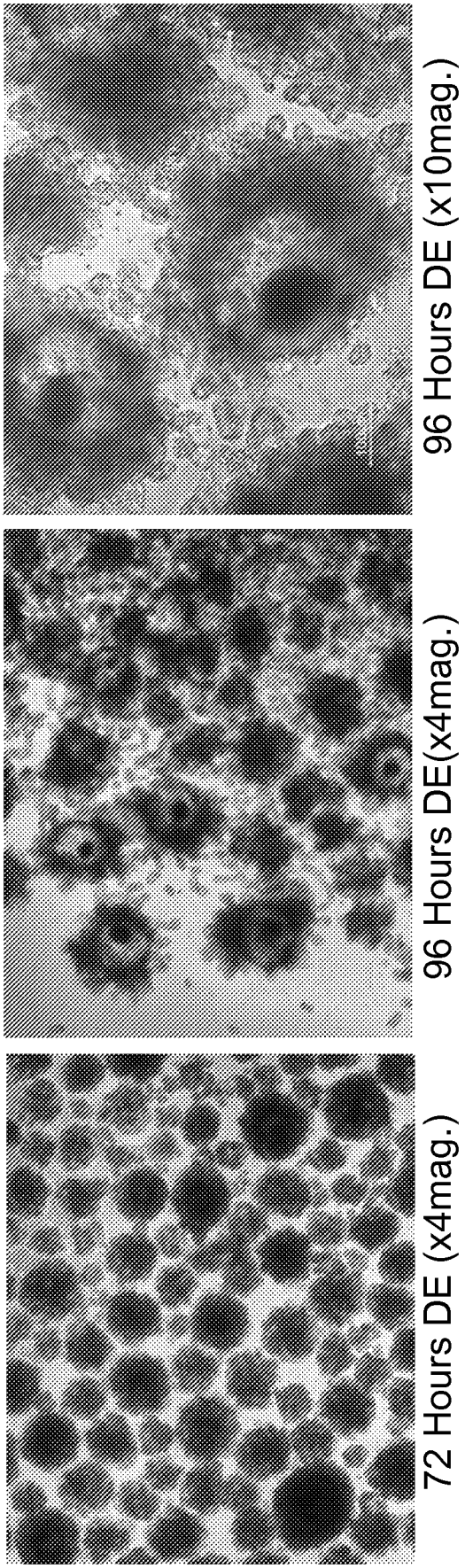
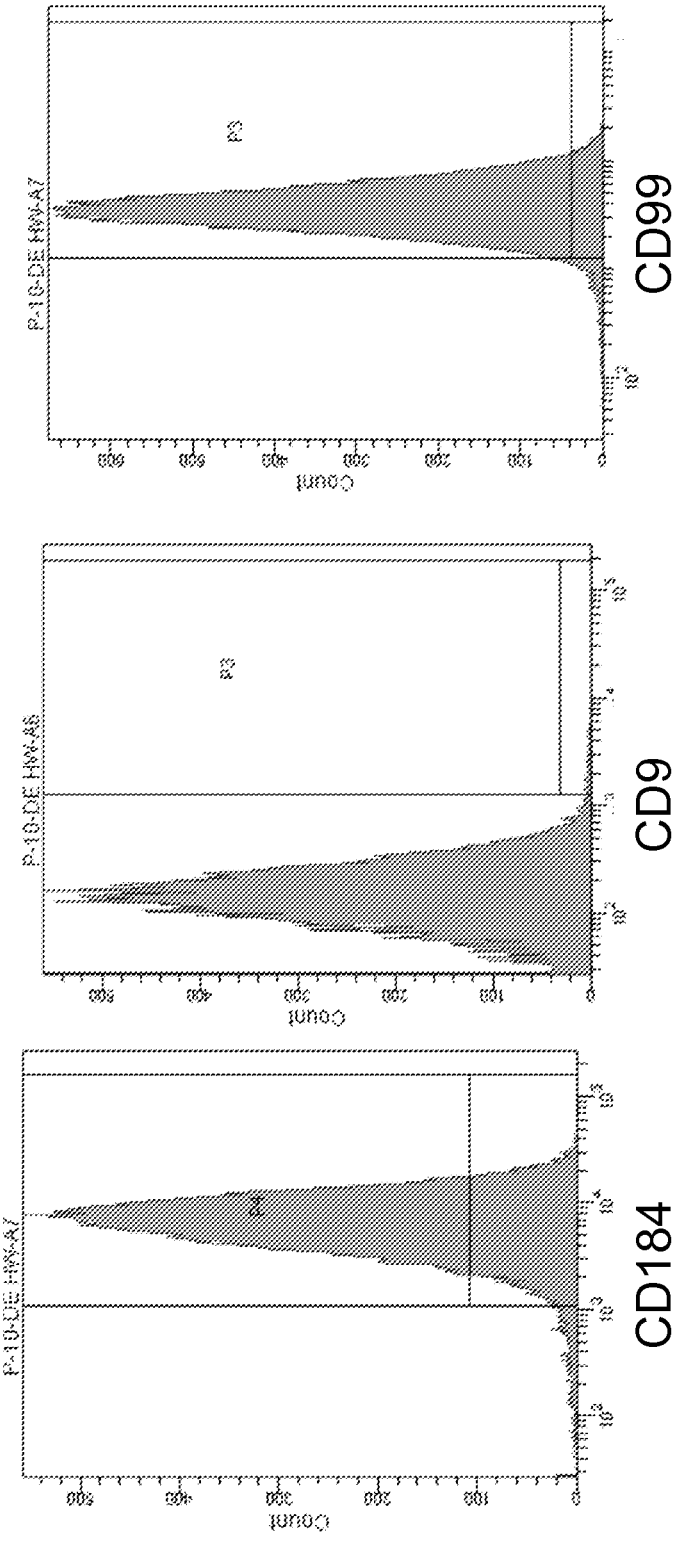


Figure 1d



Marker	CD184	CD9	CD99
% Cells Positive	**97.20%**	**0.50%**	**97.30%**

Figure 1e

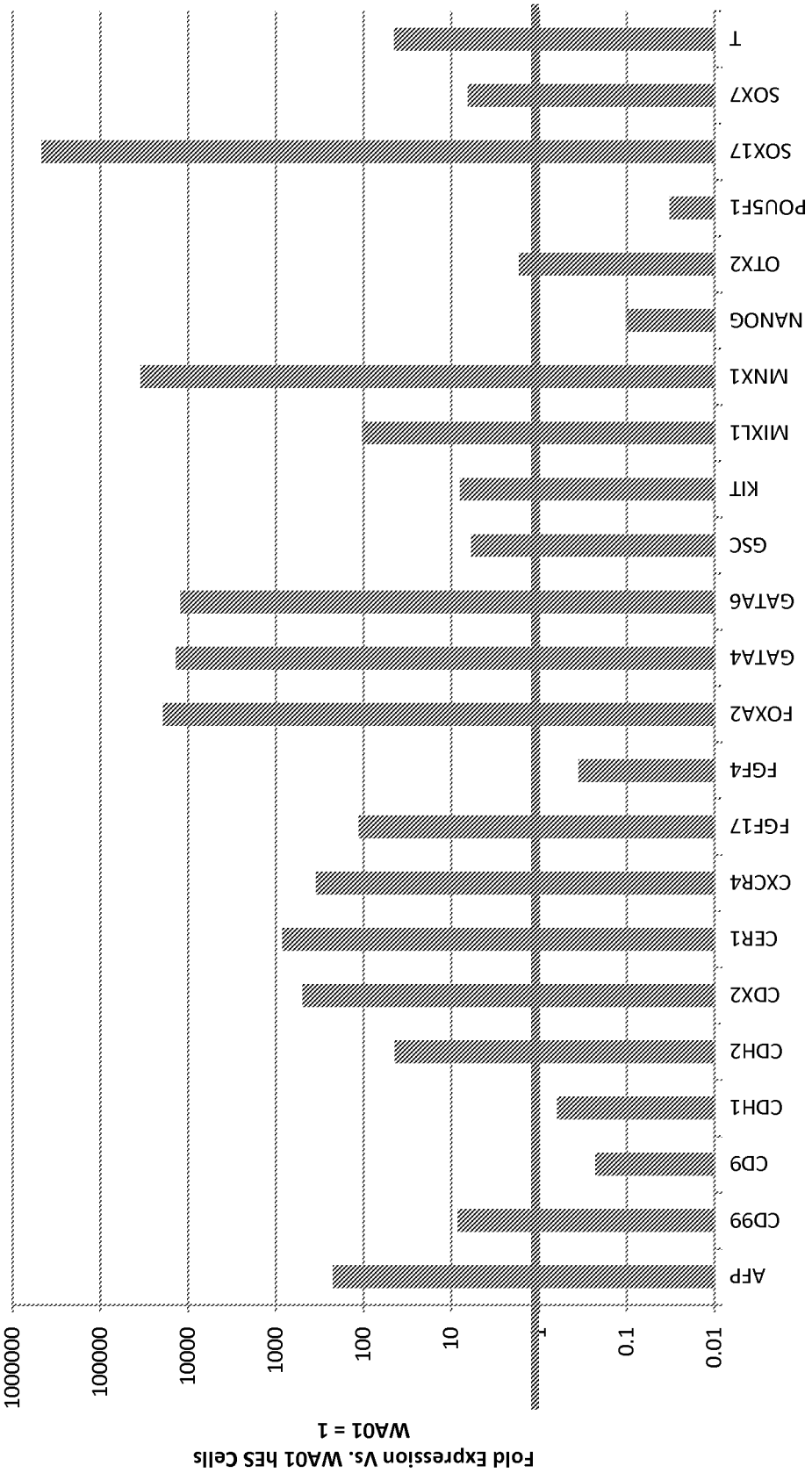

Fold Expression Vs. WA01 hES Cells
WA01 = 1
1000000
100000
10000
1000
100
10
1
0.1
0.01
AFP
CD99
CD9
CDH1
CDH2
CDX2
CER1
CXCR4
FGF17
FGF4
FOXA2
GATA4
GATA6
GSC
KIT
MIXL1
MNX1
NANOG
OTX2
POU5F1
SOX17
SOX7
T

Figure 1f

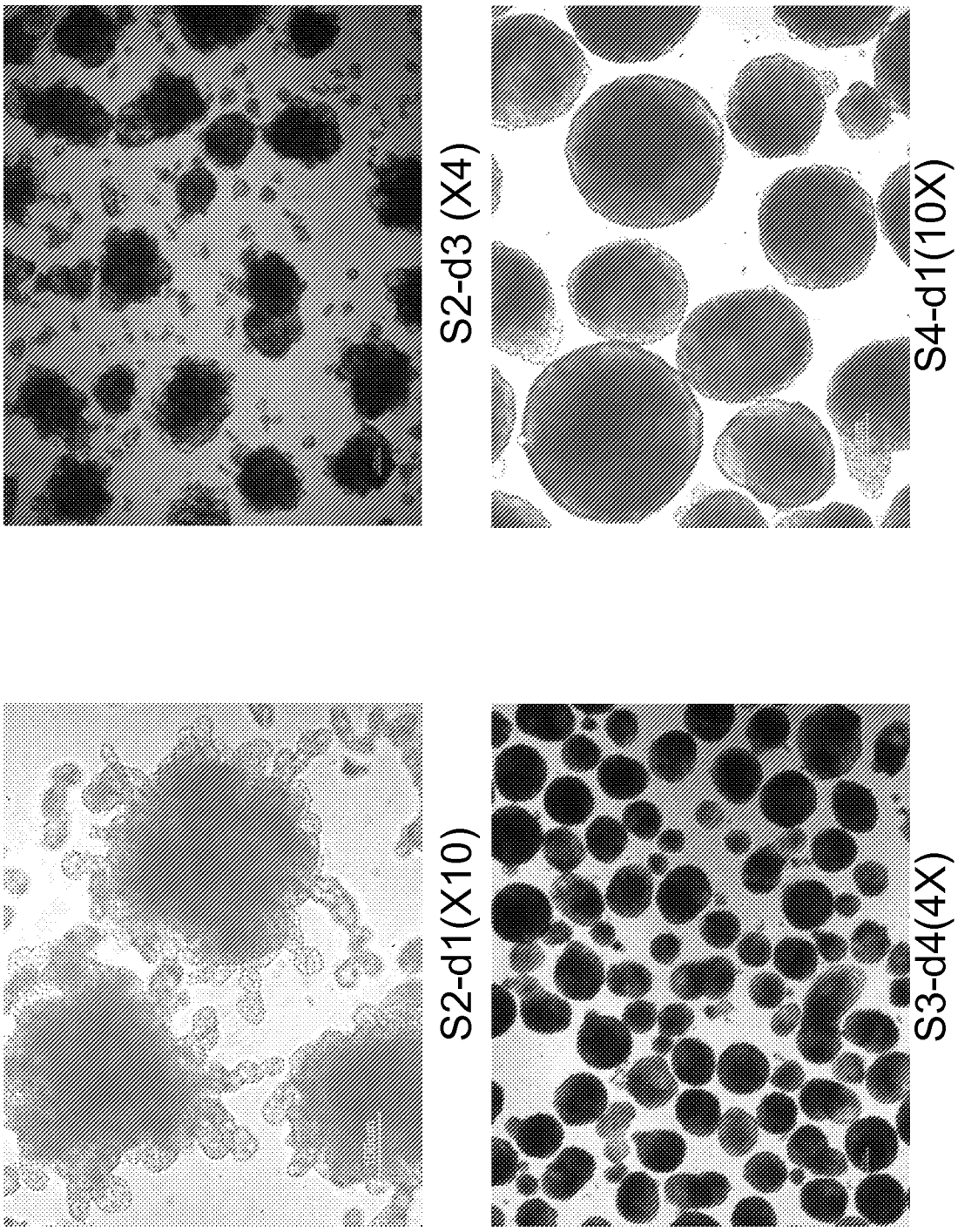


Figure 2a

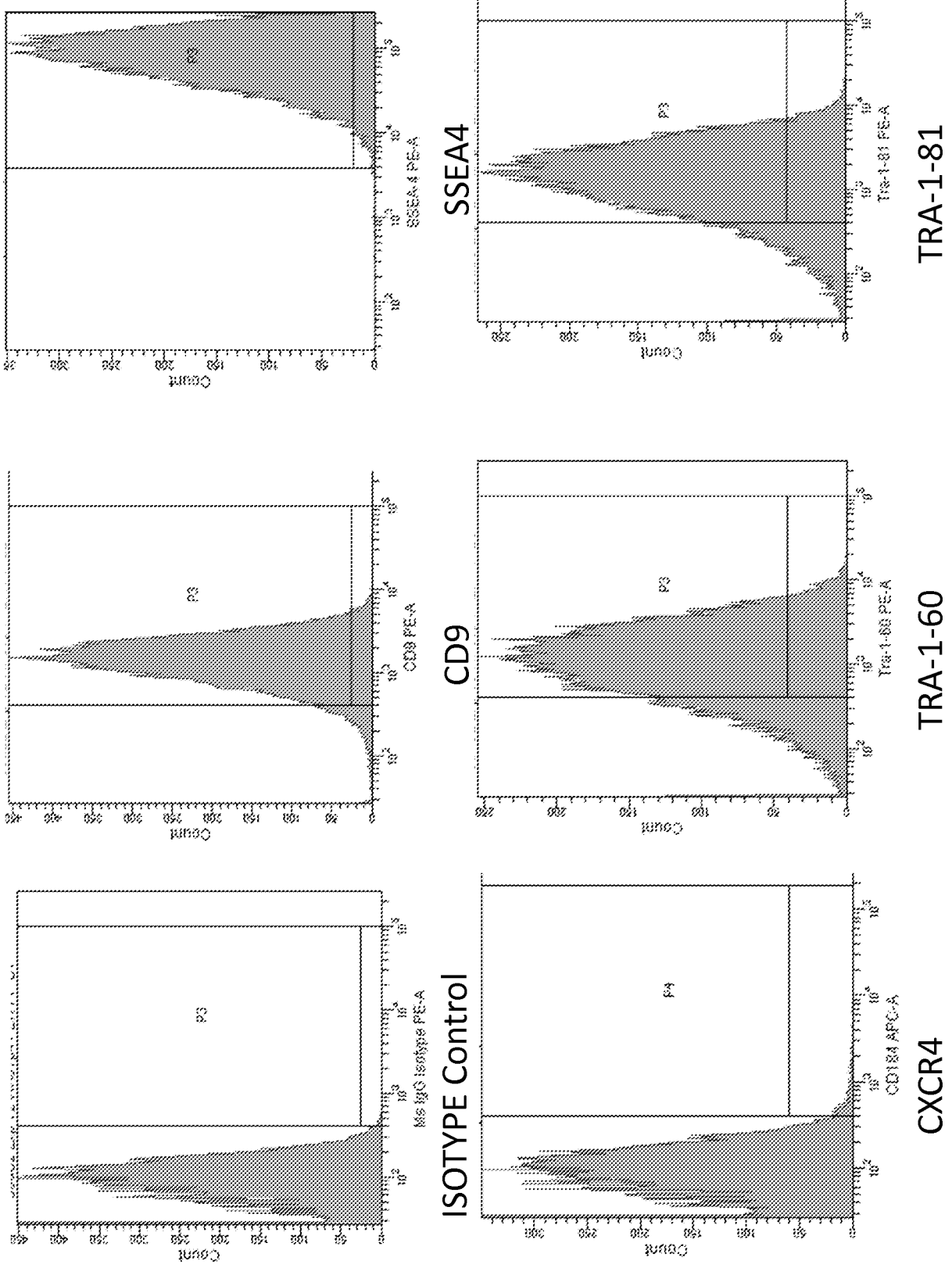

ISOTYPE Control
CD9
SSEA4
TRA-1-60
TRA-1-81
CXCR4
Count
Ms IgG Isotype PE-A
CD9 PE-A
SSEA-4 PE-A
Tra-1-60 PE-A
Tra-1-81 PE-A
CD184 APC-A
P3
P4

Figure 2b

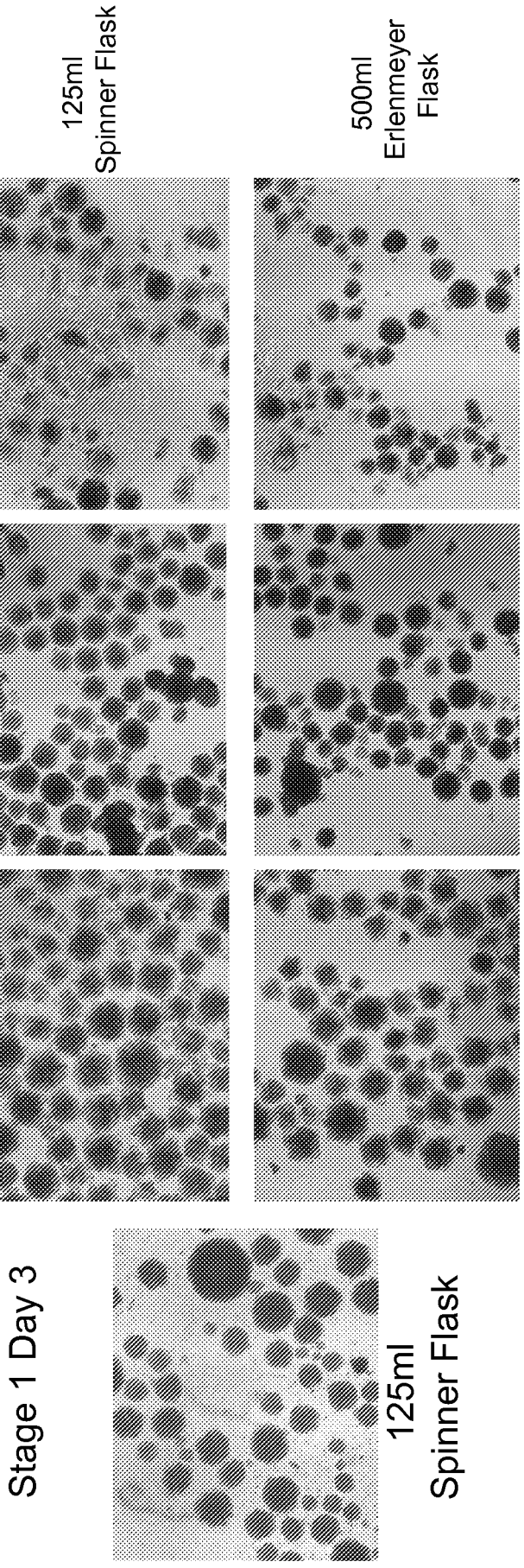

125ml Spinner Flask
500ml Erlenmeyer Flask
Stage 4 Day 3
Stage 4 Day 1
Stage 2 Day 2
Stage 1 Day 3
125ml Spinner Flask

Figure 2c

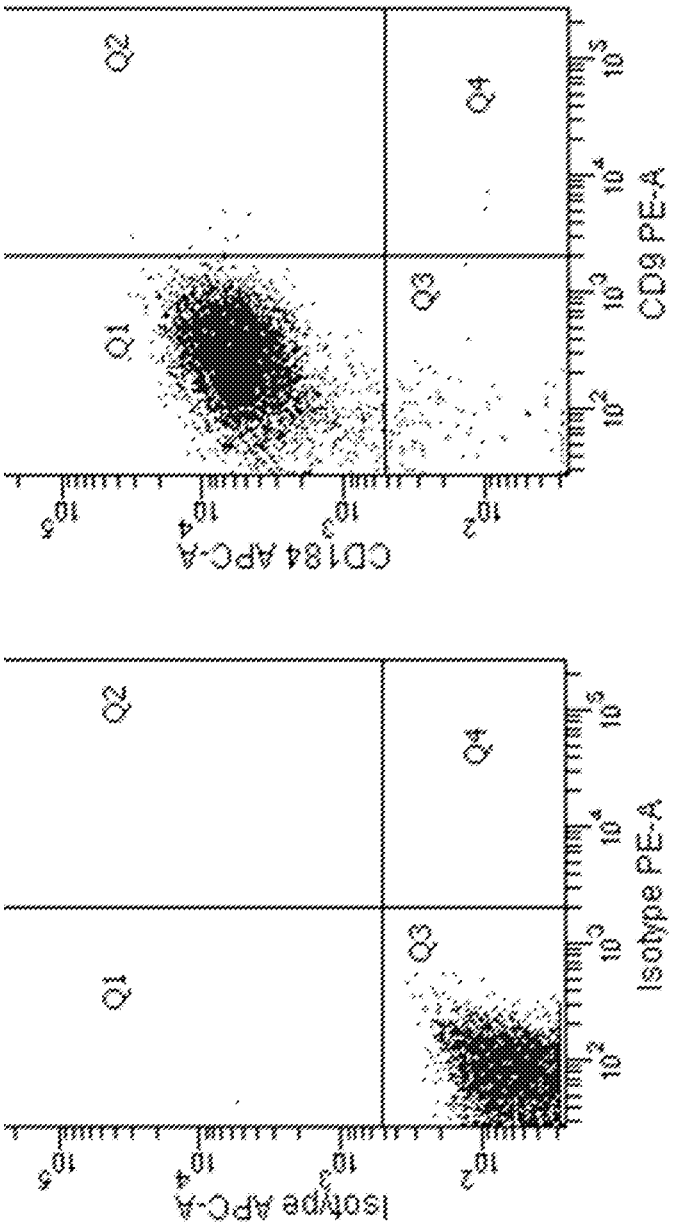


Figure 2d

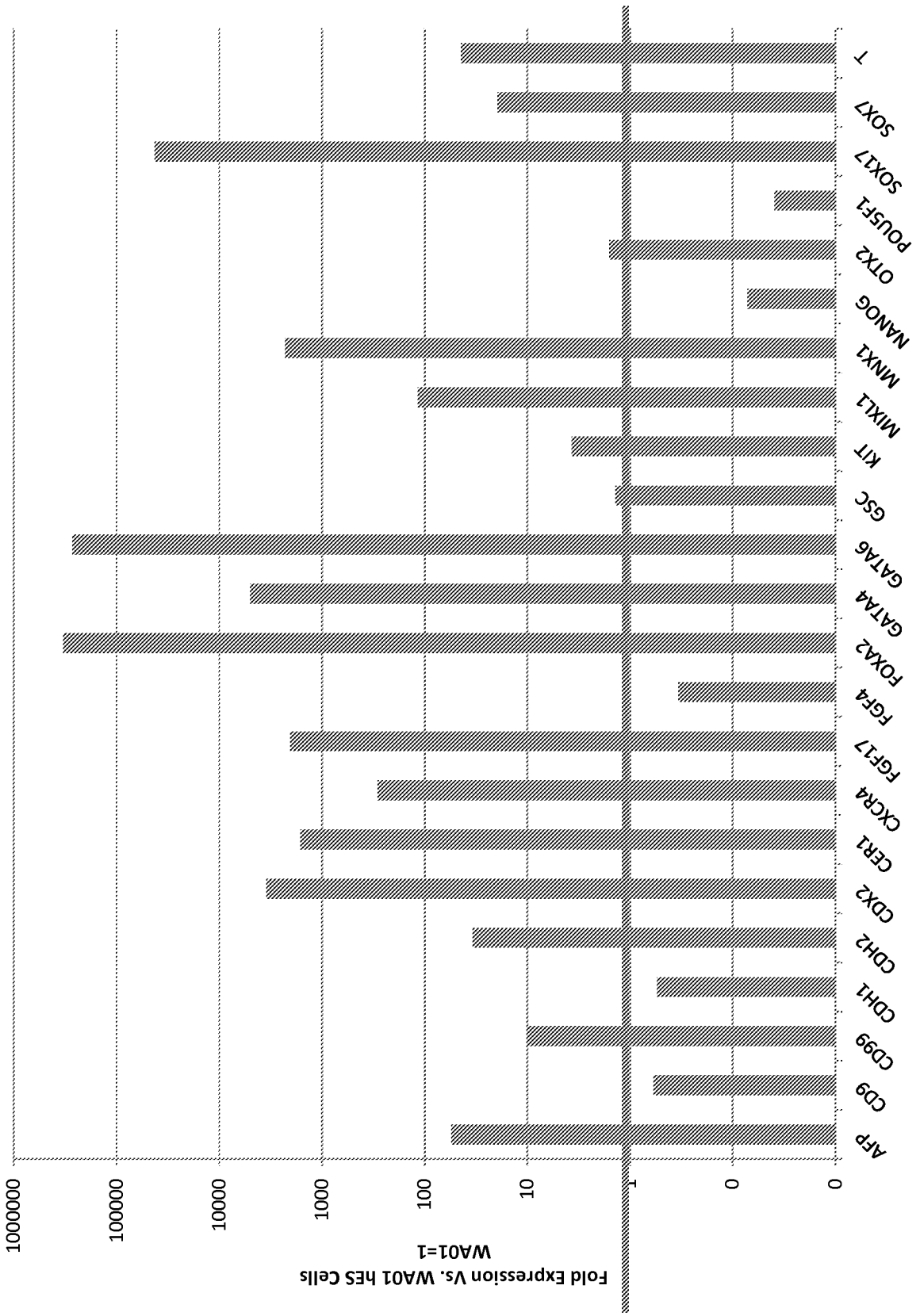

Fold Expression Vs. WA01 hES Cells
WA01=1
1000000
100000
10000
1000
100
10
1
0
0
AFP
CD9
CD99
CDH1
CDH2
CDX2
CER1
CXCR4
FGF17
FGF4
FOXA2
GATA4
GATA6
GSC
KIT
MIXL1
MNX1
NANOG
OTX2
POU5F1
SOX17
SOX7
T

Figure 2e

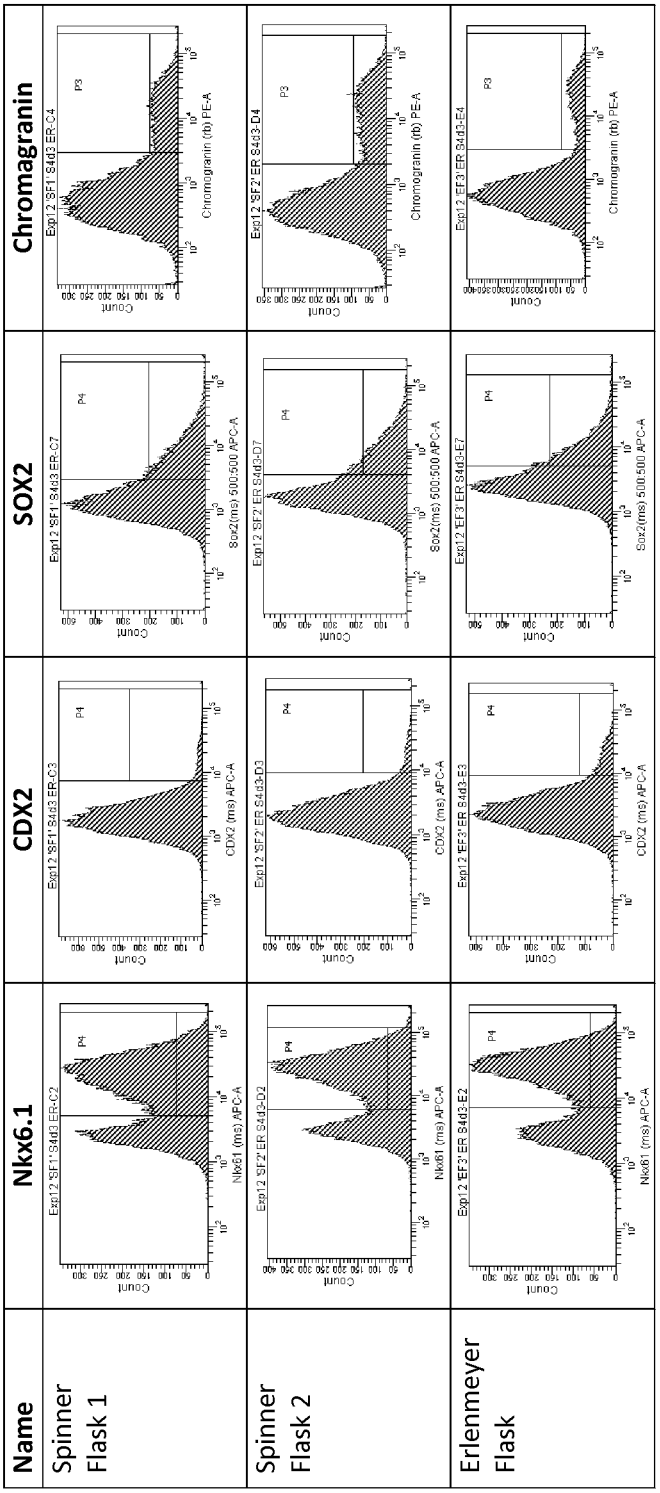

Name
Nkx6.1
CDX2
SOX2
Chromagranin
Spinner Flask 1
Spinner Flask 2
Erlenmeyer Flask

Figure 2f

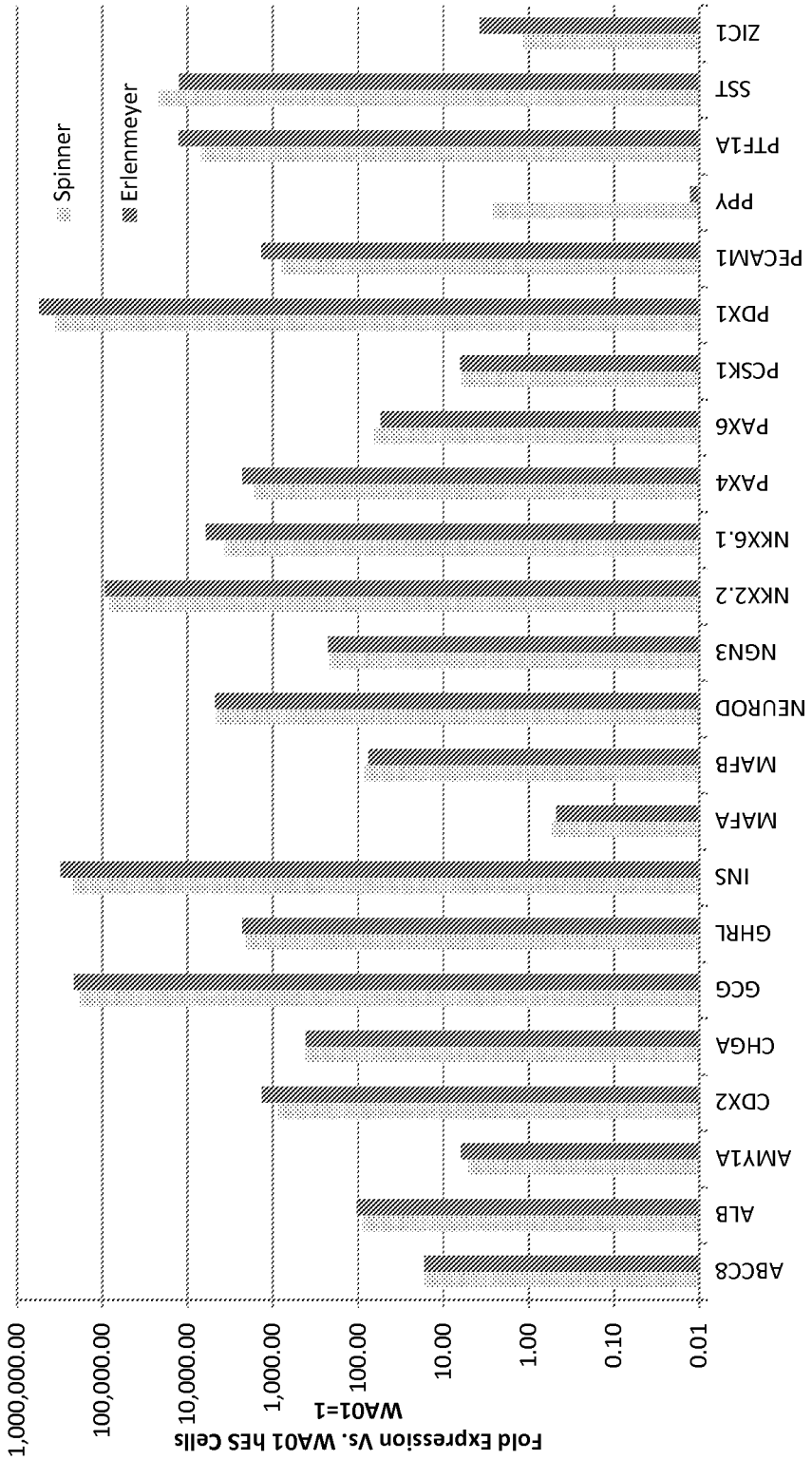

Fold Expression Vs. WA01 hES Cells
WA01=1
1,000,000.00
100,000.00
10,000.00
1,000.00
100.00
10.00
1.00
0.10
0.01
Spinner
Erlenmeyer
ABCC8
ALB
AMY1A
CDX2
CHGA
GCG
GHRL
INS
MAFA
MAFB
NEUROD
NGN3
NKX2.2
NKX6.1
PAX4
PAX6
PCSK1
PDX1
PECAM1
PPY
PTF1A
SST
ZIC1

Figure 3a

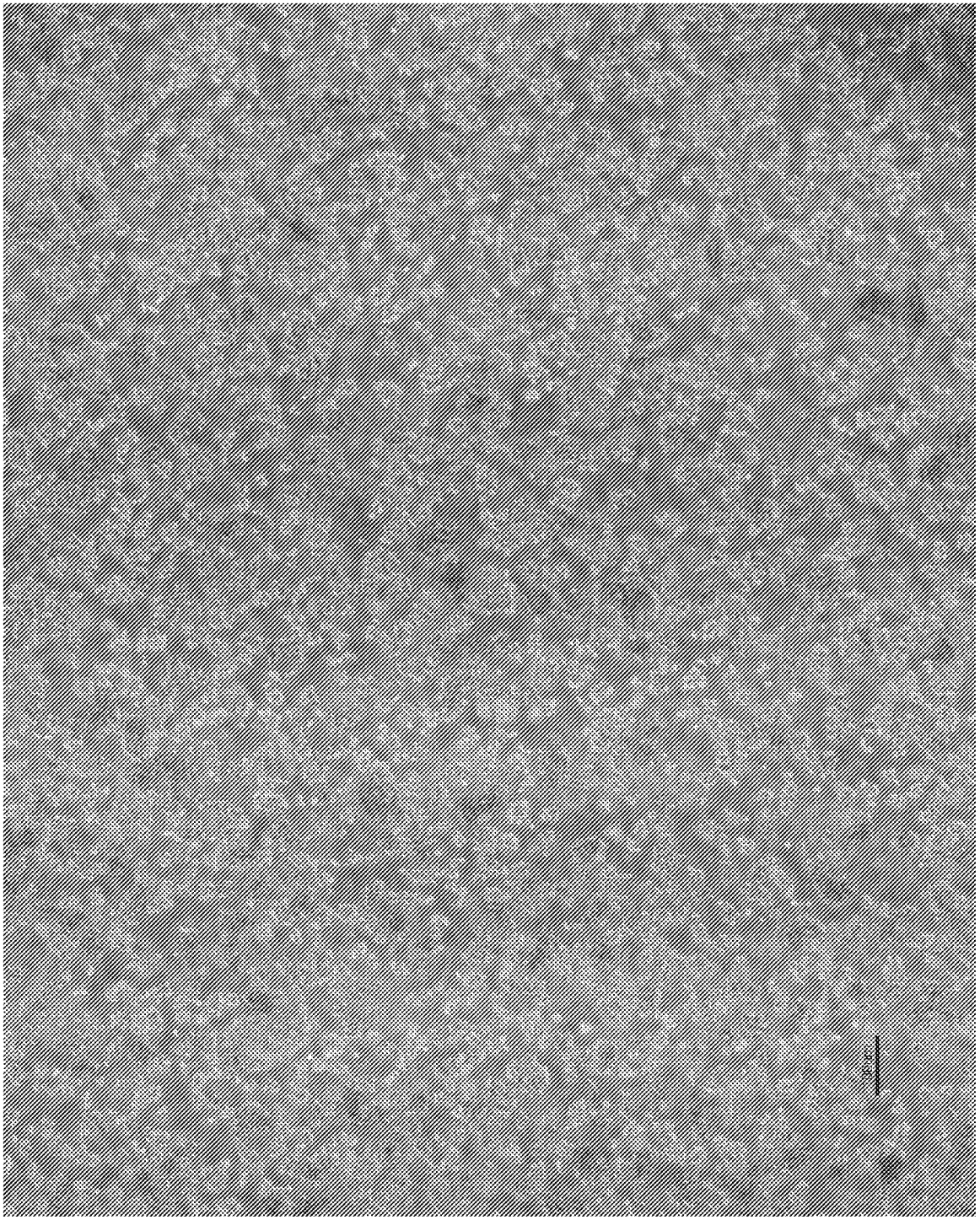


Figure 3b

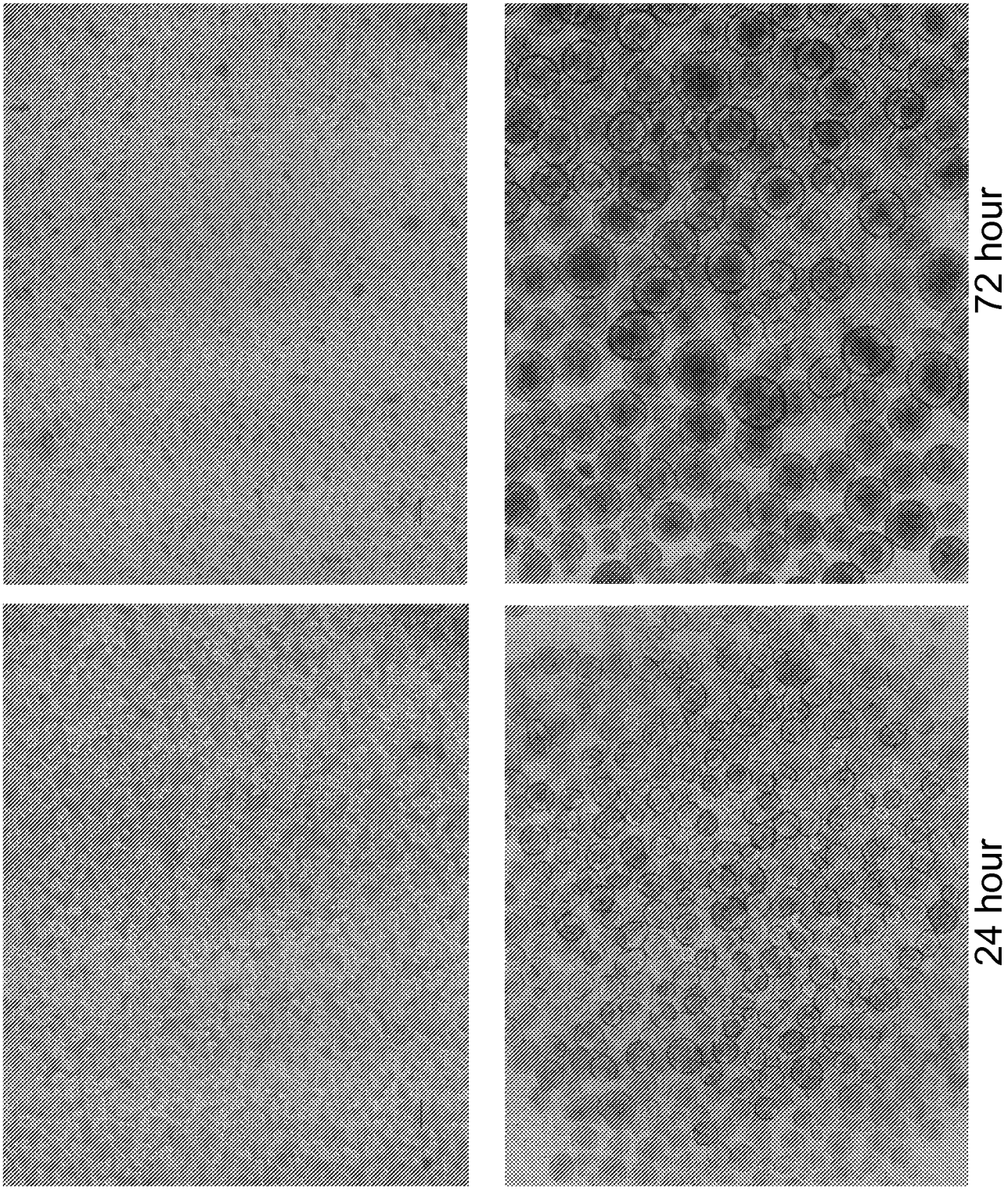


Figure 3c

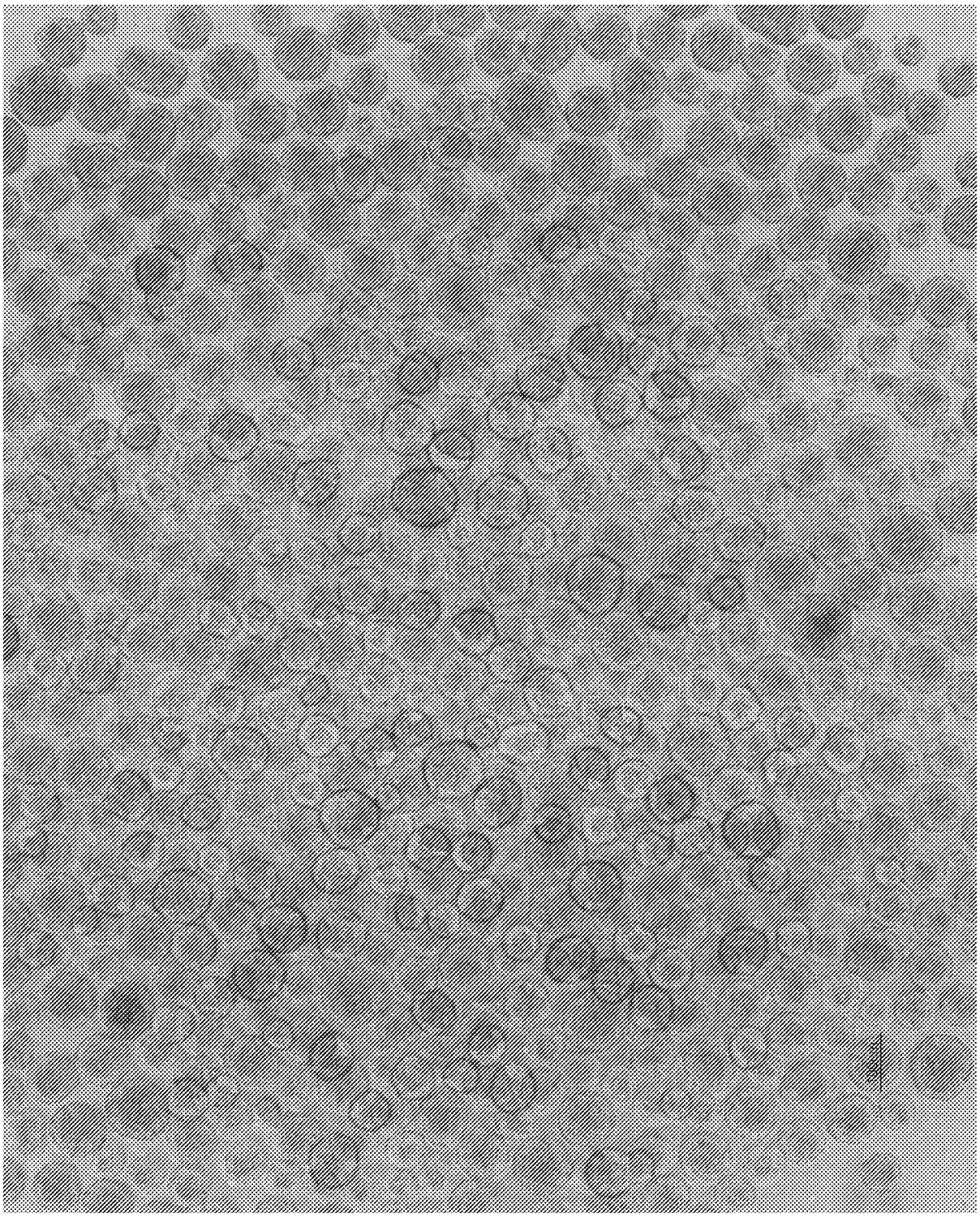


Figure 3d

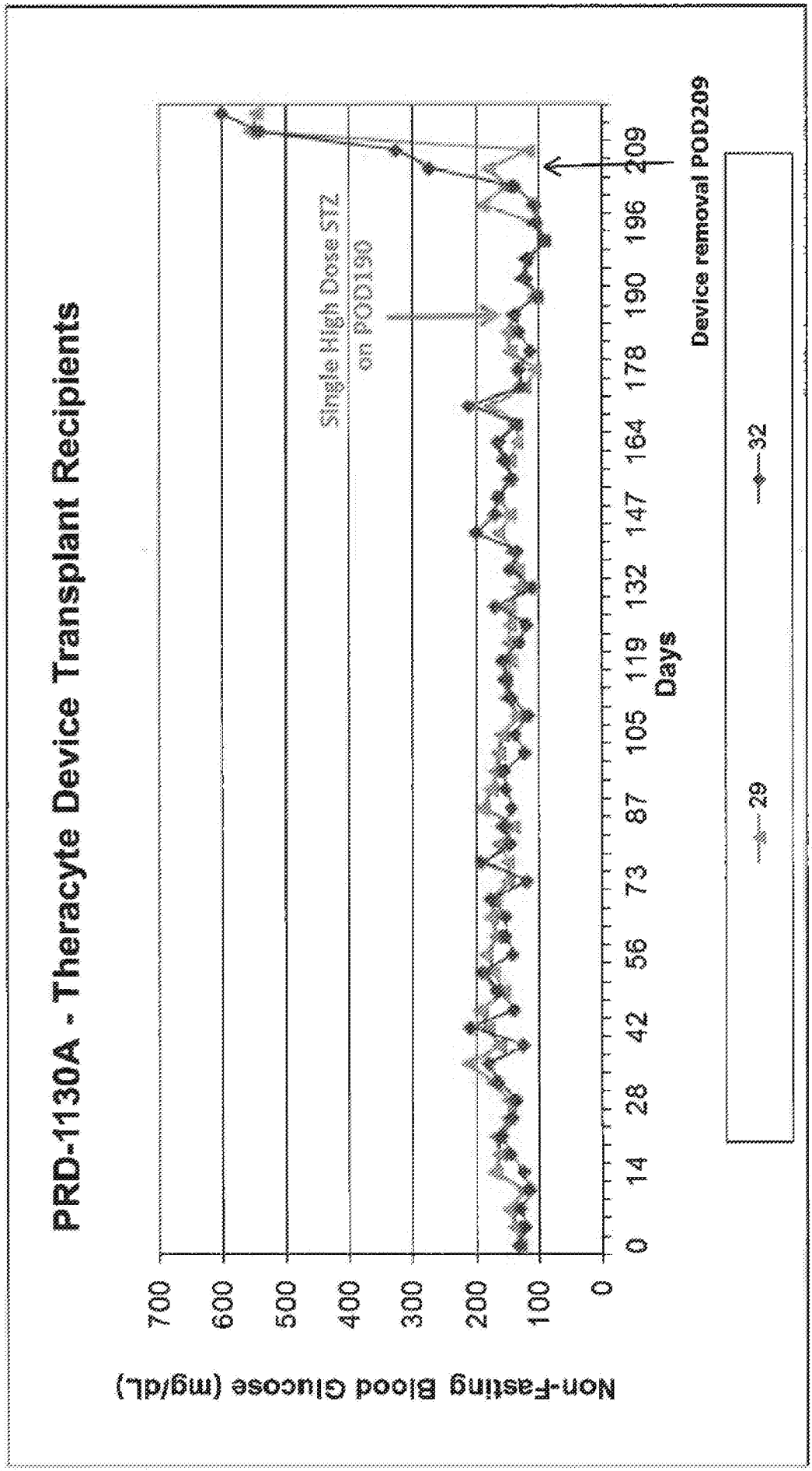

PRD-1130A - Theracyte Device Transplant Recipients
Non-Fasting Blood Glucose (mg/dL)
700
600
500
400
300
200
100
0
0 14 28 42 56 73 87 105 119 132 147 164 178 190 196 209
Days
Single High Dose STZ on POD190
Device removal POD209
29
32

Figure 4a

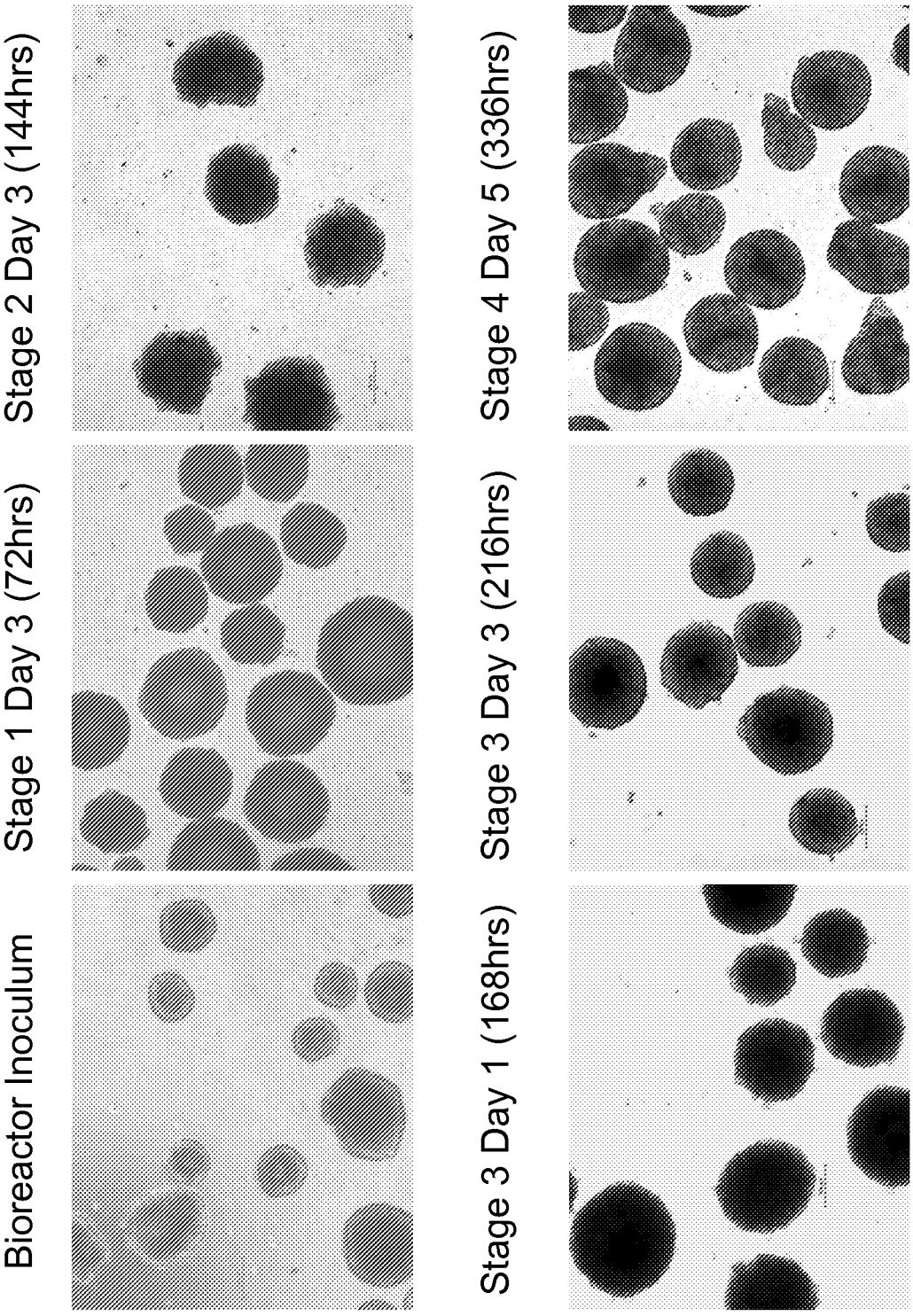

Bioreactor Inoculum
Stage 1 Day 3 (72hrs)
Stage 2 Day 3 (144hrs)
Stage 3 Day 1 (168hrs)
Stage 3 Day 3 (216hrs)
Stage 4 Day 5 (336hrs)

Figure 4b

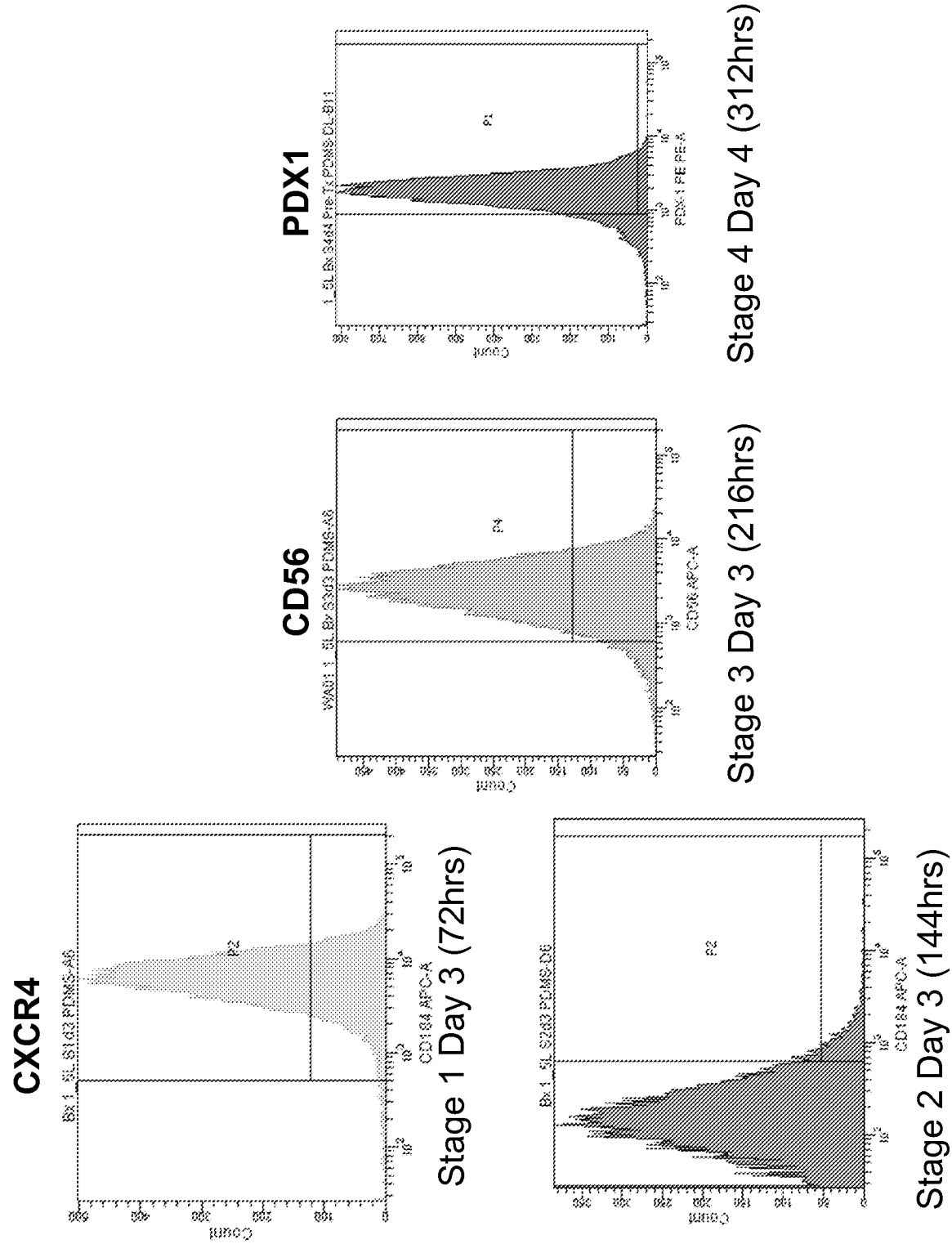

CXCR4
CD56
PDX1
Stage 1 Day 3 (72hrs)
Stage 2 Day 3 (144hrs)
Stage 3 Day 3 (216hrs)
Stage 4 Day 4 (312hrs)
Count
CD184 APC-A
CD56 APC-A
PDX-1 PE PE-A
P1
P2
P4

Figure 5a

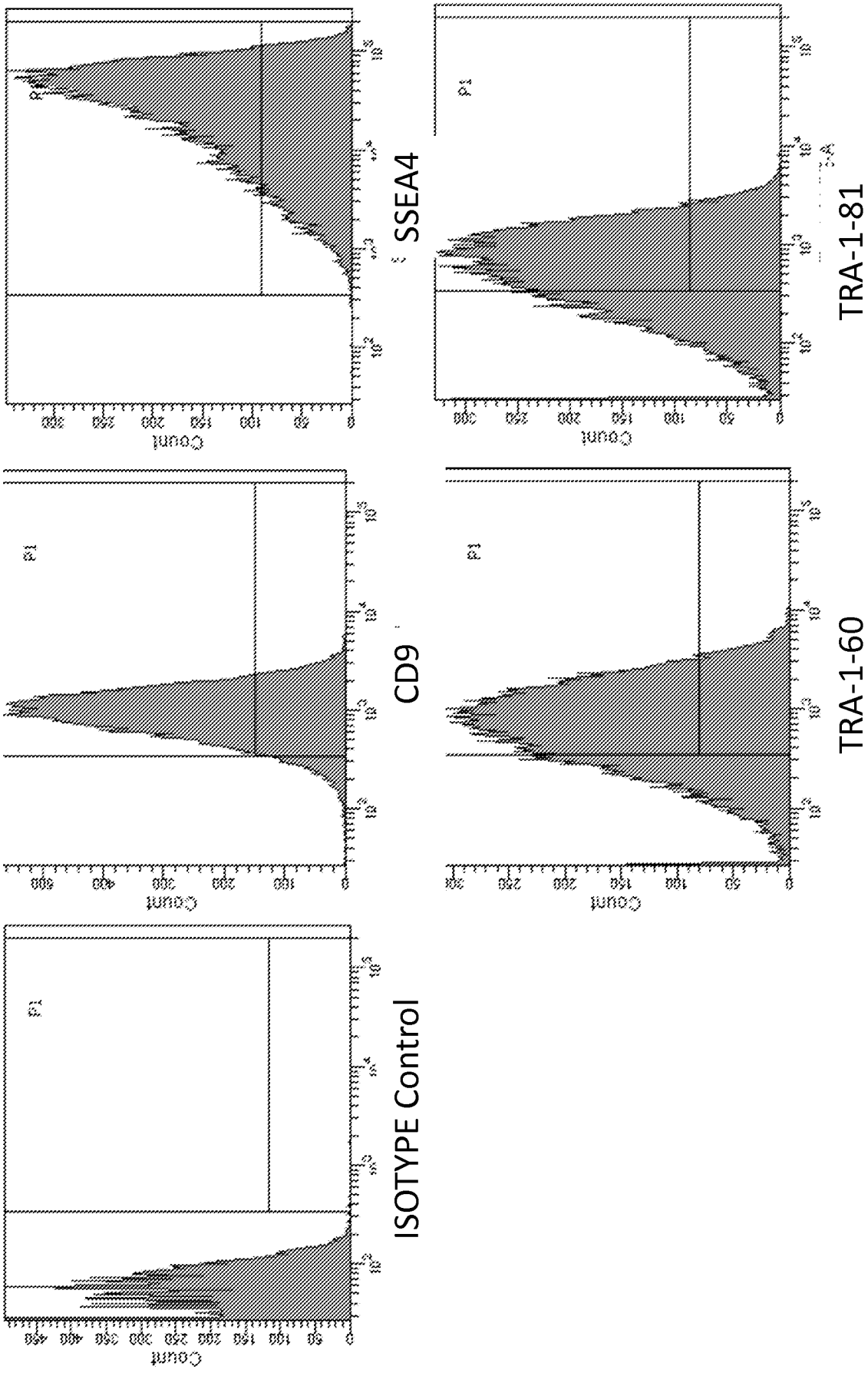


Figure 5b

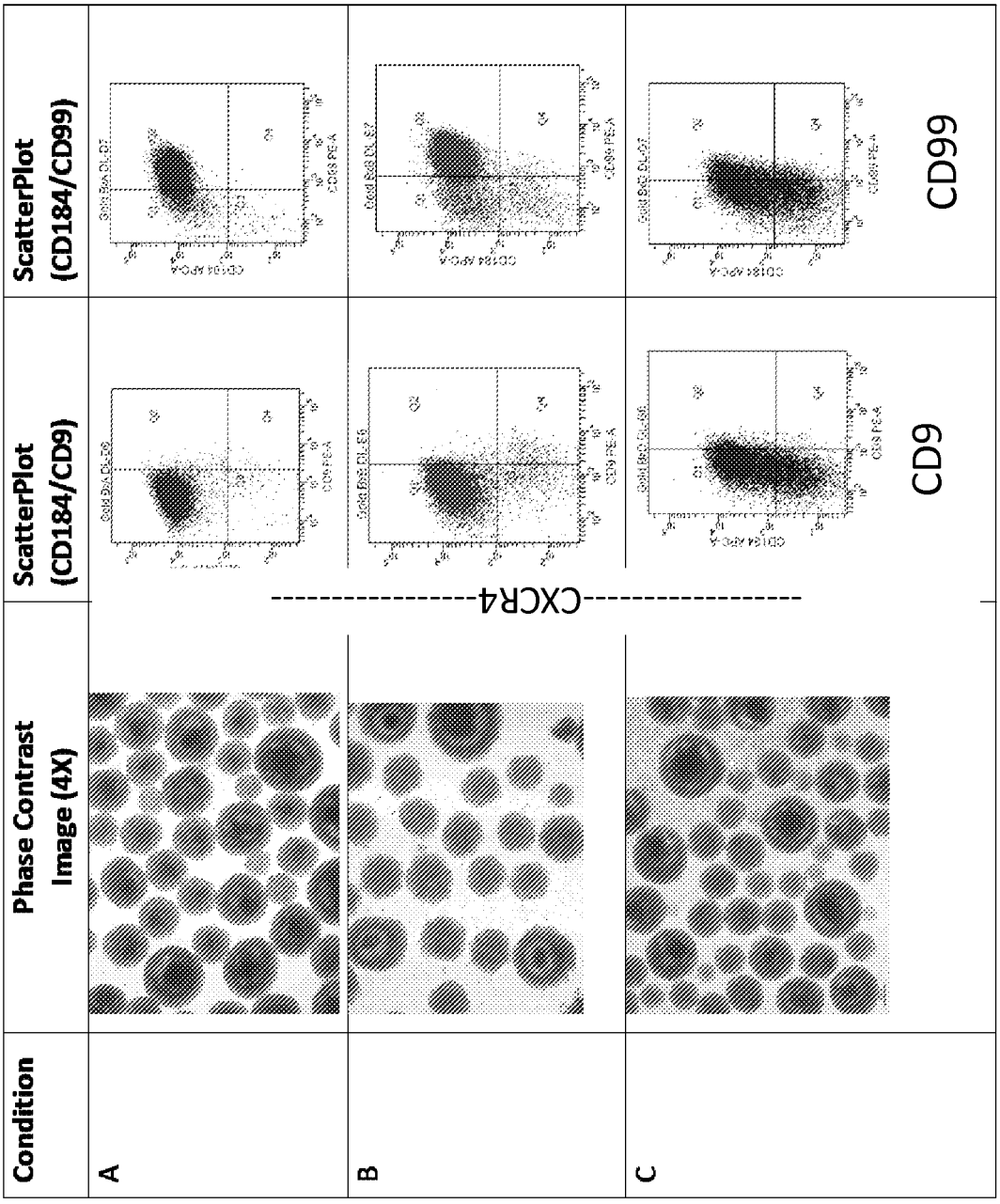

Condition
Phase Contrast Image (4X)
ScatterPlot (CD184/CD9)
ScatterPlot (CD184/CD99)
A
B
C
CXCR4
CD9
CD99

Figure 5c

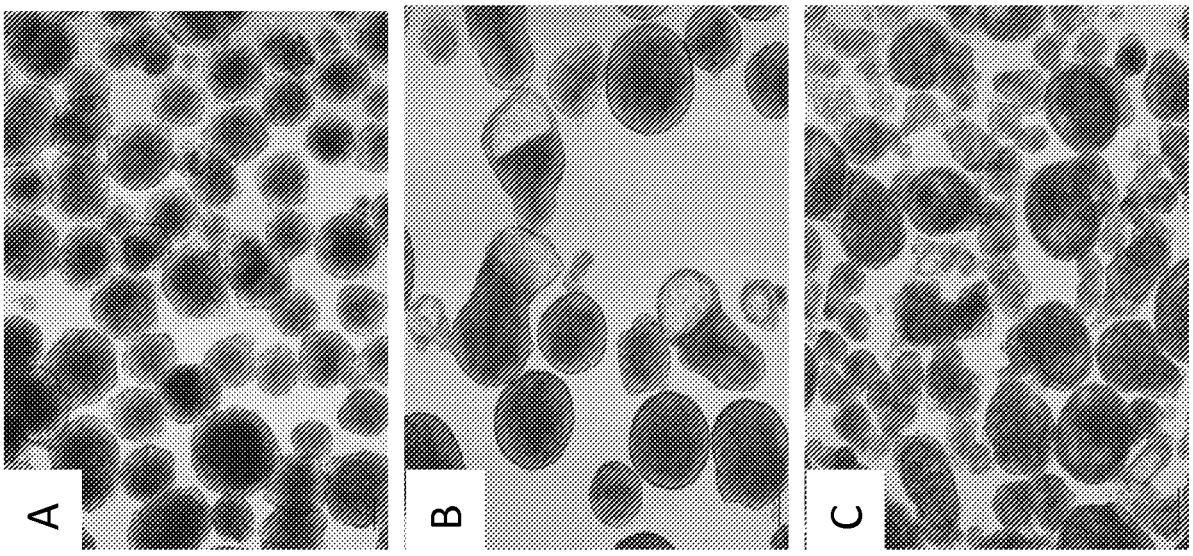


Figure 5d

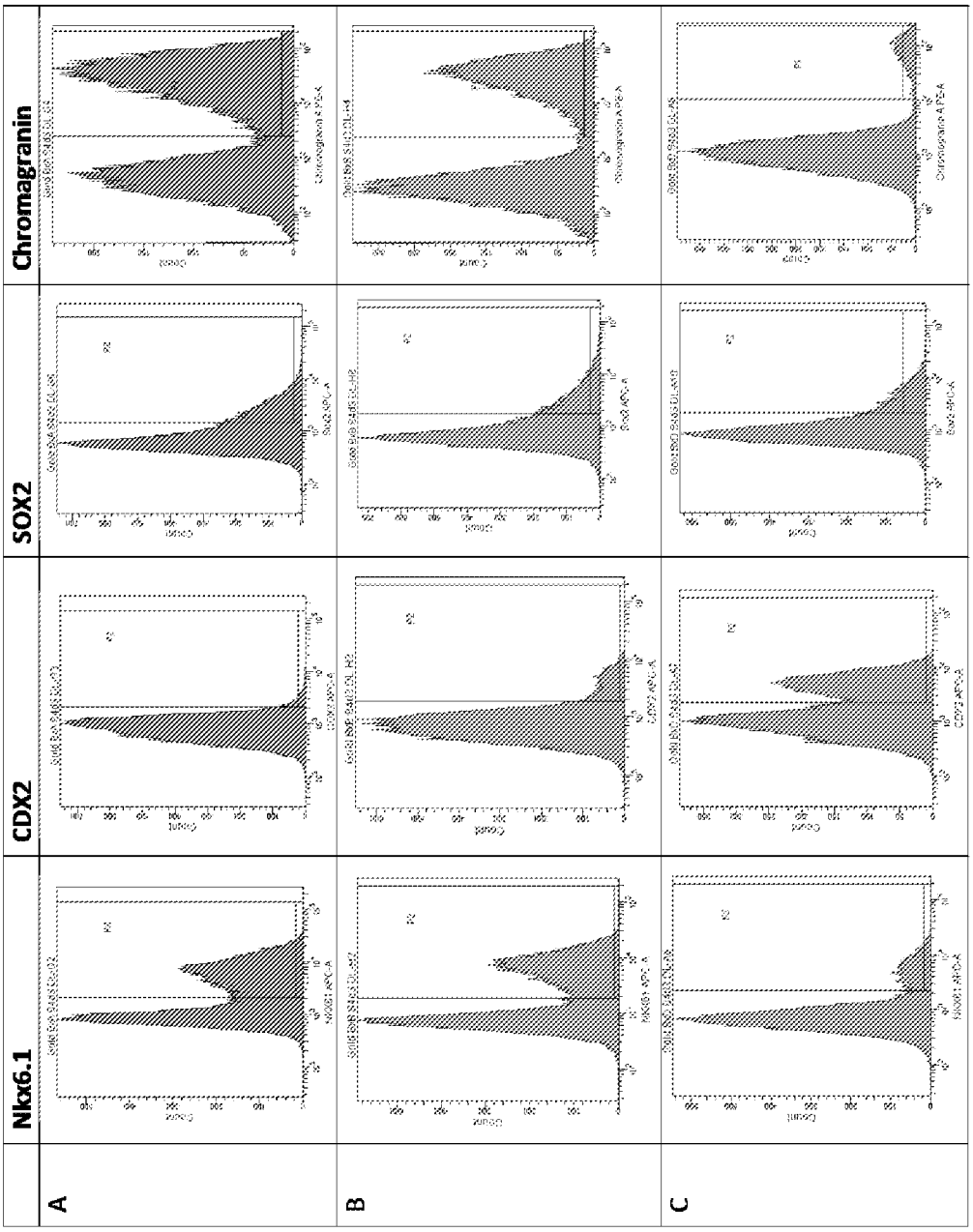


Figure 5e

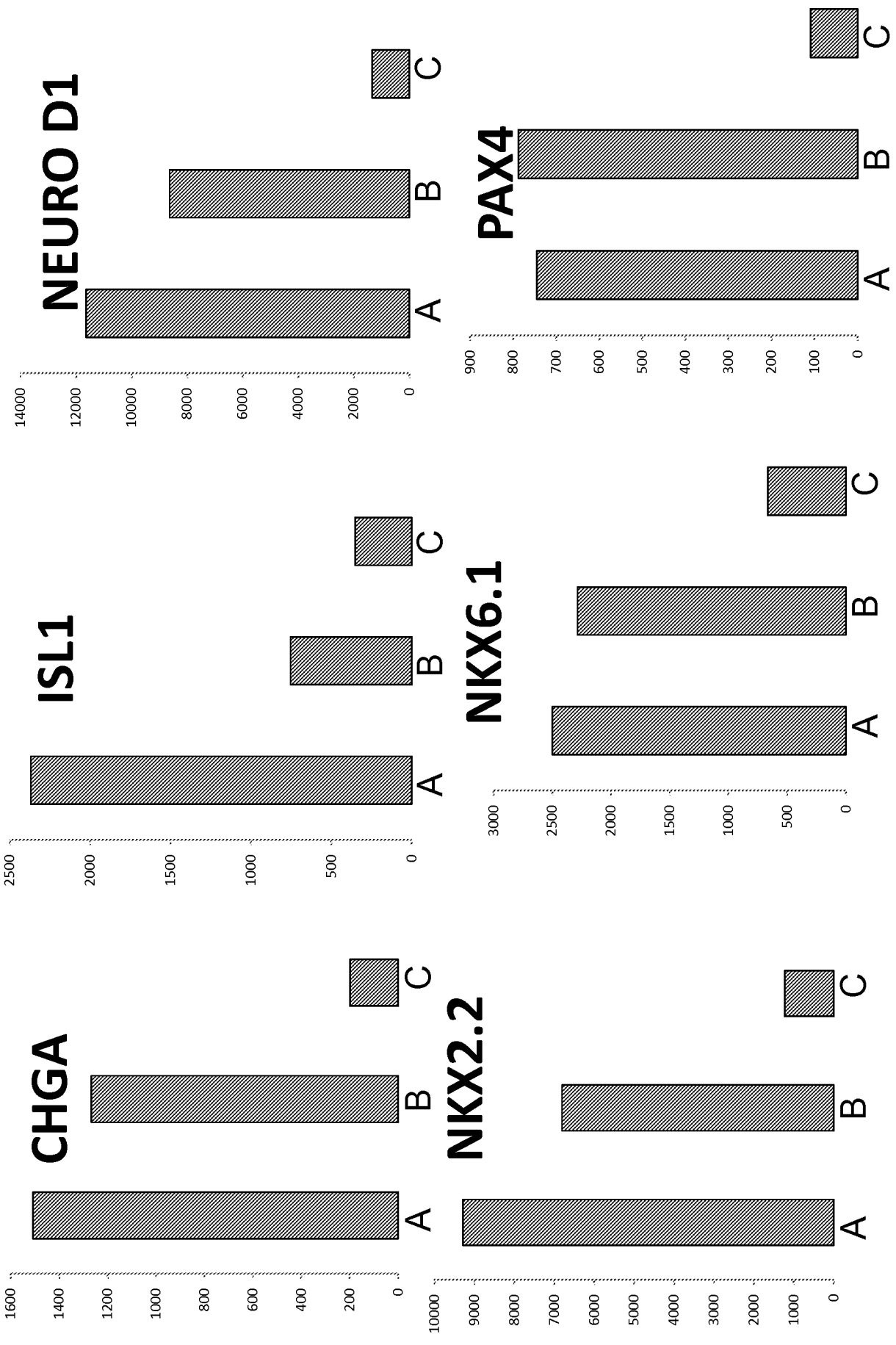
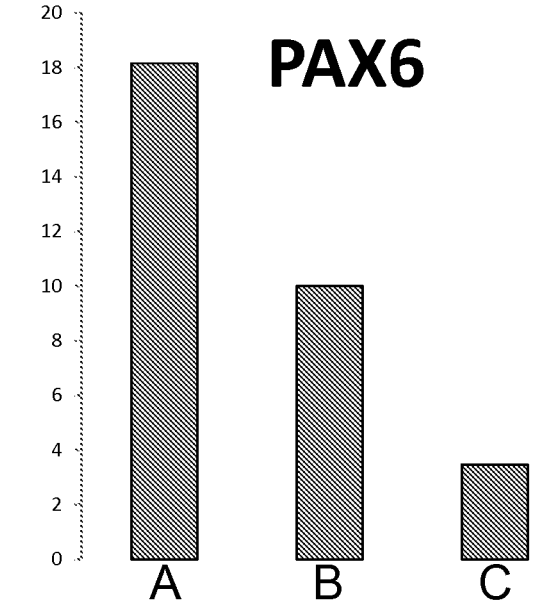
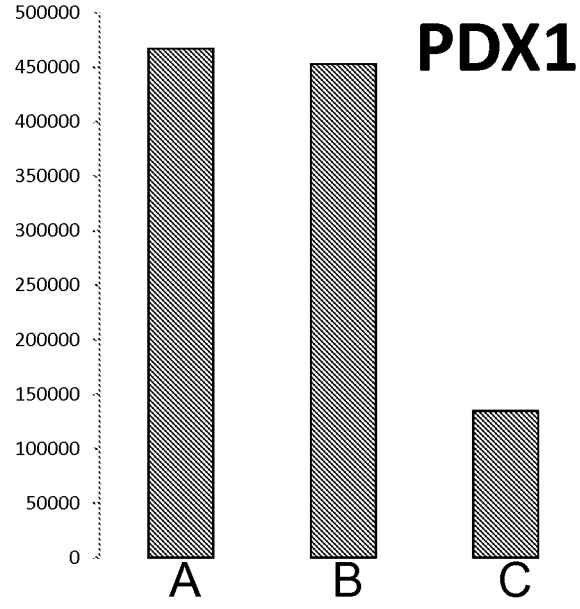
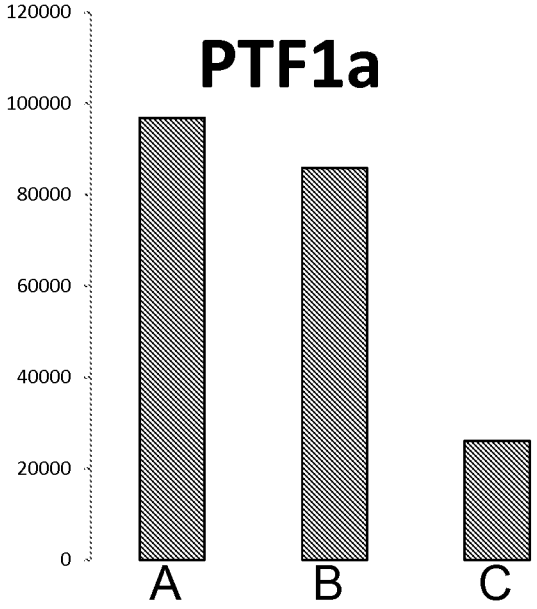
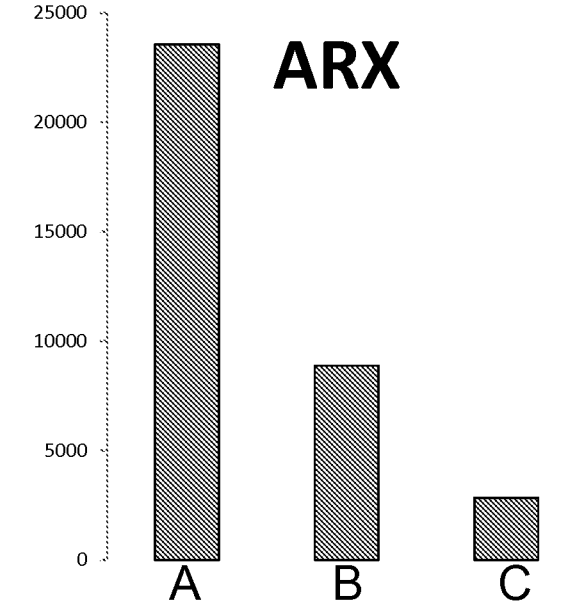

CHGA
1600
1400
1200
1000
800
600
400
200
0
A
B
C
ISL1
2500
2000
1500
1000
500
0
A
B
C
NEURO D1
14000
12000
10000
8000
6000
4000
2000
0
A
B
C
NKX2.2
10000
9000
8000
7000
6000
5000
4000
3000
2000
1000
0
A
B
C
NKX6.1
3000
2500
2000
1500
1000
500
0
A
B
C
PAX4
900
800
700
600
500
400
300
200
100
0
A
B
C

Figure 5e2









WO 2014/106141
PCT/US2013/078191

Figure 5e3

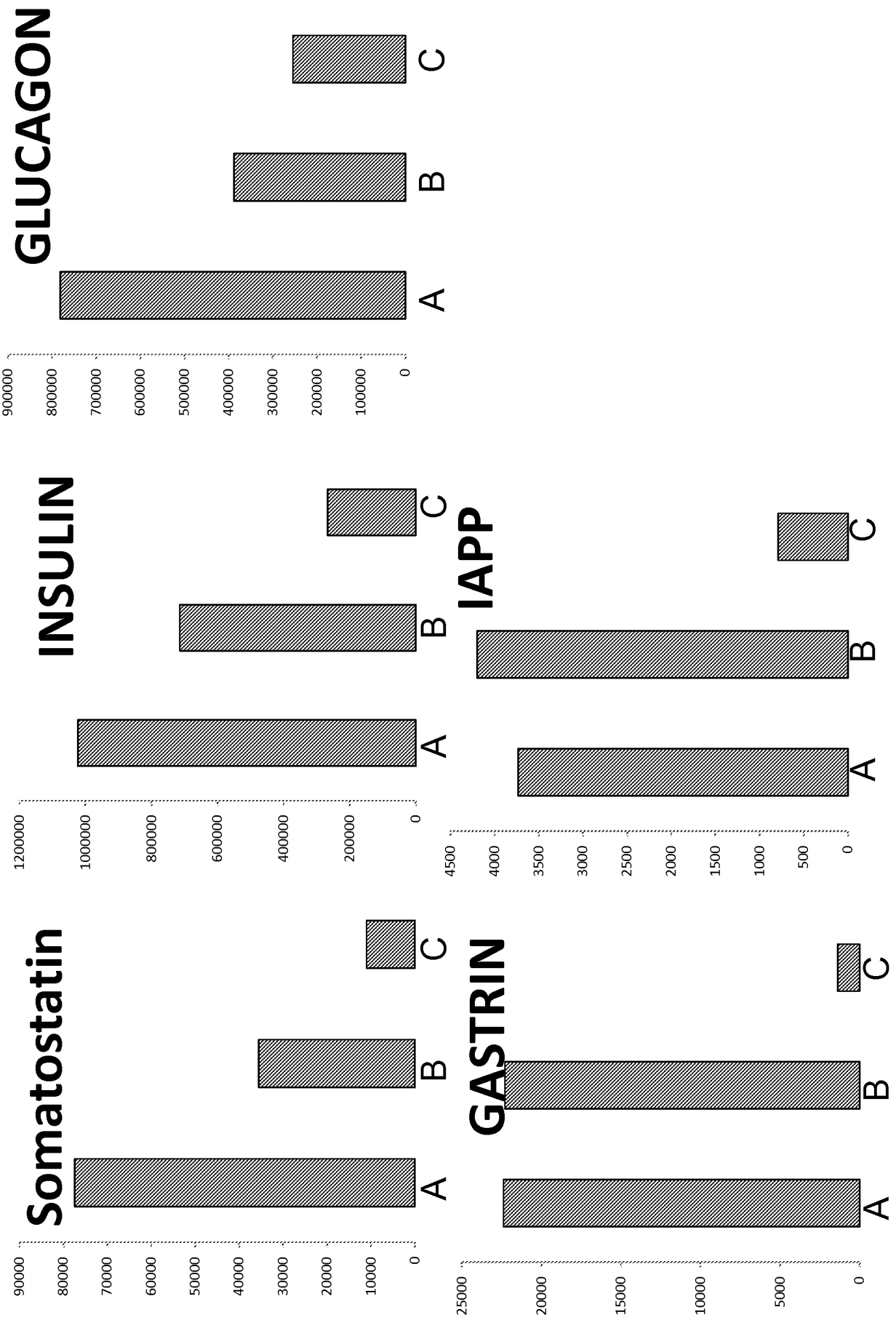

Somatostatin
90000
80000
70000
60000
50000
40000
30000
20000
10000
0
A
B
C
INSULIN
1200000
1000000
800000
600000
400000
200000
0
A
B
C
GLUCAGON
900000
800000
700000
600000
500000
400000
300000
200000
100000
0
A
B
C
GASTRIN
25000
20000
15000
10000
5000
0
A
B
C
IAPP
4500
4000
3500
3000
2500
2000
1500
1000
500
0
A
B
C

Figure 5e4

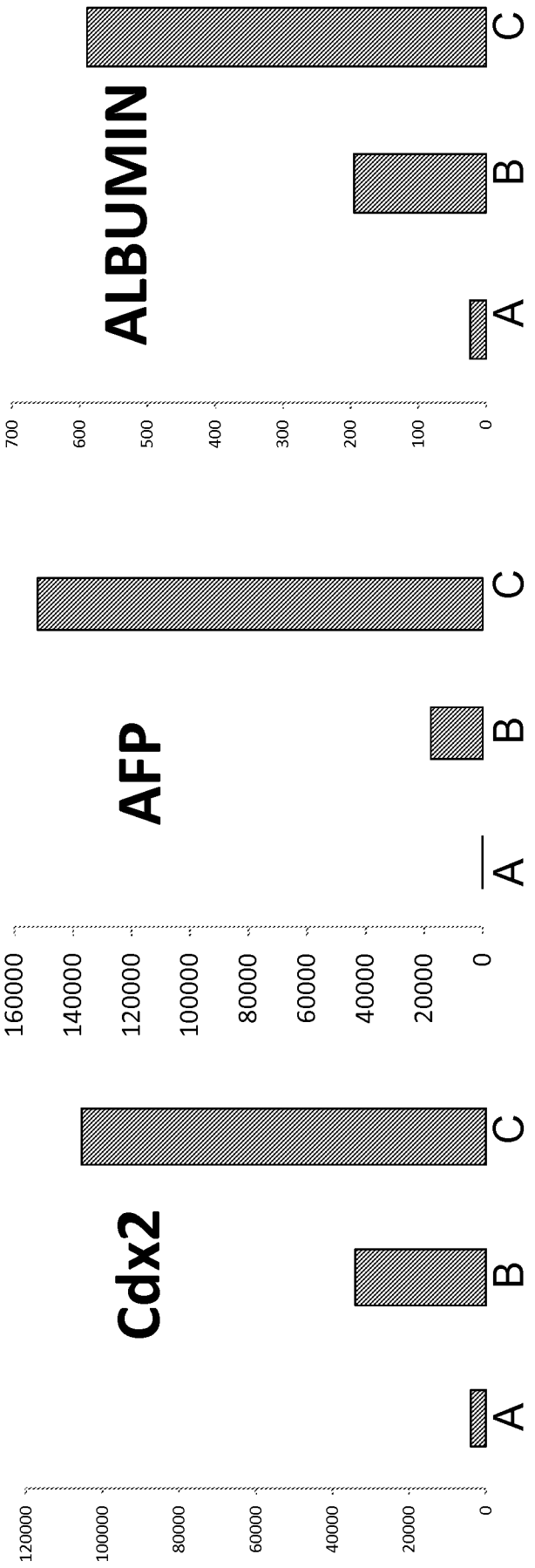

Cdx2
120000
100000
80000
60000
40000
20000
0
A
B
C
AFP
160000
140000
120000
100000
80000
60000
40000
20000
0
A
B
C
ALBUMIN
700
600
500
400
300
200
100
0
A
B
C

Figure 5f

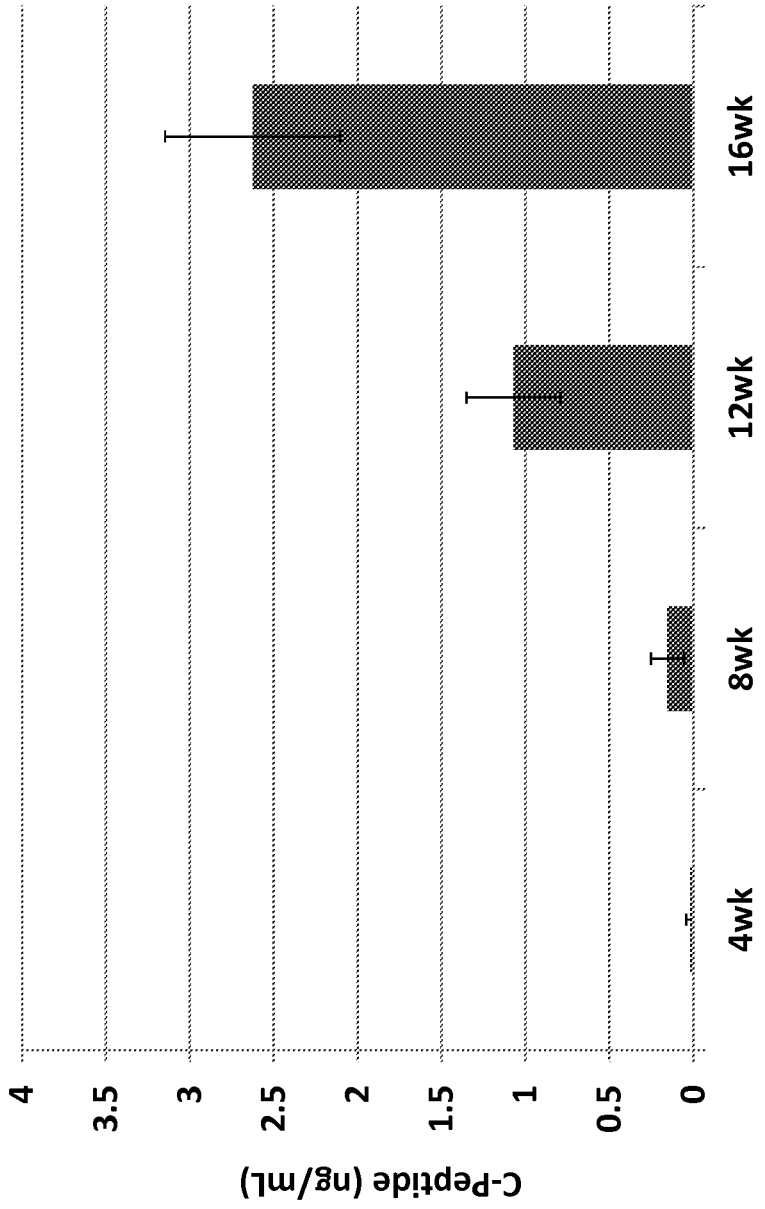


Figure 5g

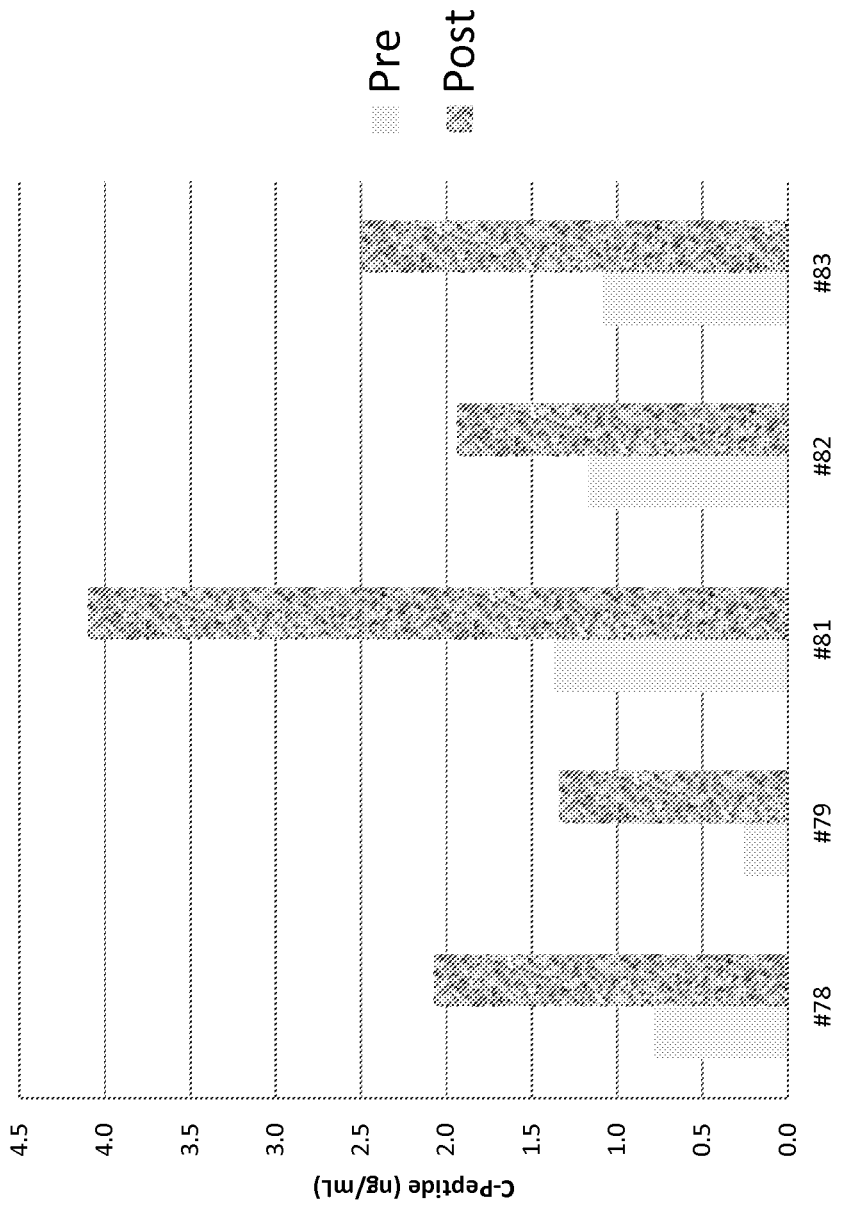


Figure 5h

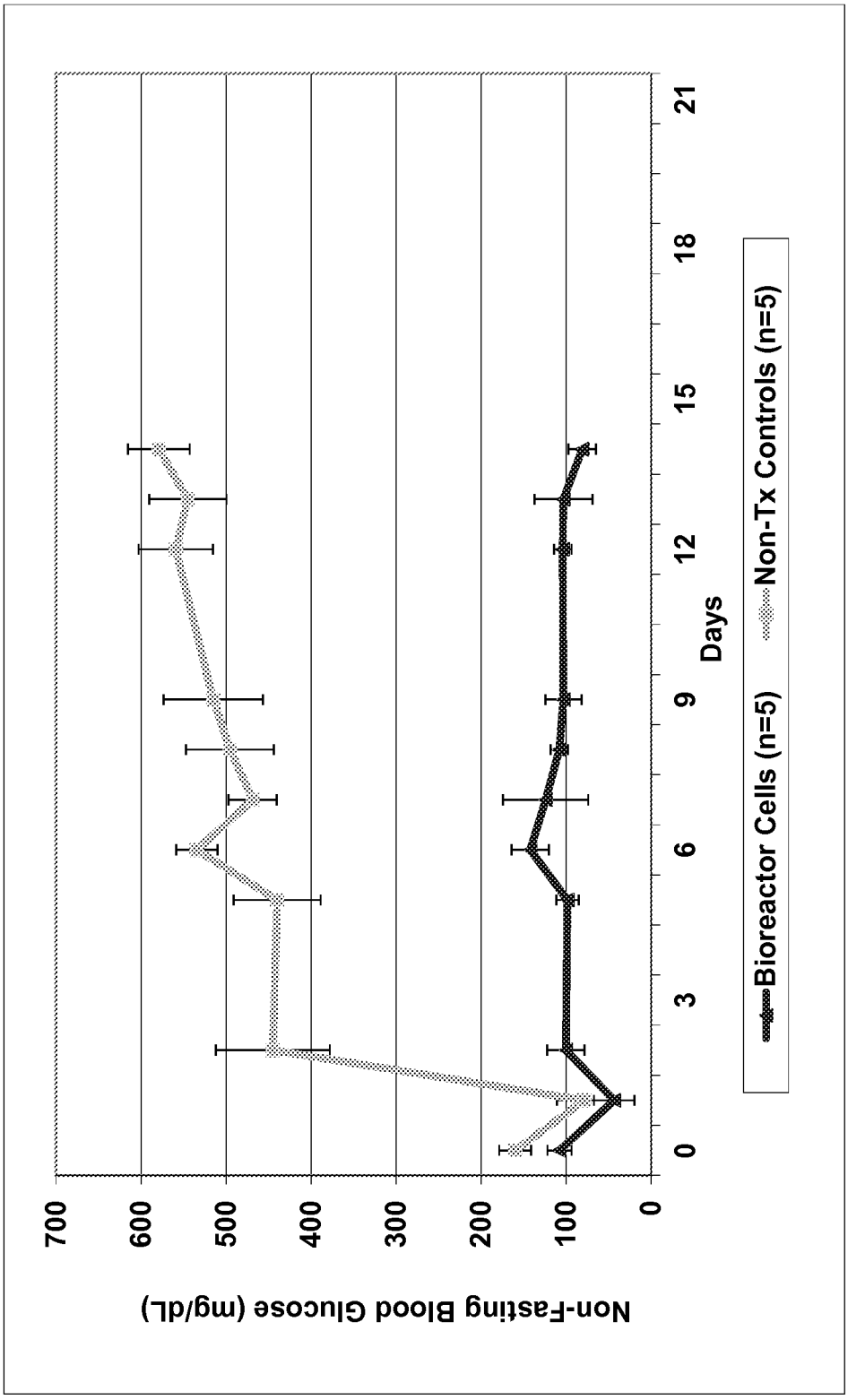

Non-Fasting Blood Glucose (mg/dL)
700
600
500
400
300
200
100
0
0
3
6
9
12
15
18
21
Days
Bioreactor Cells (n=5)
Non-Tx Controls (n=5)

Figure 6a

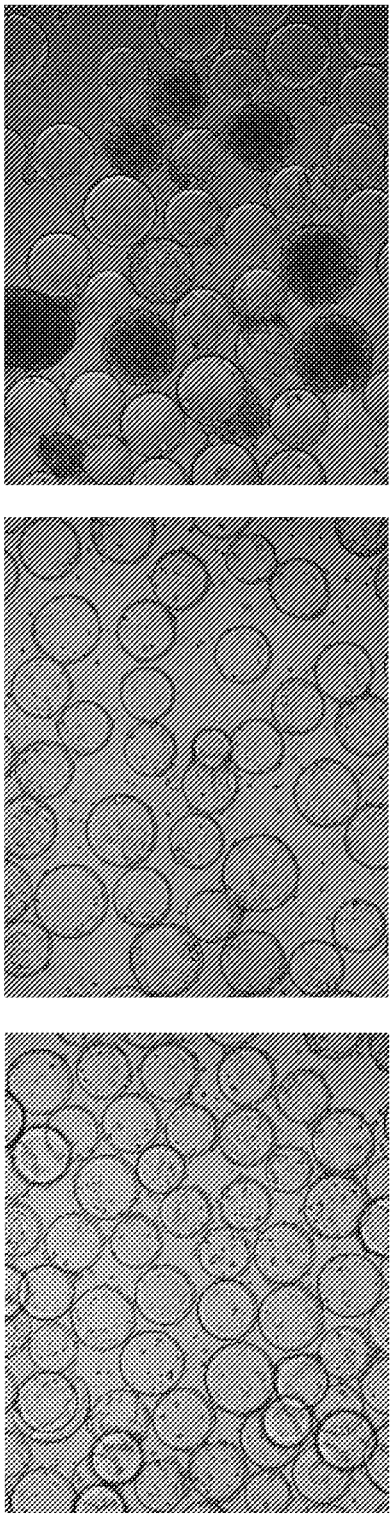


Figure 6b

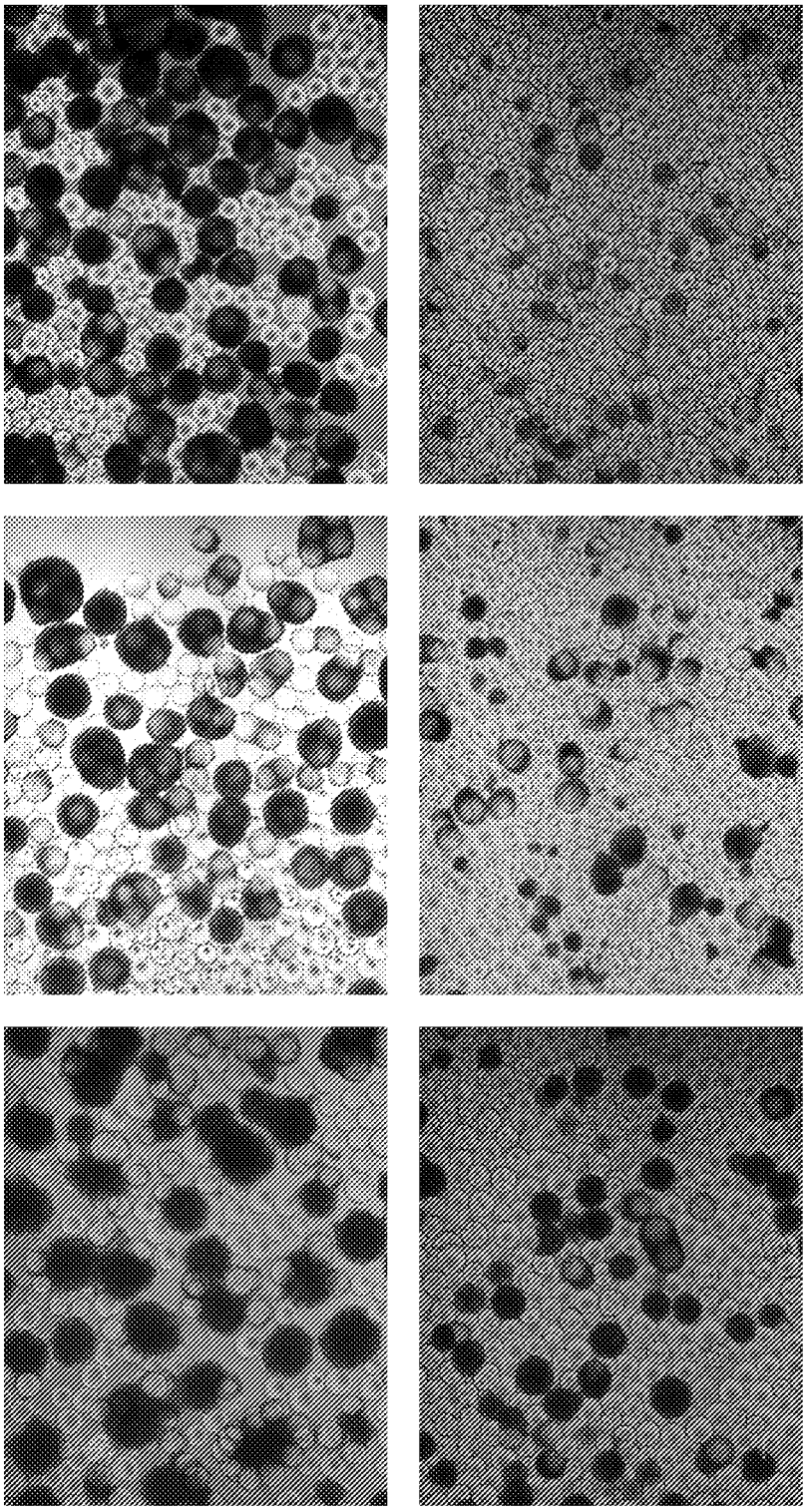


Figure 6c

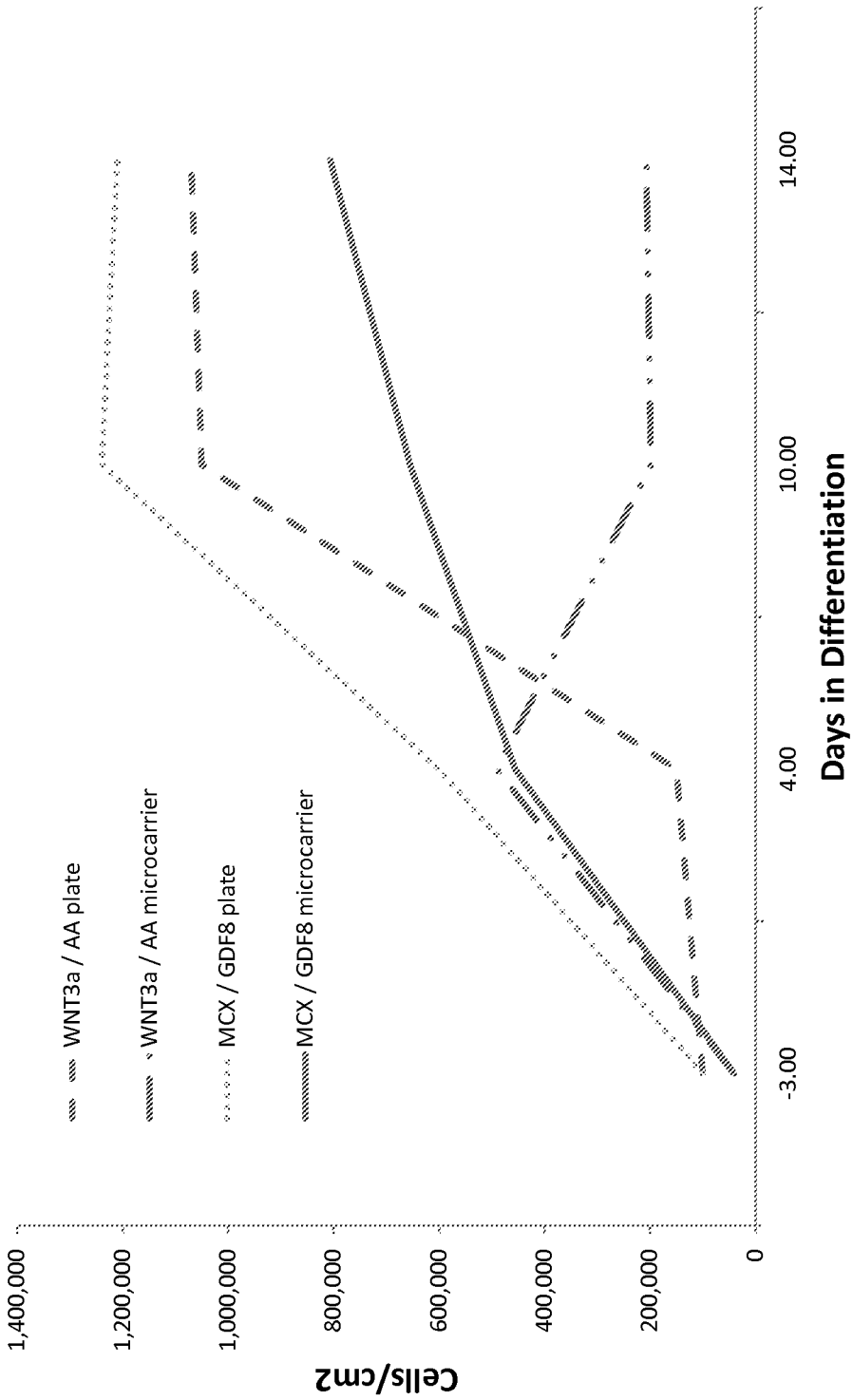

WNT3a / AA plate
WNT3a / AA microcarrier
MCX / GDF8 plate
MCX / GDF8 microcarrier
Cells/cm2
1,400,000
1,200,000
1,000,000
800,000
600,000
400,000
200,000
0
-3.00
4.00
10.00
14.00
Days in Differentiation

Figure 6d

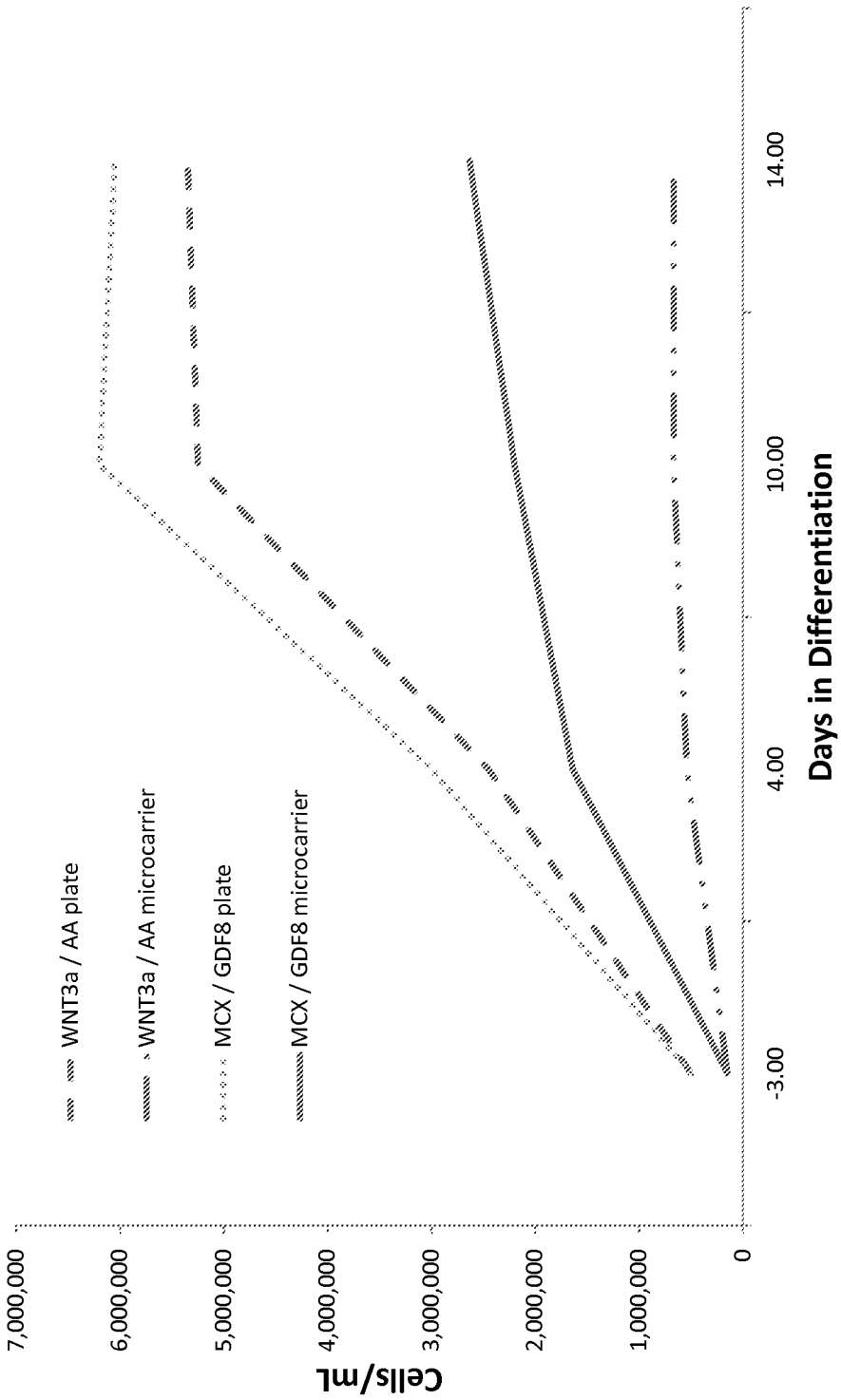

WNT3a / AA plate
WNT3a / AA microcarrier
MCX / GDF8 plate
MCX / GDF8 microcarrier
Cells/mL
7,000,000
6,000,000
5,000,000
4,000,000
3,000,000
2,000,000
1,000,000
0
-3.00
4.00
10.00
14.00
Days in Differentiation

Figure 6e

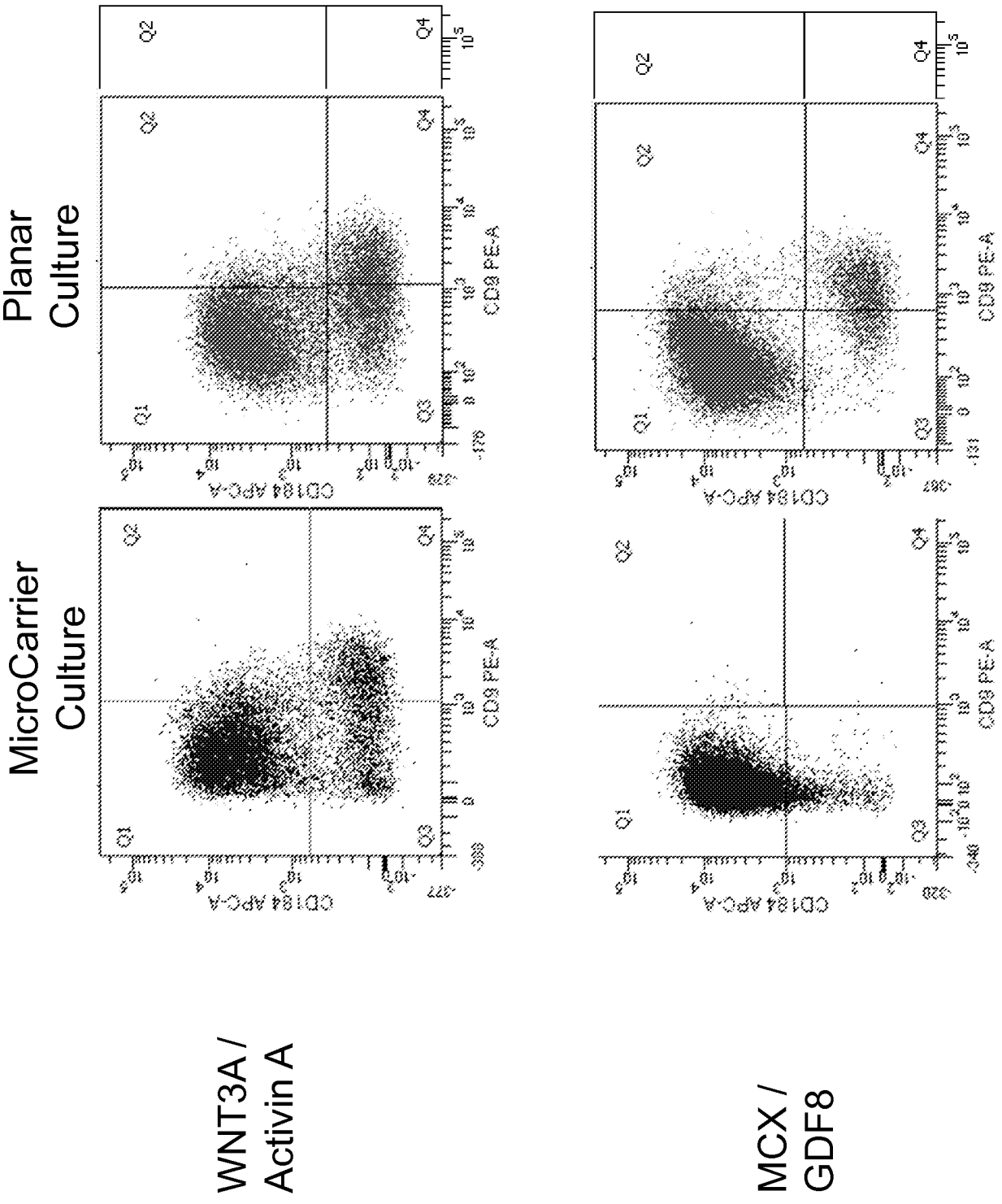

Planar Culture
MicroCarrier Culture
WNT3A / Activin A
MCX / GDF8
CD184 APC-A
CD9 PE-A
Q1
Q2
Q3
Q4

Figure 6f

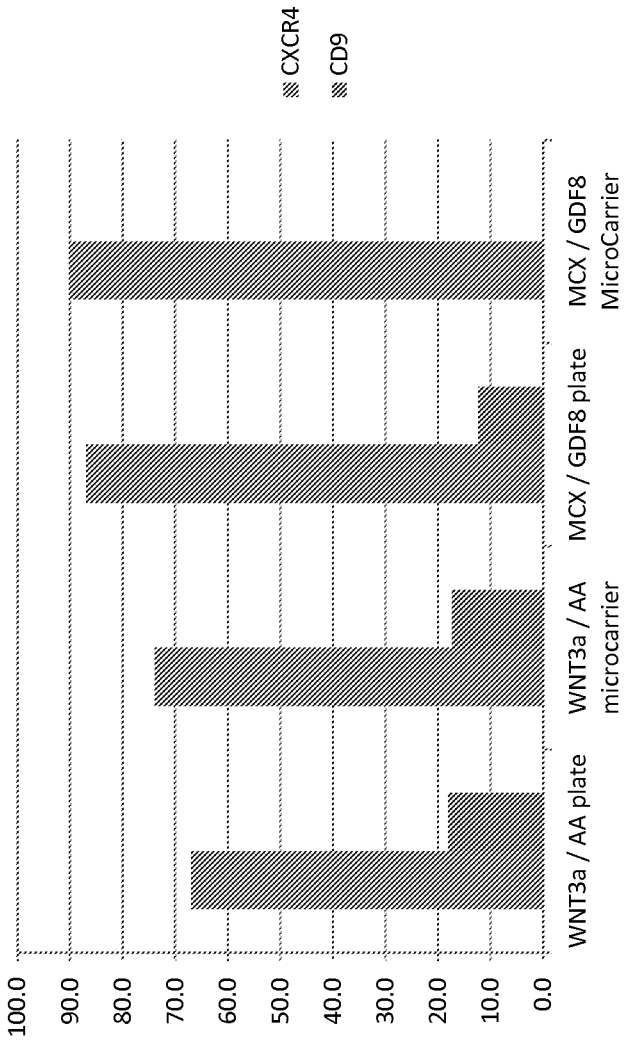

CXCR4
CD9
100.0
90.0
80.0
70.0
60.0
50.0
40.0
30.0
20.0
10.0
0.0
WNT3a / AA plate
WNT3a / AA microcarrier
MCX / GDF8 plate
MCX / GDF8 MicroCarrier

Figure 6g

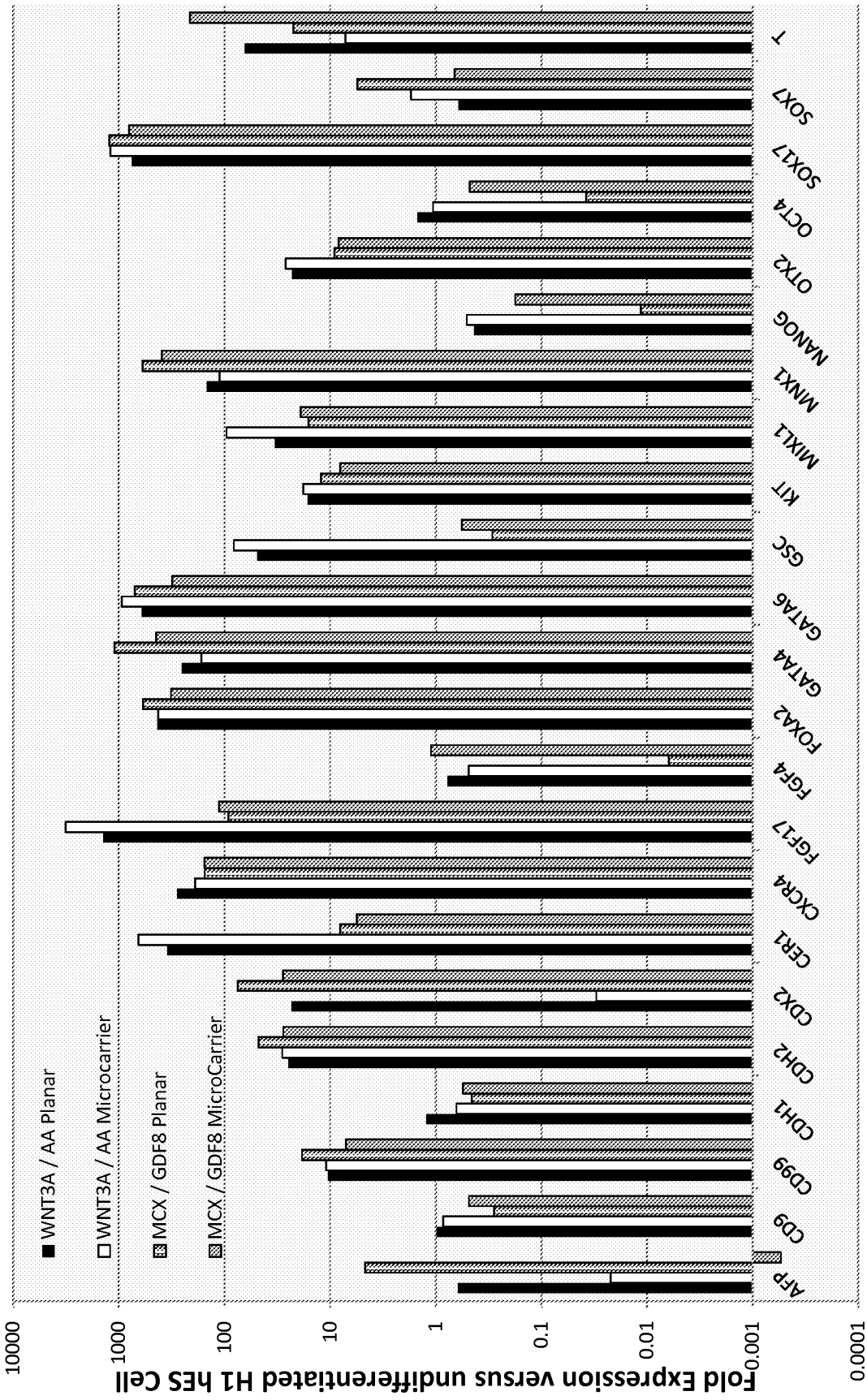

Fold Expression versus undifferentiated H1 hES Cell
10000
1000
100
10
1
0.1
0.01
0.001
0.0001
WNT3A / AA Planar
WNT3A / AA Microcarrier
MCX / GDF8 Planar
MCX / GDF8 MicroCarrier
AFP
CD9
CD99
CDH1
CDH2
CDX2
CER1
CXCR4
FGF17
FGF4
FOXA2
GATA4
GATA6
GSC
KIT
MIXL1
MNX1
NANOG
OTX2
OCT4
SOX17
SOX7
T

Figure 7: Cell Count

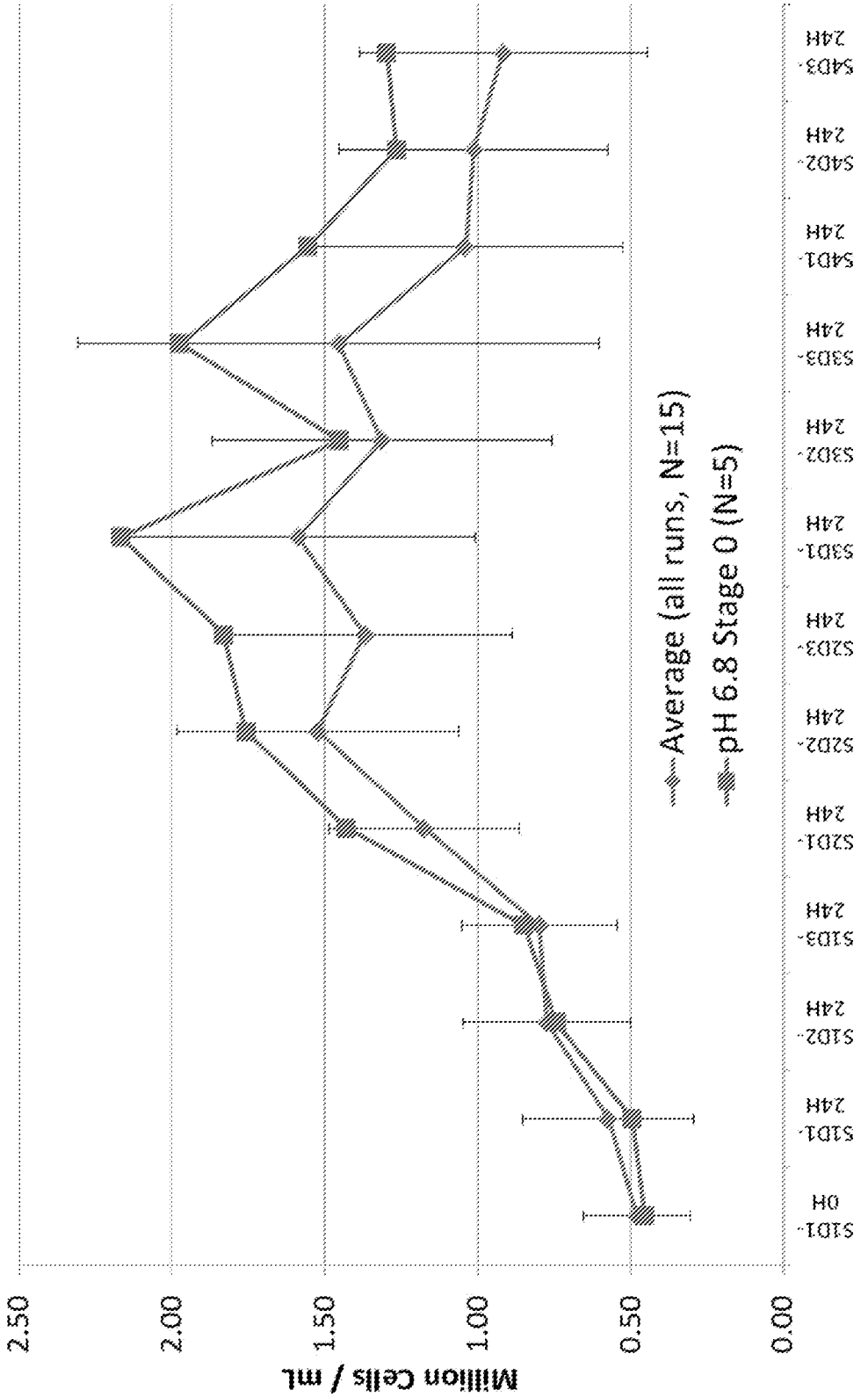


Figure 8: Average Daily Bioreactor pH Levels

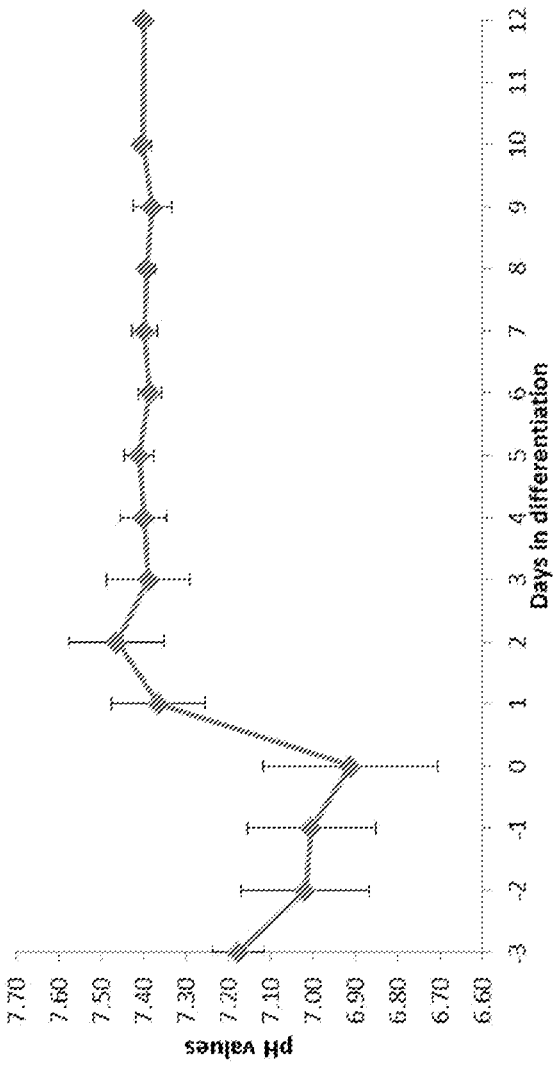


Figure 9: Average Daily Bioreactor Lactate Levels

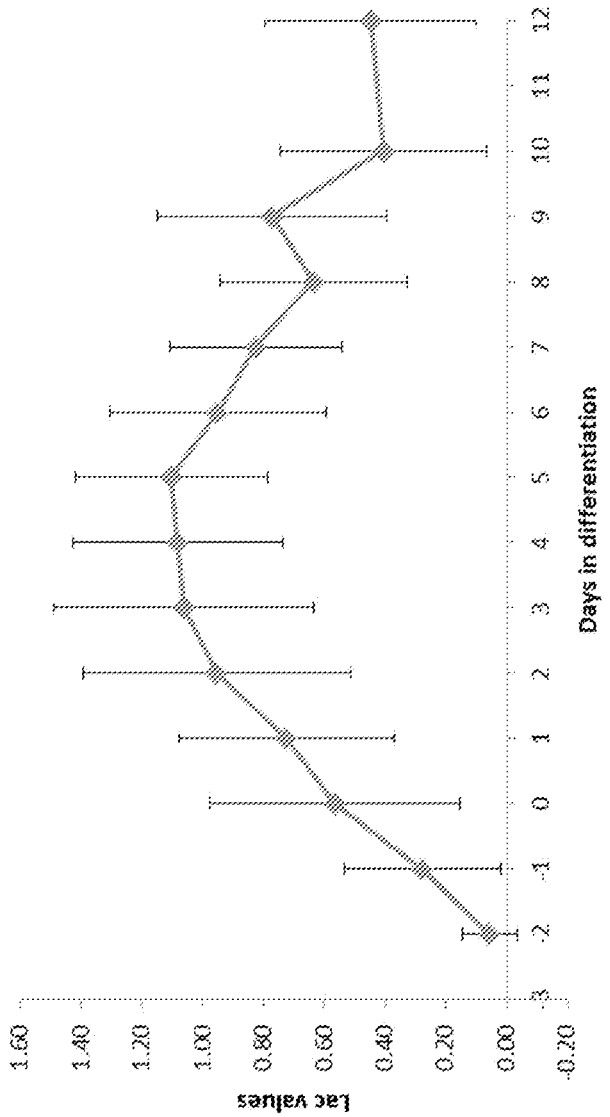


Figure 10: Average Daily Bioreactor Glucose Levels

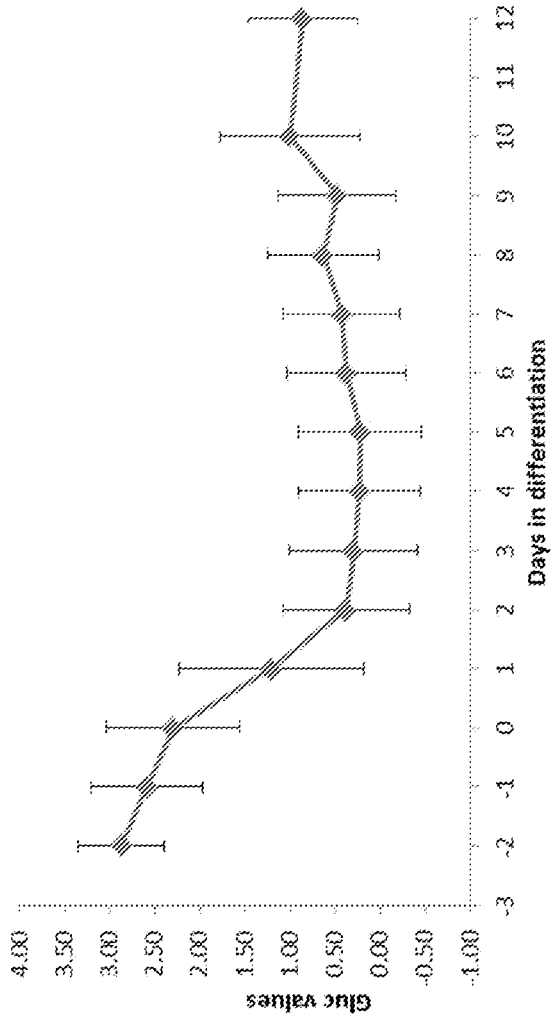


Figure 11: Average Stage 0 Day 1 Expression by qRT-PCR (n=12), Pluripotency Array (mean ± St. Dev.)

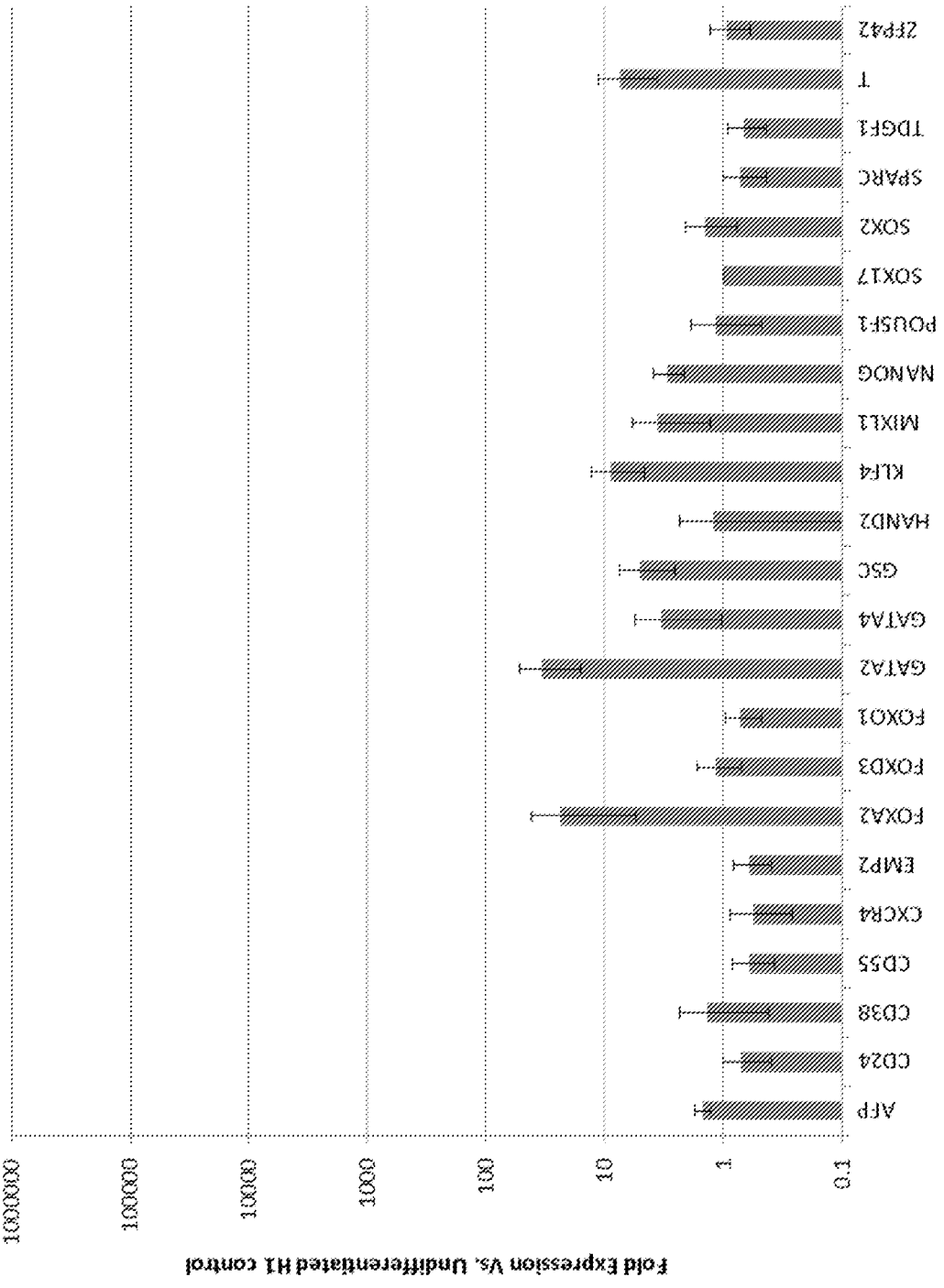


Figure 12: Average Stage 0 Day 1 Expression by qRT-PCR (n=10), DE Array (mean ± St. Dev.)

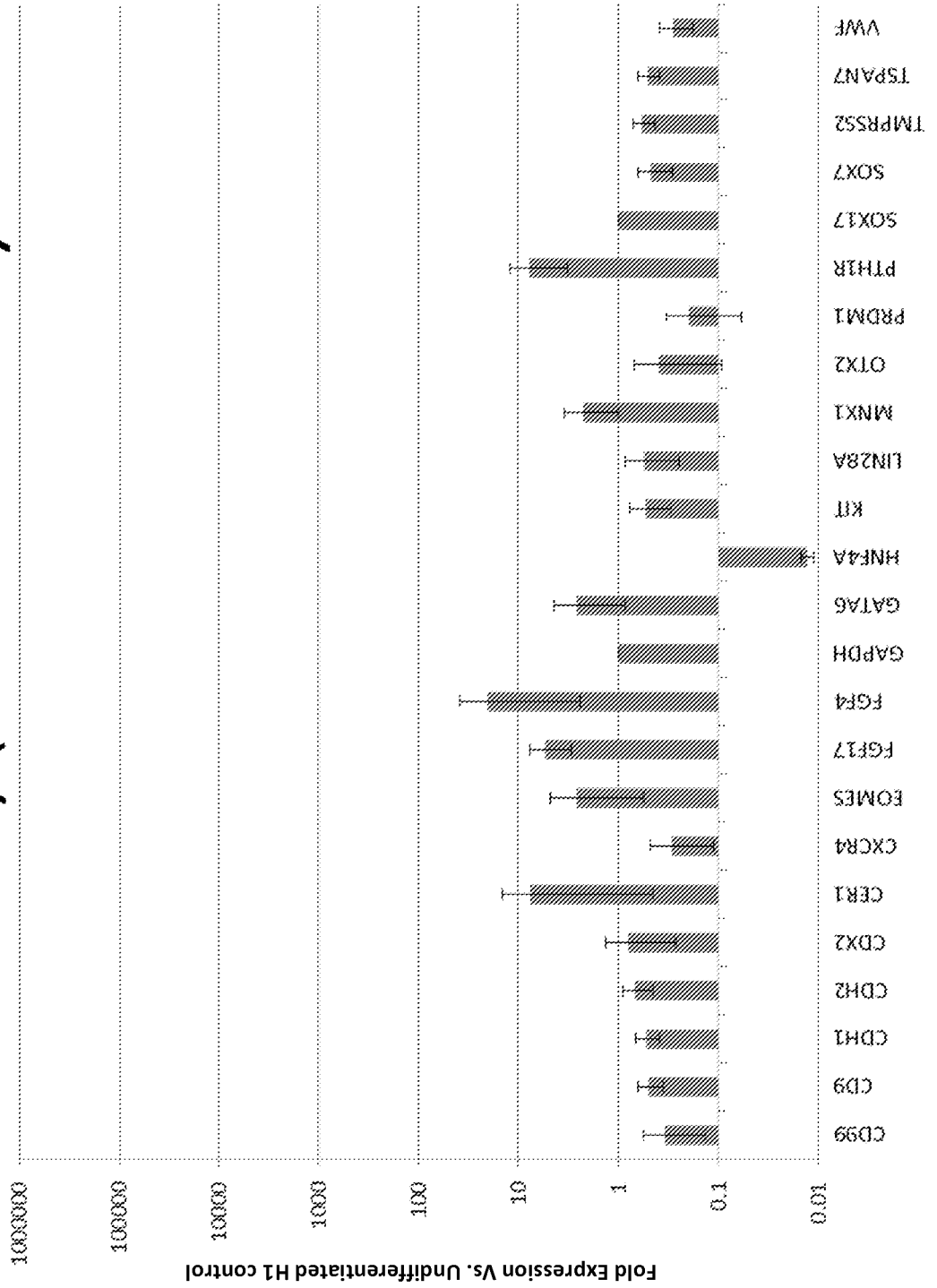


Figure 13: Average Stage 0 Day 3 Expression by qRT-PCR (n=12), Pluripotency Array (mean ± St. Dev.)

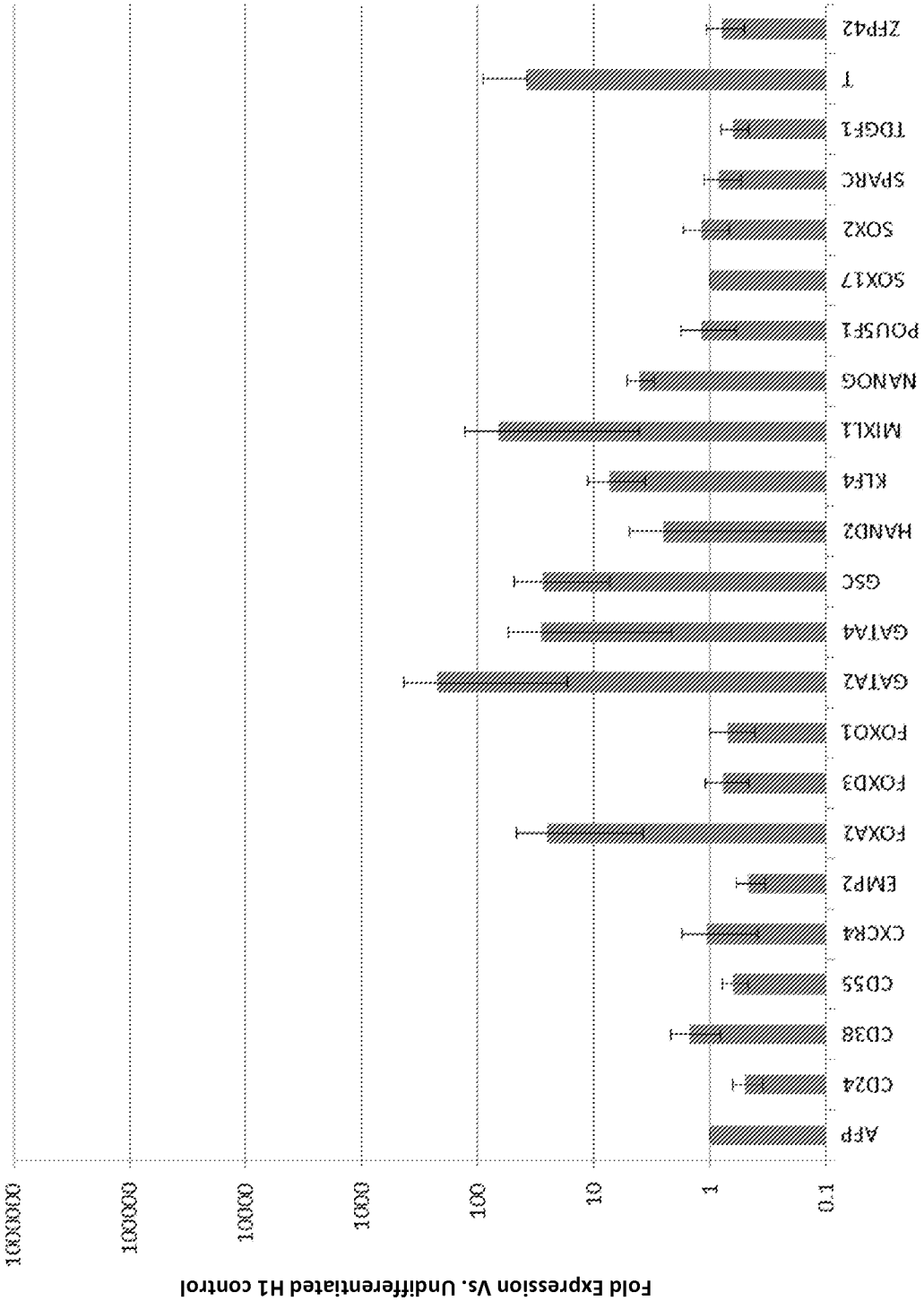


Figure 14: Average Stage 0 Day 3 Expression by qRT-PCR (n=10), DE Array (mean ± St. Dev.)

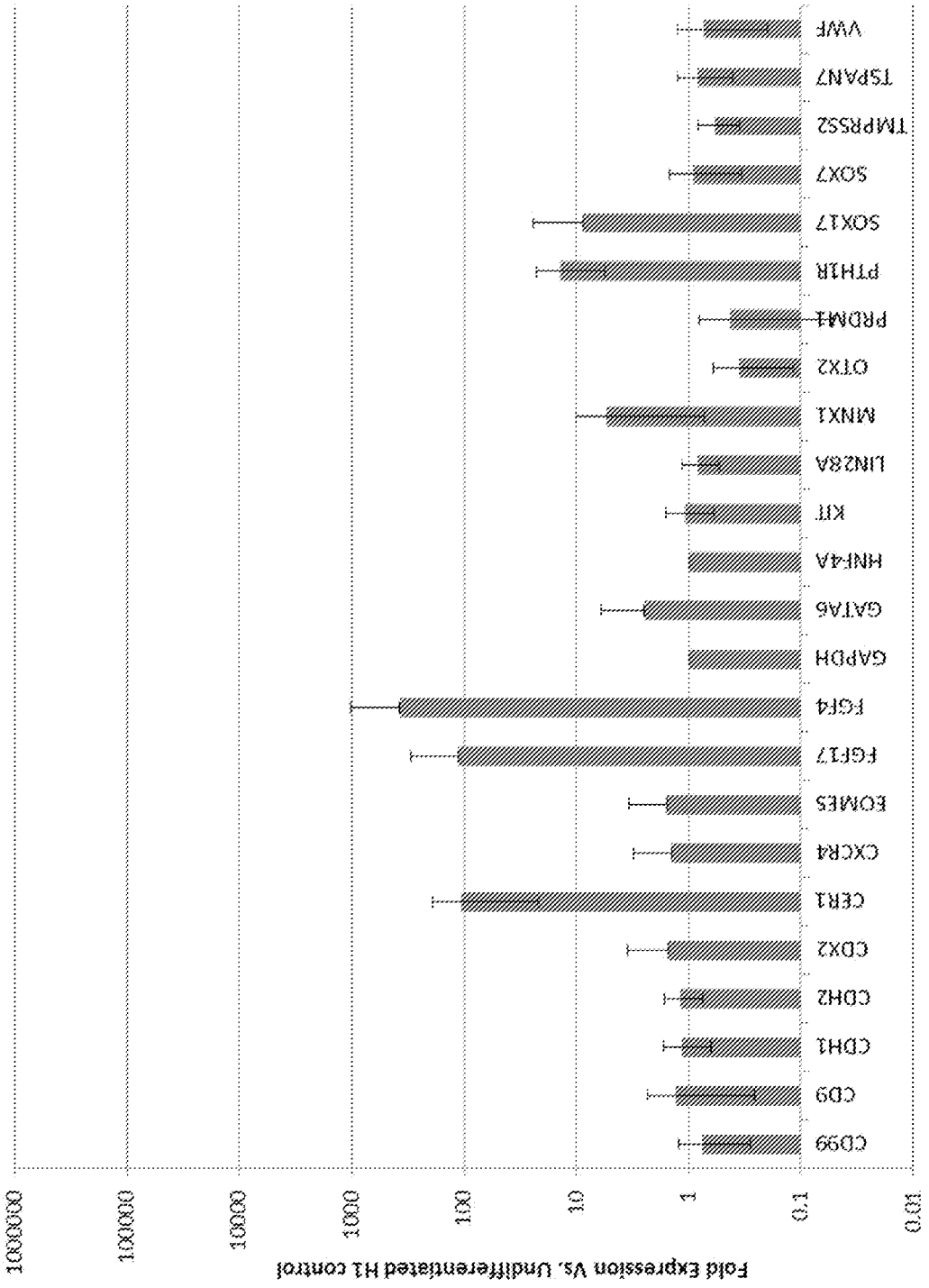


Figure 15: Average FACS Results Stage 0 Day 3 (mean ± St. Dev.)

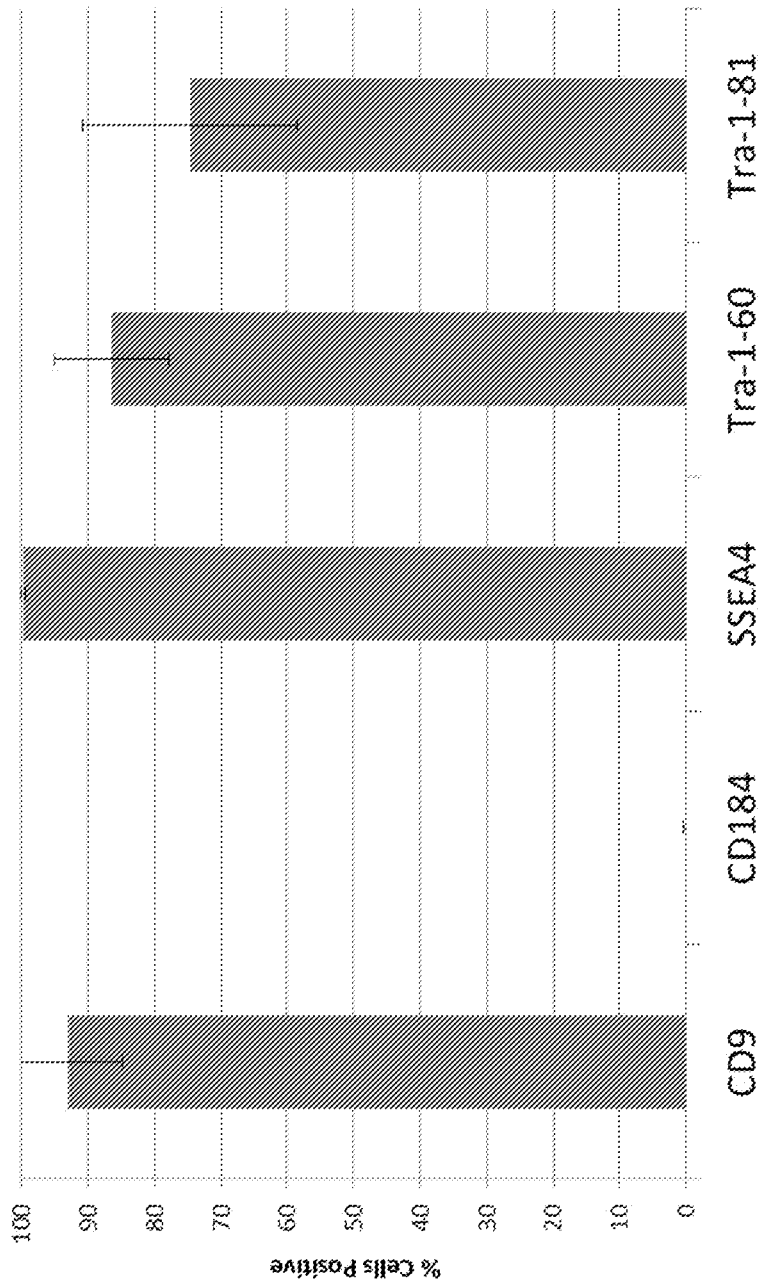


Figure 16: Stage 0 Days 1 and 3 expression (n=12, mean ± St. Dev.) by qRT-PCR Pluripotency Array

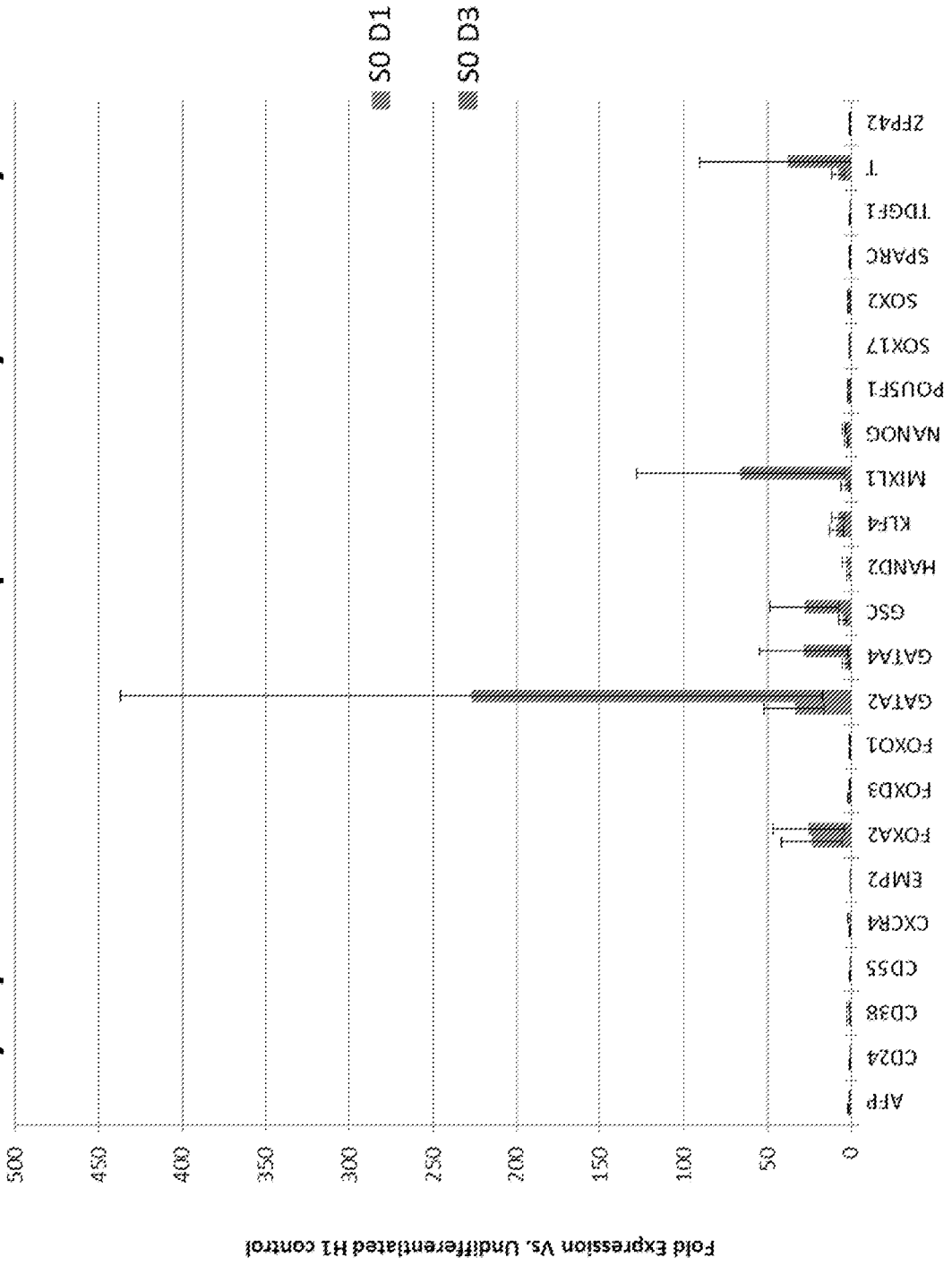


Figure 17: Stage 0 Days 1 and 3 expression (n=10, mean ± St. Dev.) by qRT-PCR DE Array

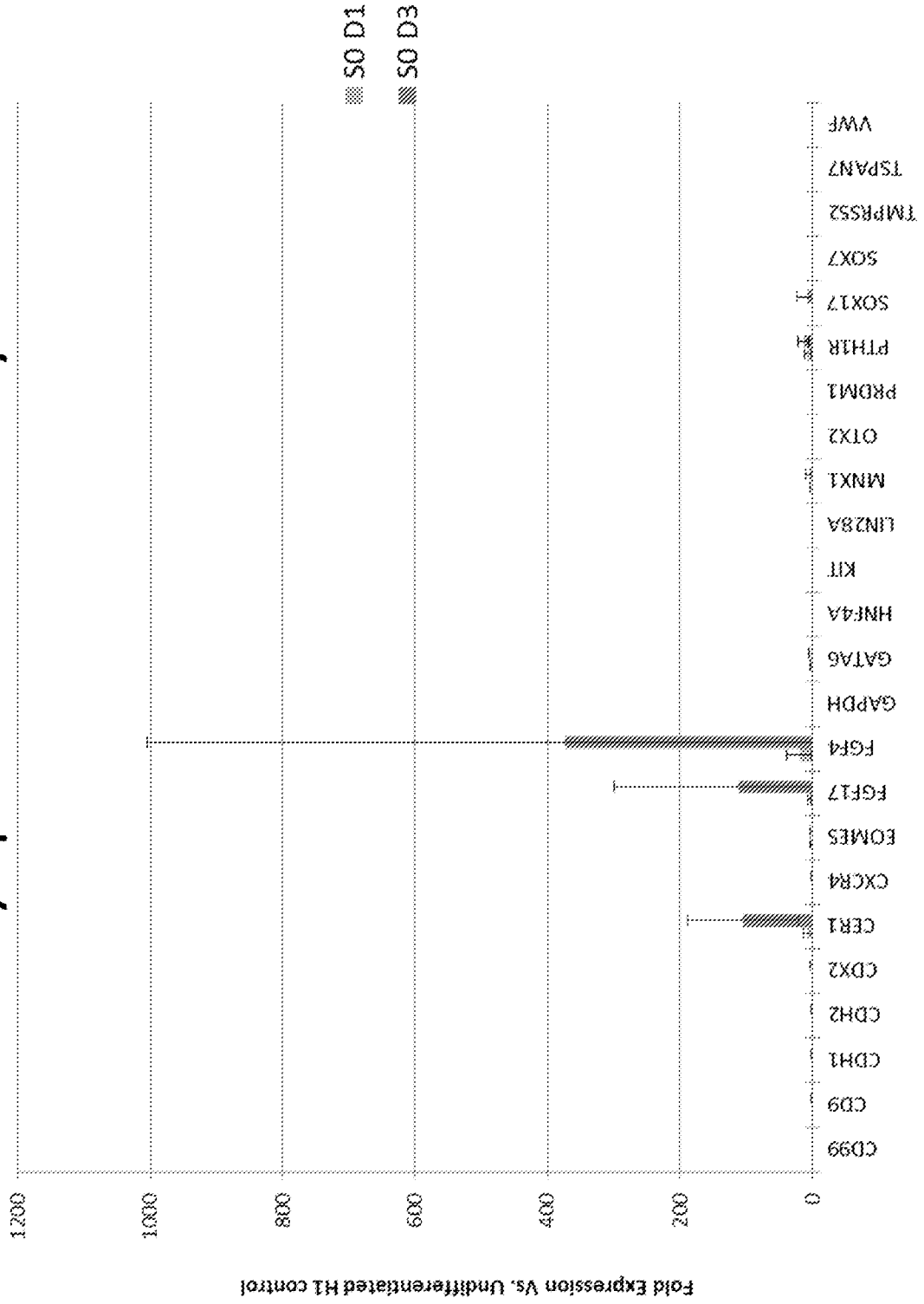


Figure 18: Stage 1 Day 1 expression (n=13, mean ± St. Dev.) by qRT-PCR Pluripotency Array

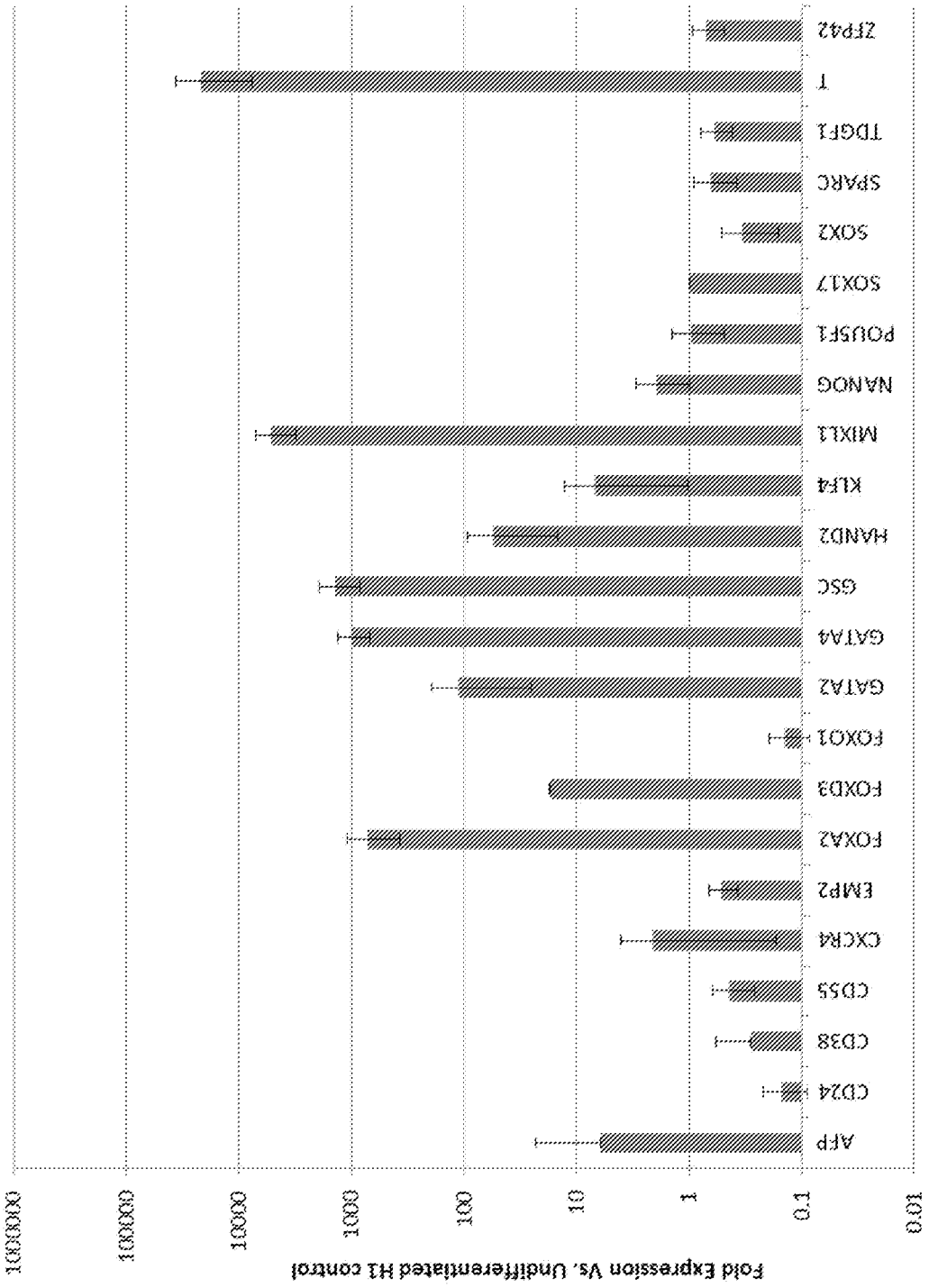


Figure 19: Stage 1 Day 1 expression (n=14, mean ± St. Dev.) by qRT-PCR DE Array

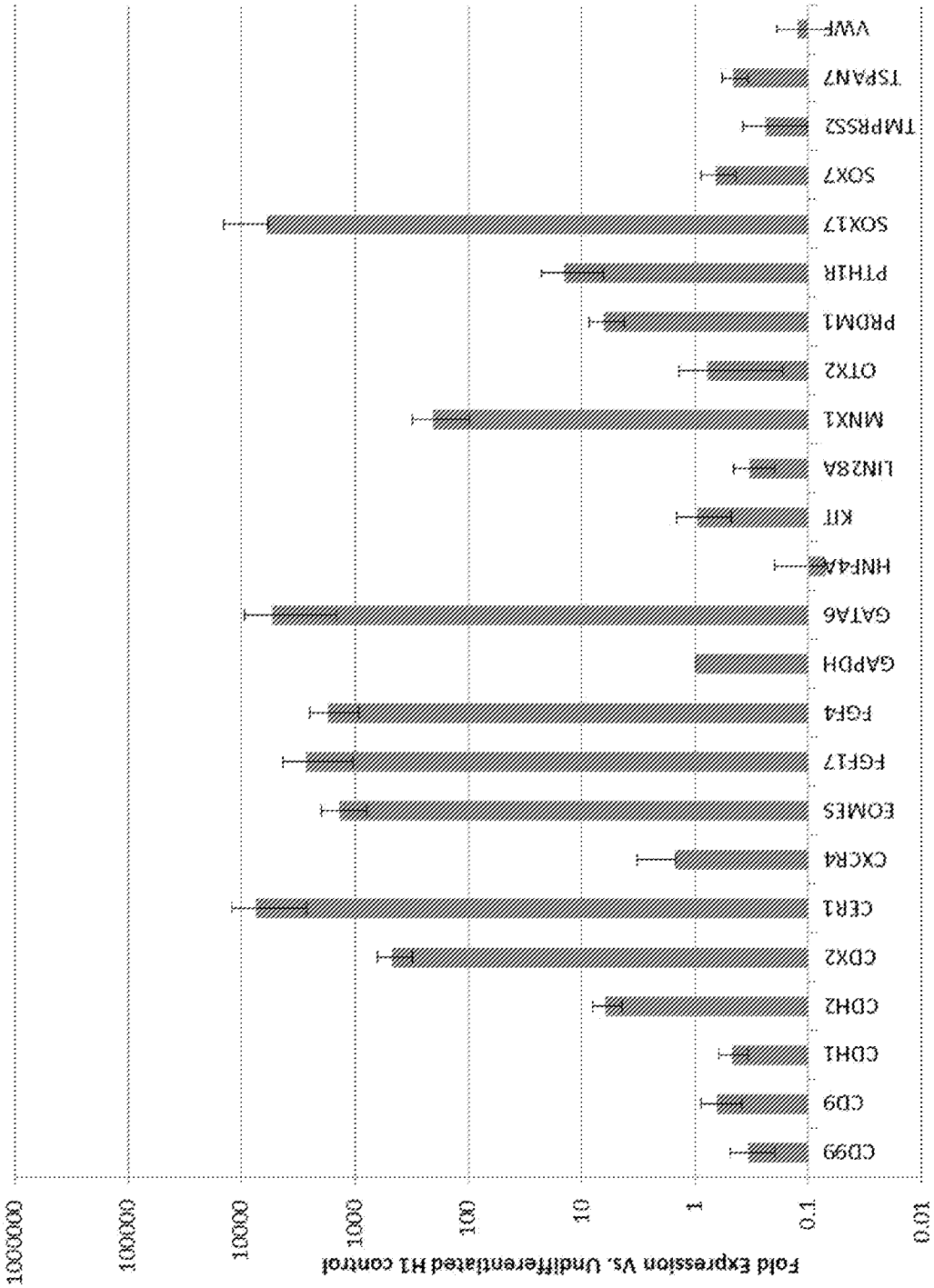


Figure 20: Stage 1 Day 3 expression (n=13, mean ± St. Dev.) by qRT-PCR Pluripotency Array

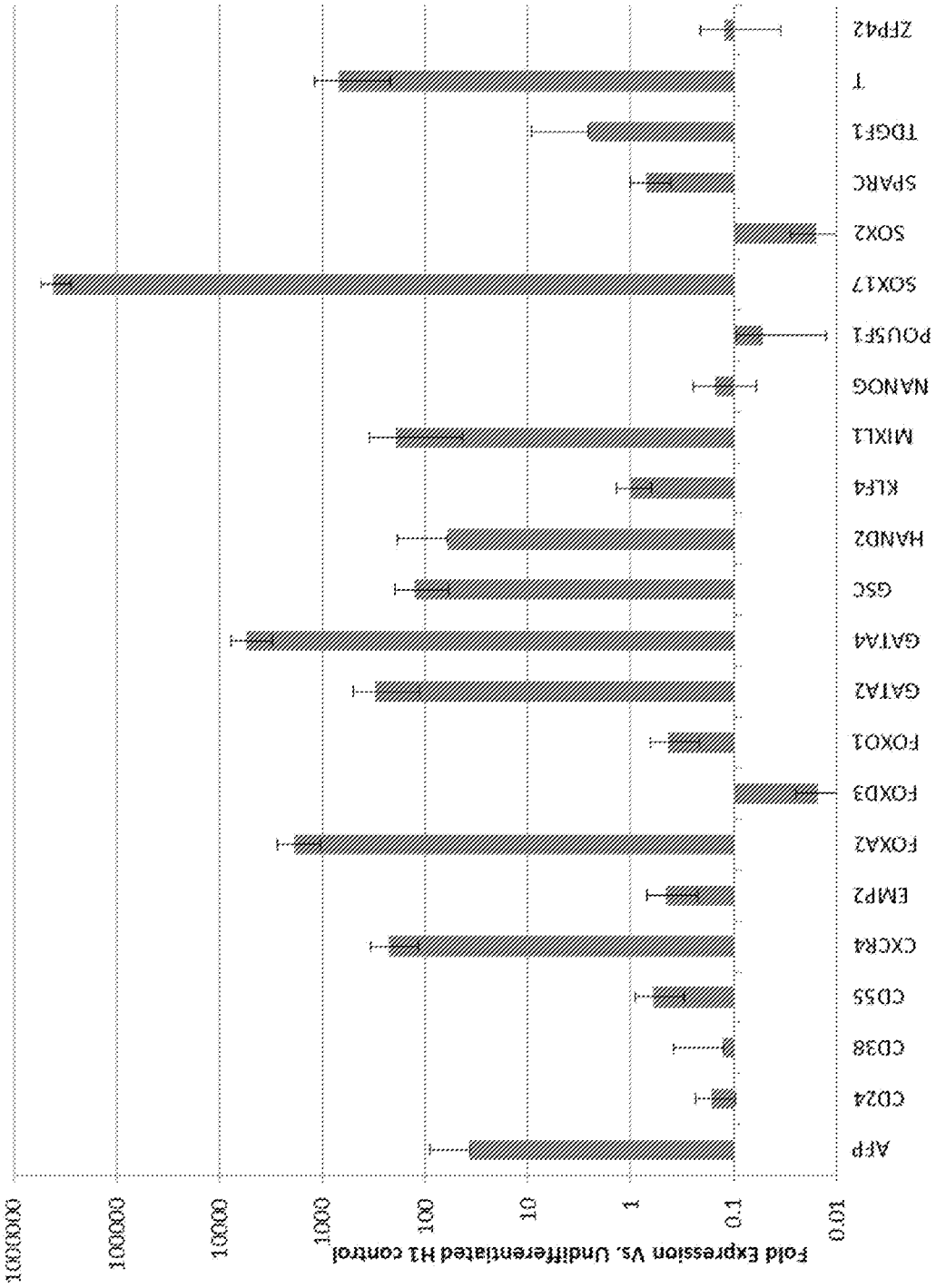


Figure 21: Stage 1 Day 3 expression (n=13, mean ± St. Dev.) by qRT-PCR DE Array

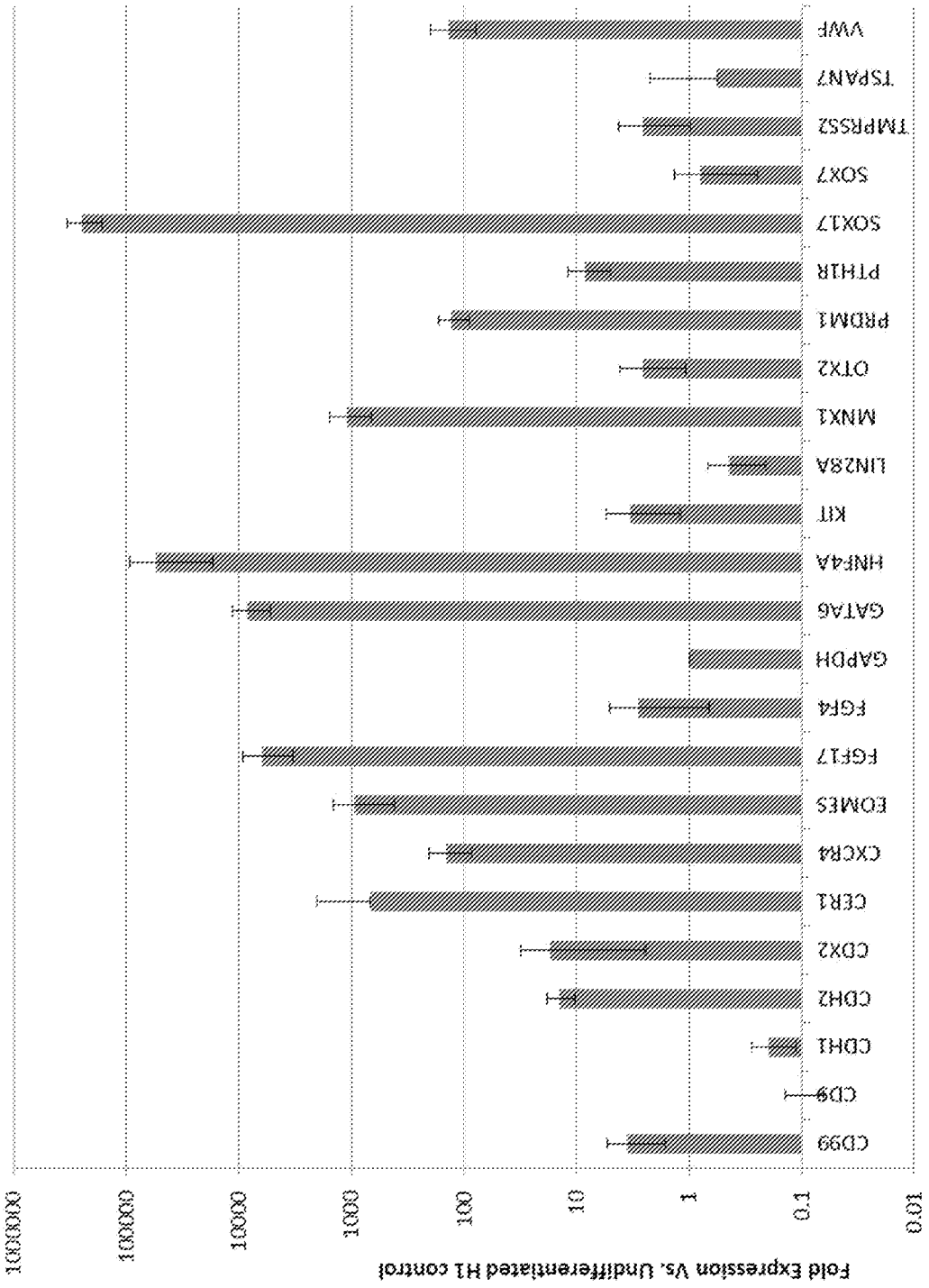


Figure 22: Average FACS results Stage 1 Day 3 (mean ± St. Dev.)

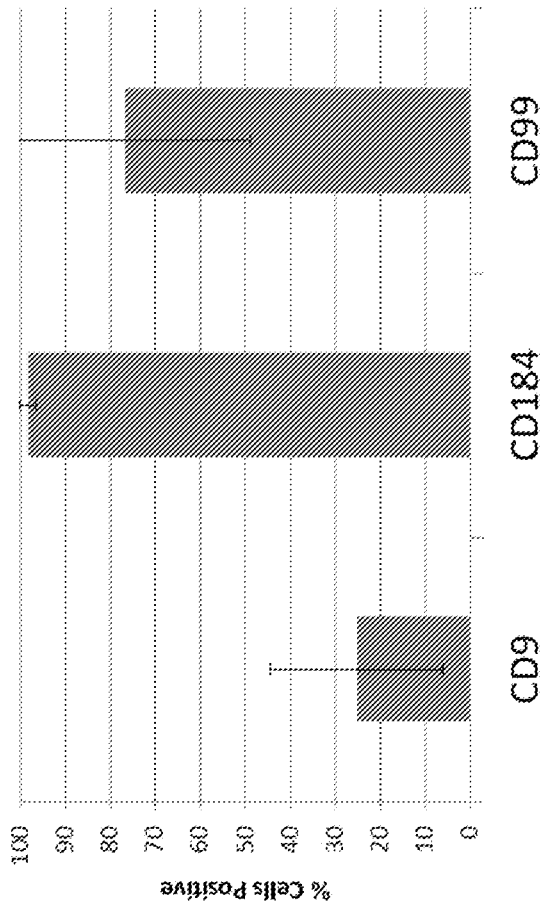


Figure 23: Stage 1 Day 3, Stage 2 Day 1, and Stage 2 Day 3 expression (n=14, mean ± St. Dev.) by qRT-PCR DE Array

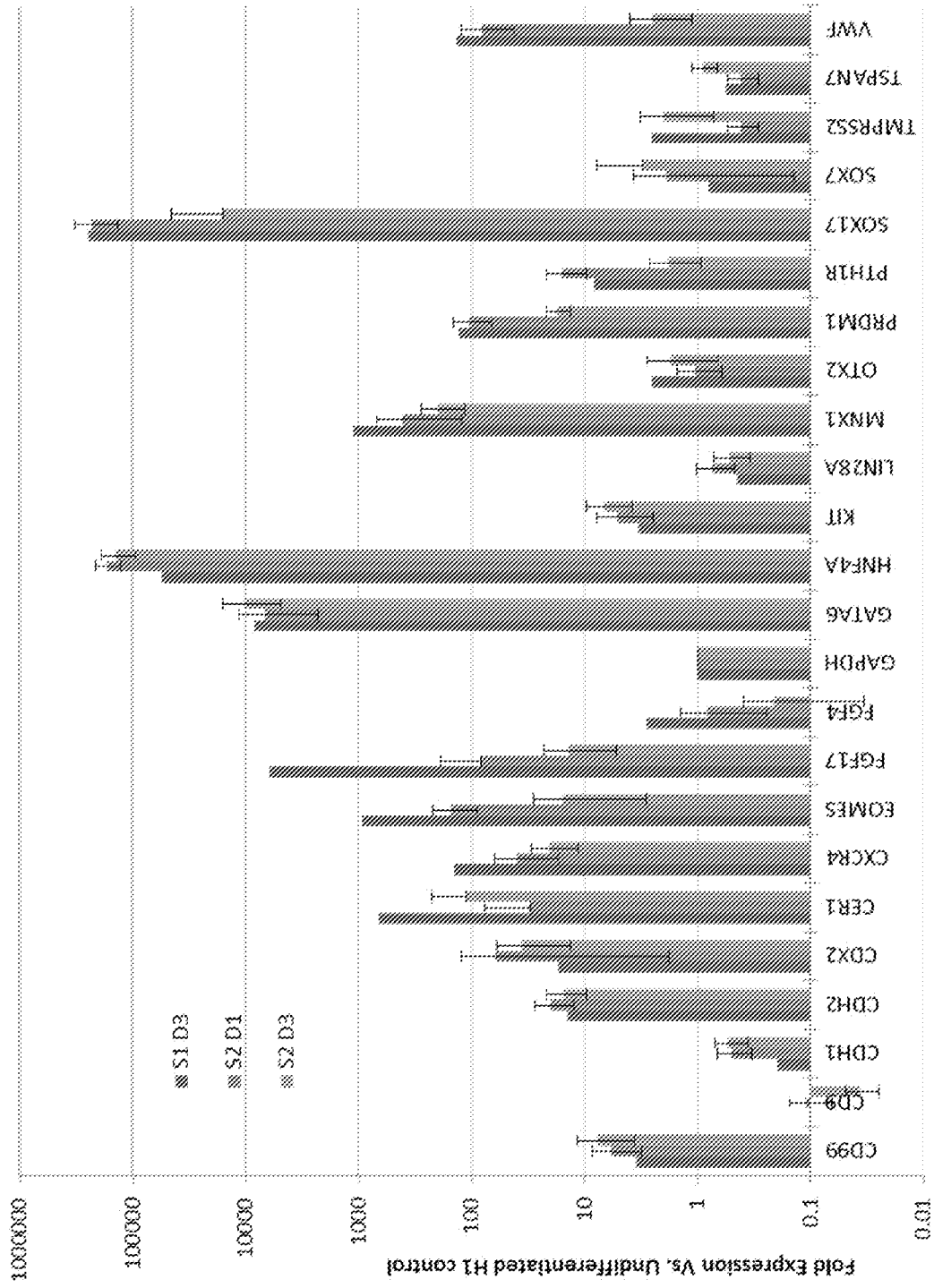


Figure 24: Stage 2 Day 1 and 3 expression (n=12, mean ± St. Dev.) by qRT-PCR GT Array

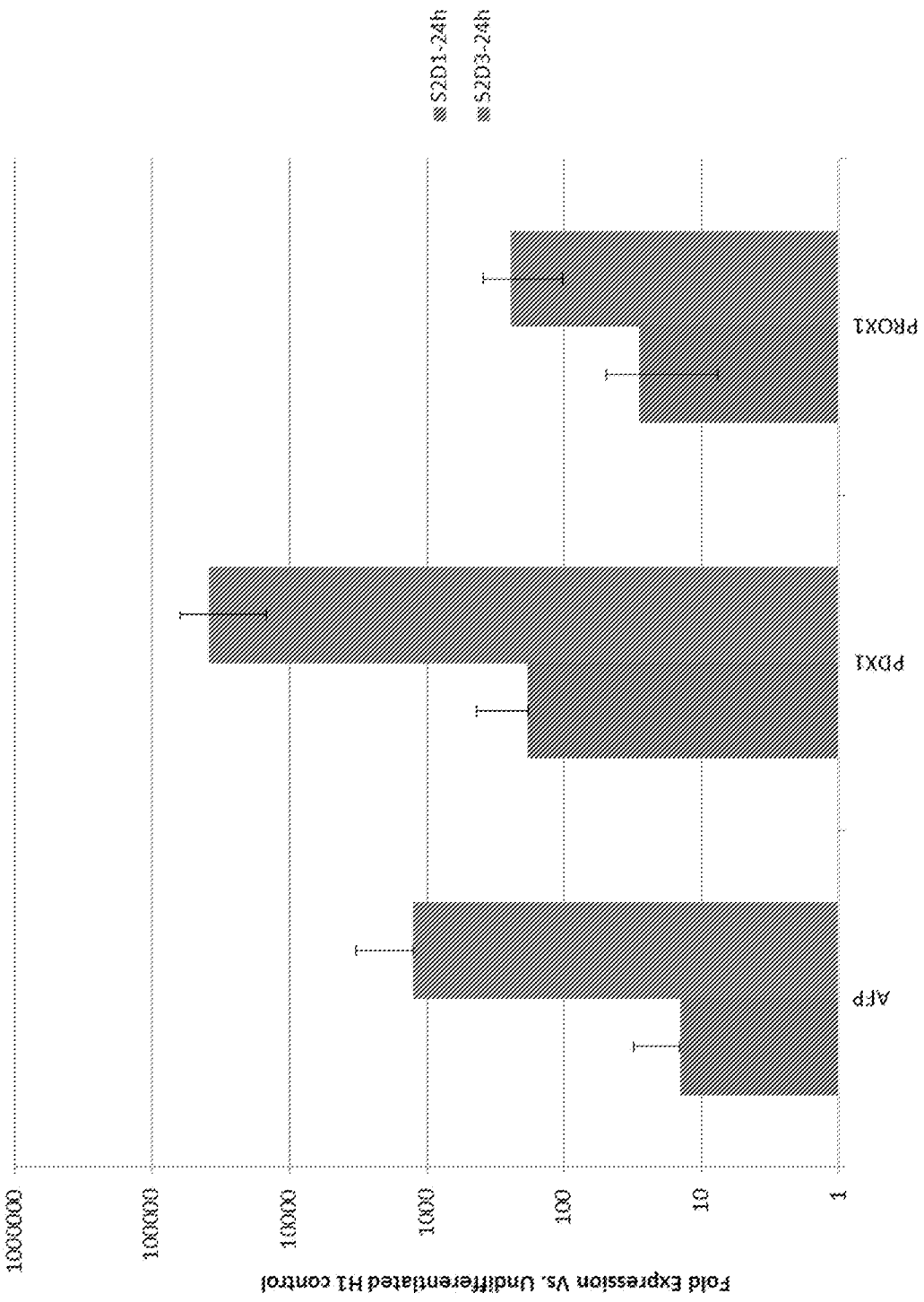
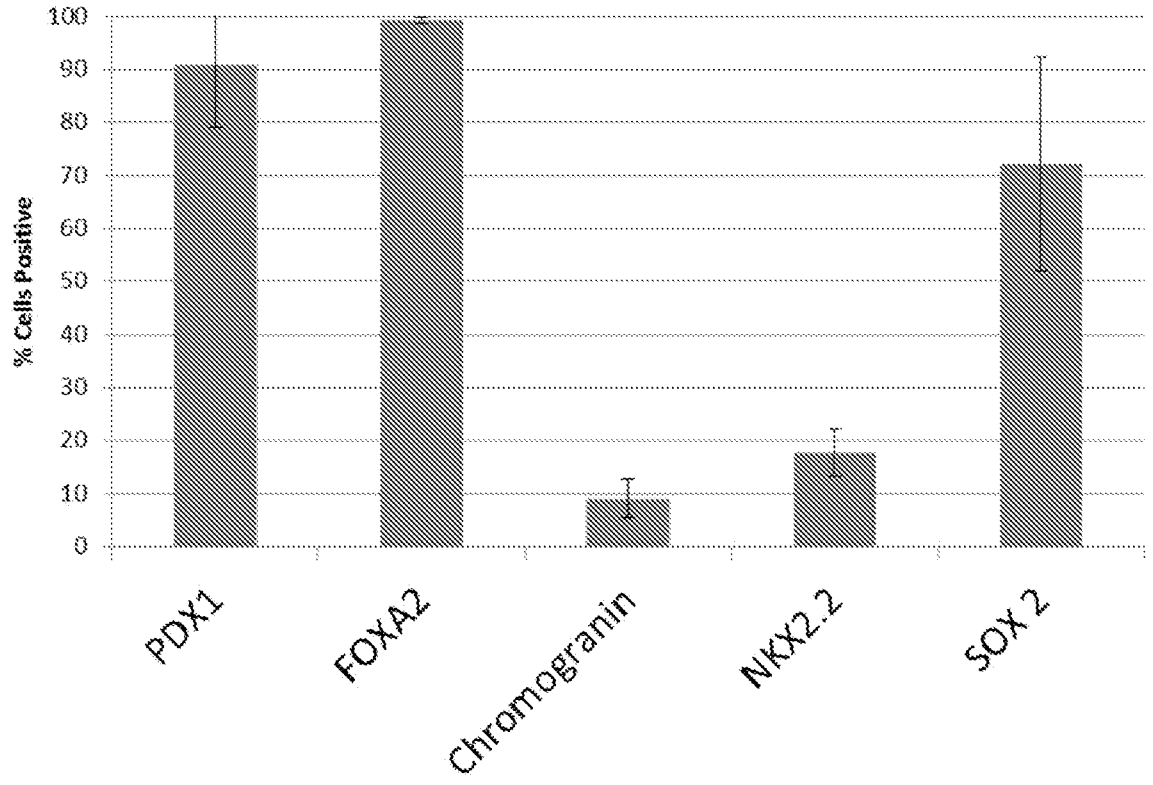


Figure 25: Average FACS results Stage 3 Day 3 (mean ± St. Dev.)



Pdx1	FoxA2	Chromogranin	Nkx 2.2	SOX 2
90.9	99.2	9.1	17.8	72.3
11.9	0.6	3.6	4.4	20.2

Figure 26: Stage 3 Day 1 and 3 expression (n=10, mean ± St. Dev.) by qRT-PCR S4 Array

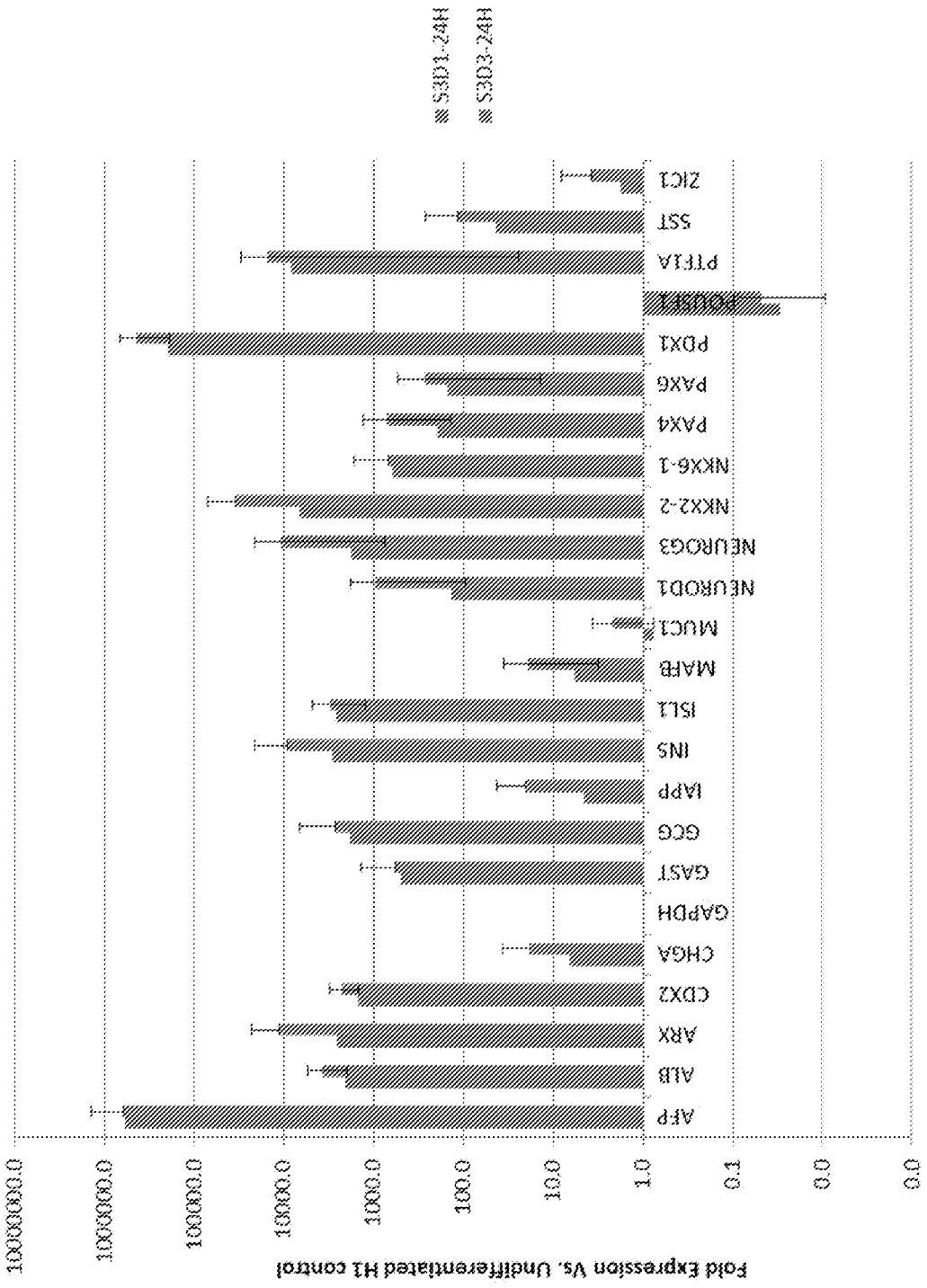
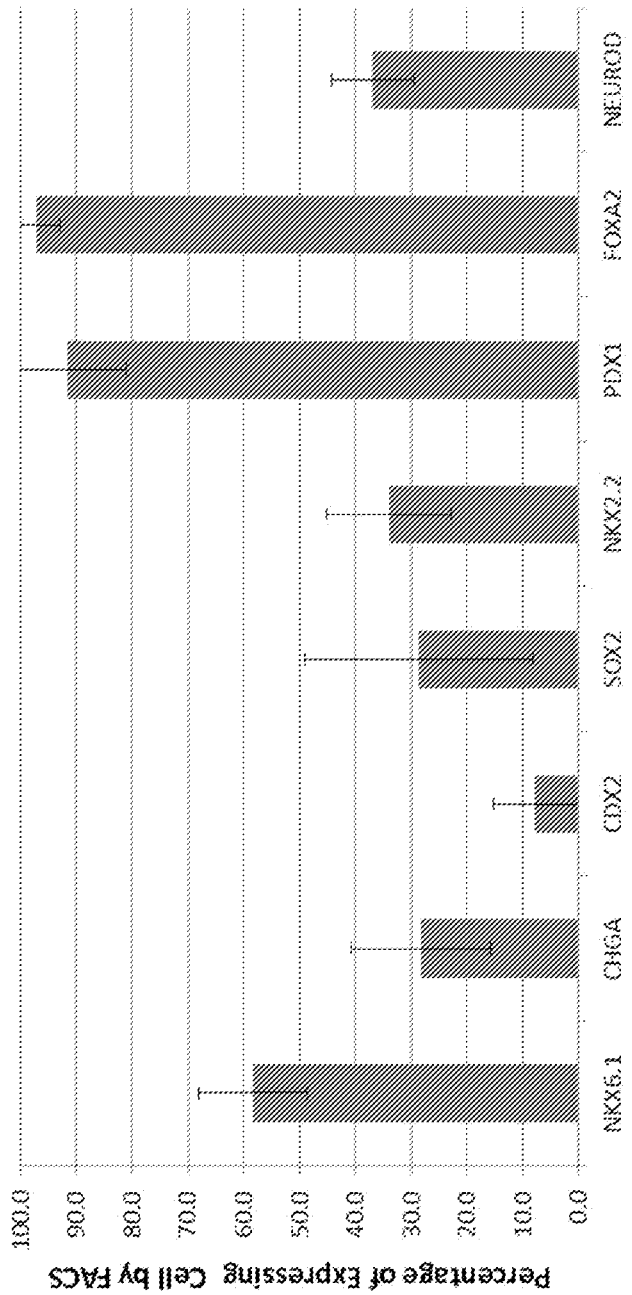


Figure 27: Average FACS results Stage 4 Day 3 (mean ± St. Dev.)



N=13	NKX6.1	CHGA	CDX2	SOX2	NKX2.2	PDX1	FOXA2	NEUROD
Overall Average	58.3	28.1	7.7	28.6	34.0	91.7	97.2	36.9
Overall Stdev	9.7	12.5	7.5	20.4	11.1	10.4	4.3	7.4

Figure 28: Stage 3 Day 3 and Stage 4 Days 1 and 3 expression (n=14, mean ± St. Dev.) by qRT-PCR S4 Array

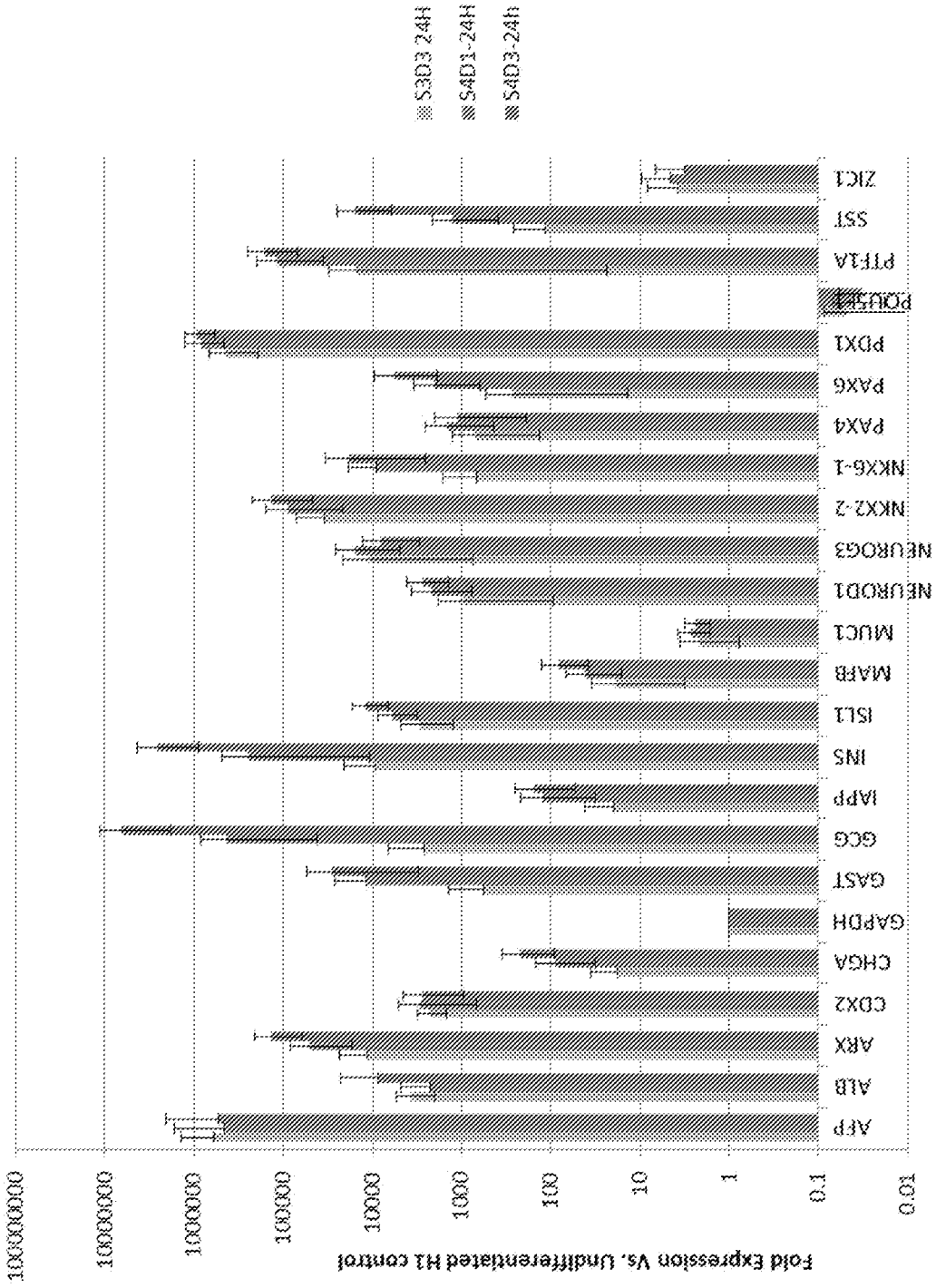


Figure 29: Average FACS results Stage 4 Day 3 (mean ± St. Dev.)

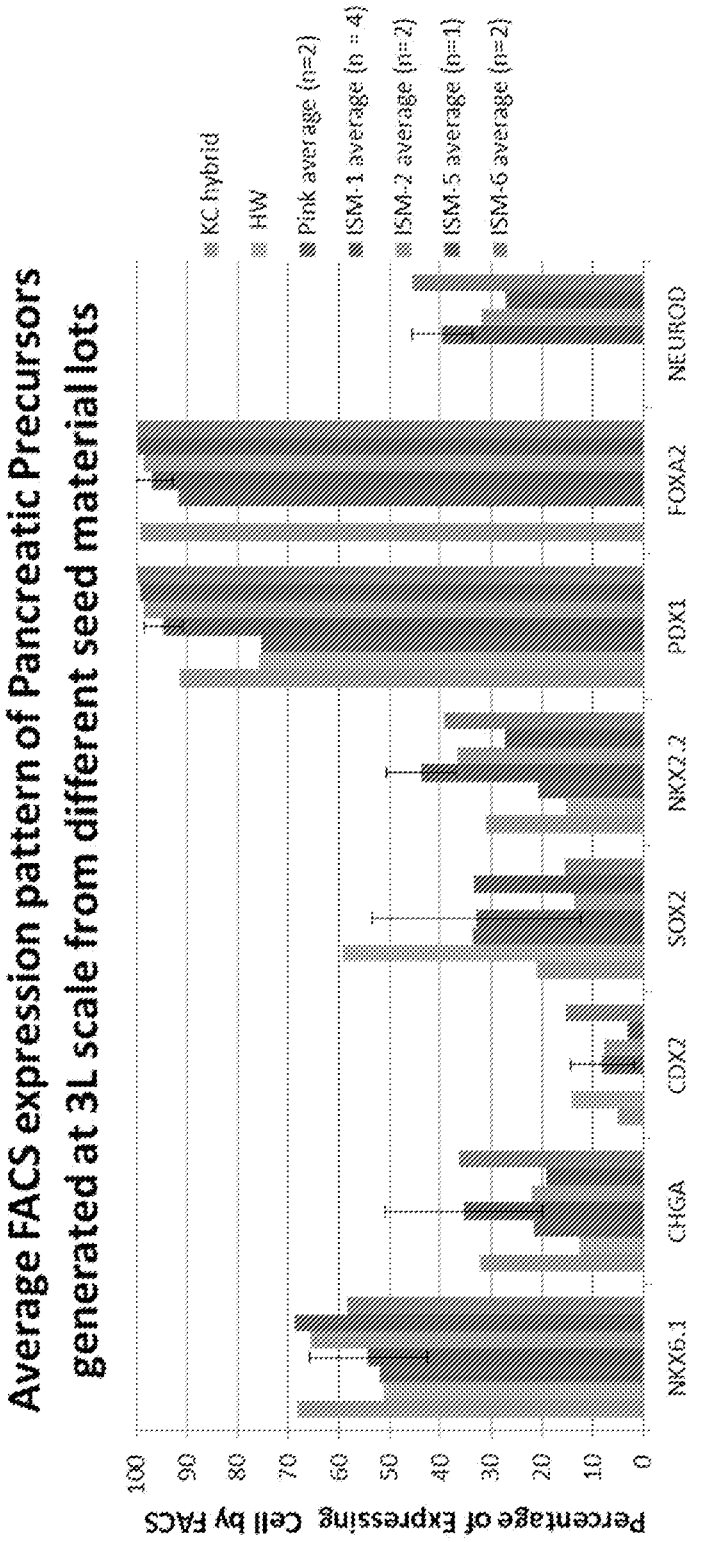


Figure 30: Average FACS results Stage 4 Day 3 (mean ± St. Dev.)

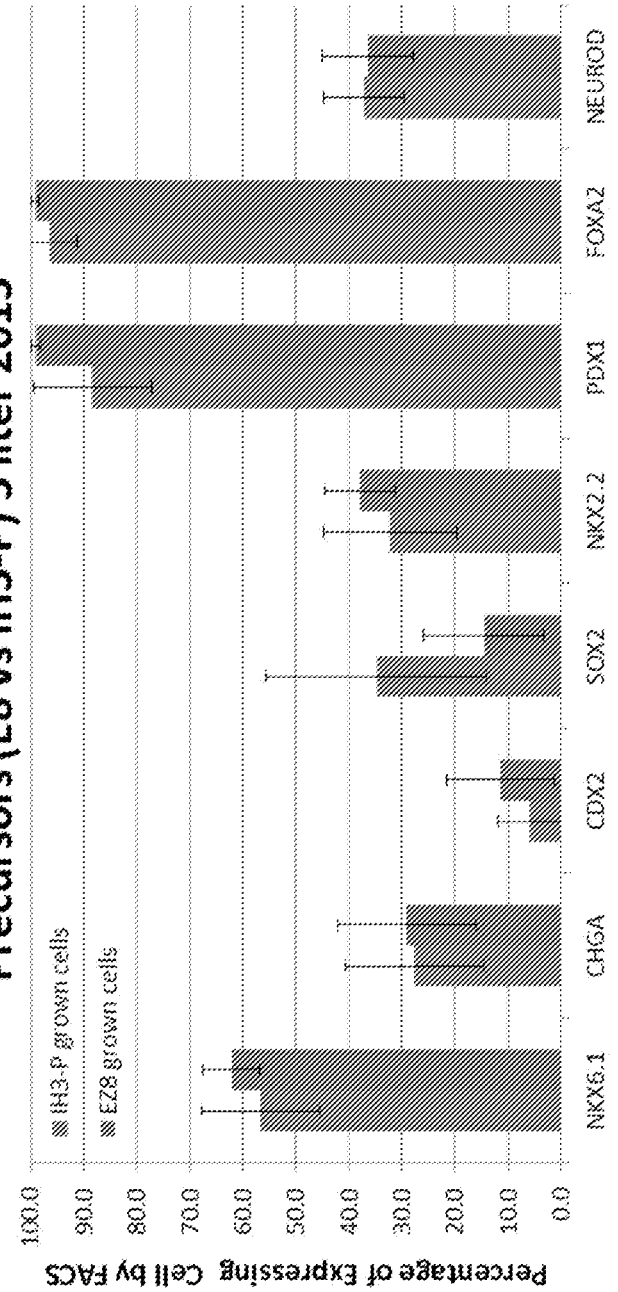


Figure 31: Average FACS results Stage 4 Day 3 (mean ± St. Dev.)

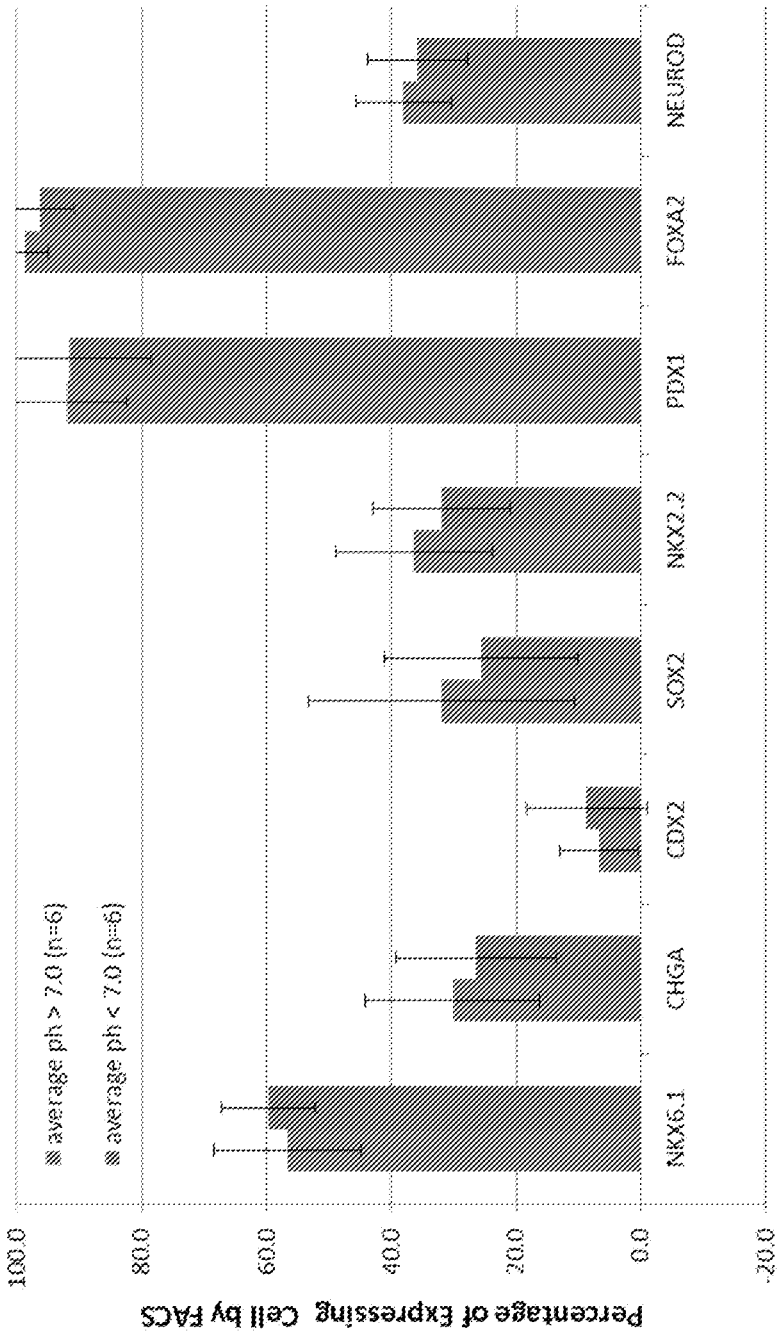


Figure 32: Average FACS results Stage 4 Day 3 (mean ± St. Dev.) vs. Run using Anti-Foam C

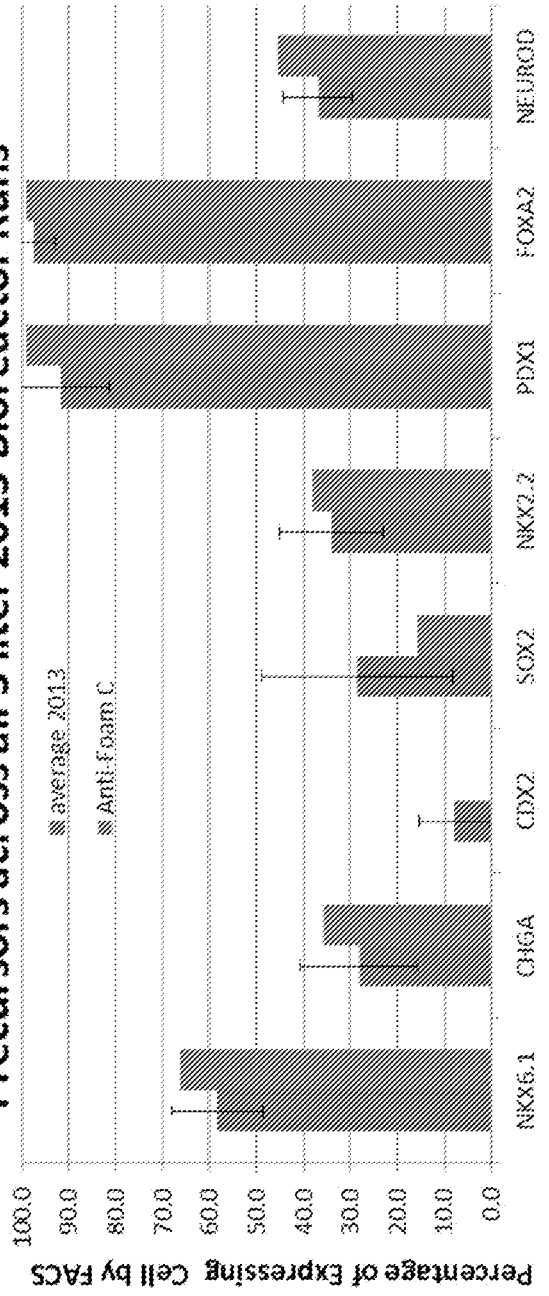


Figure 33: qRT-PCR Expression levels 24 hours prior to start of differentiation

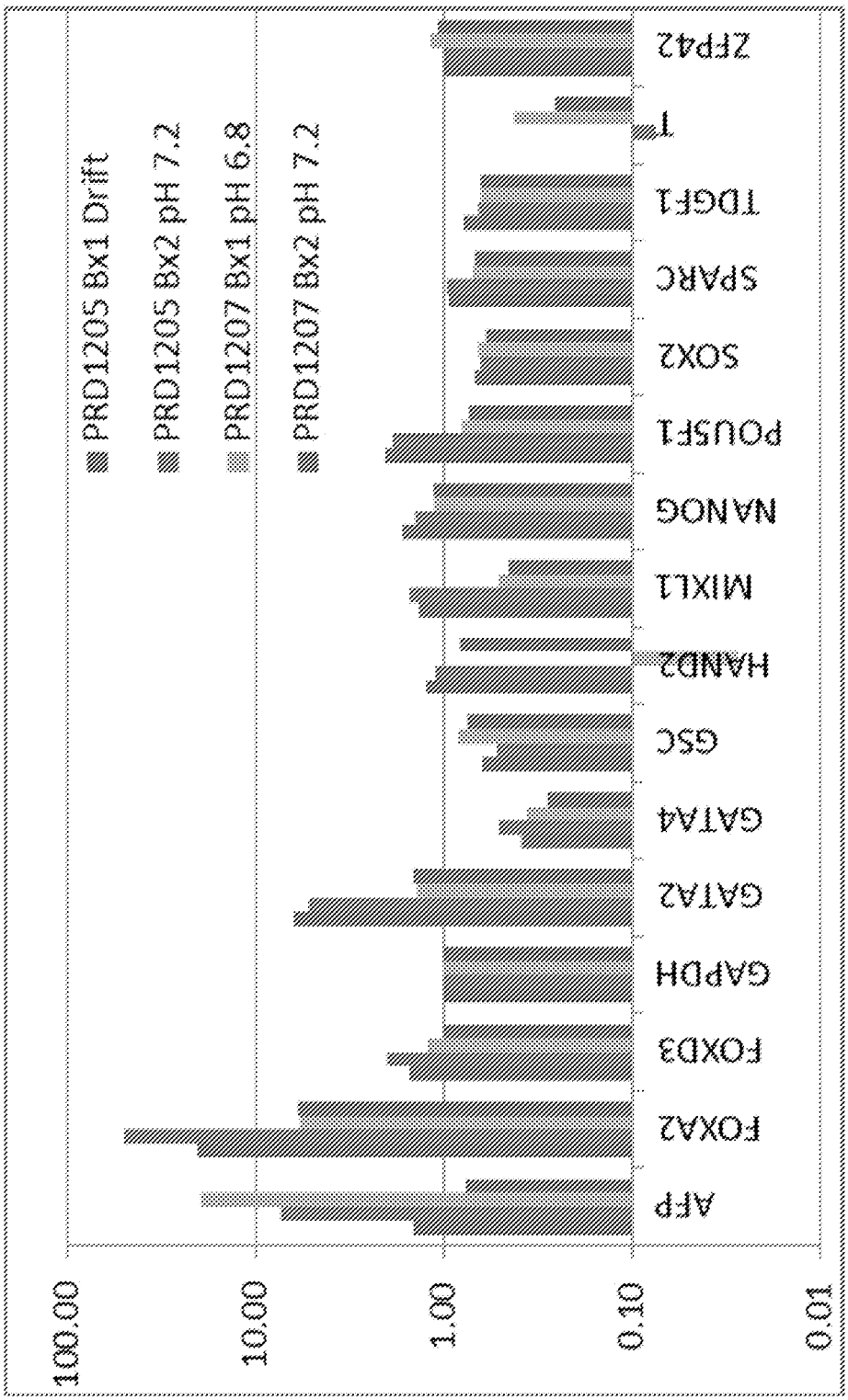


Figure 34: qRT-PCR Expression levels 24 hours after the start of differentiation

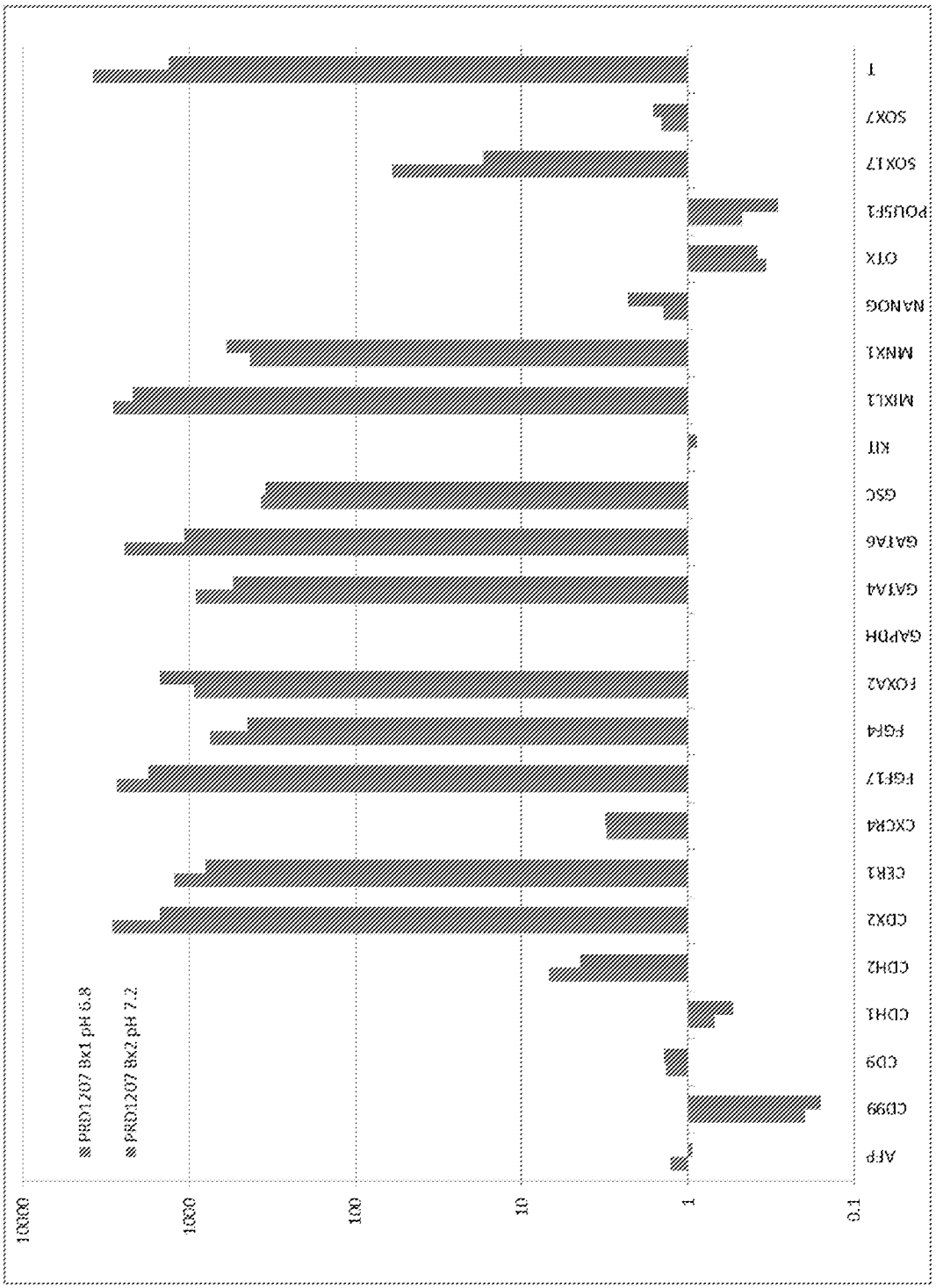


Figure 35: qRT-PCR Expression levels 72 hours after the start of differentiation

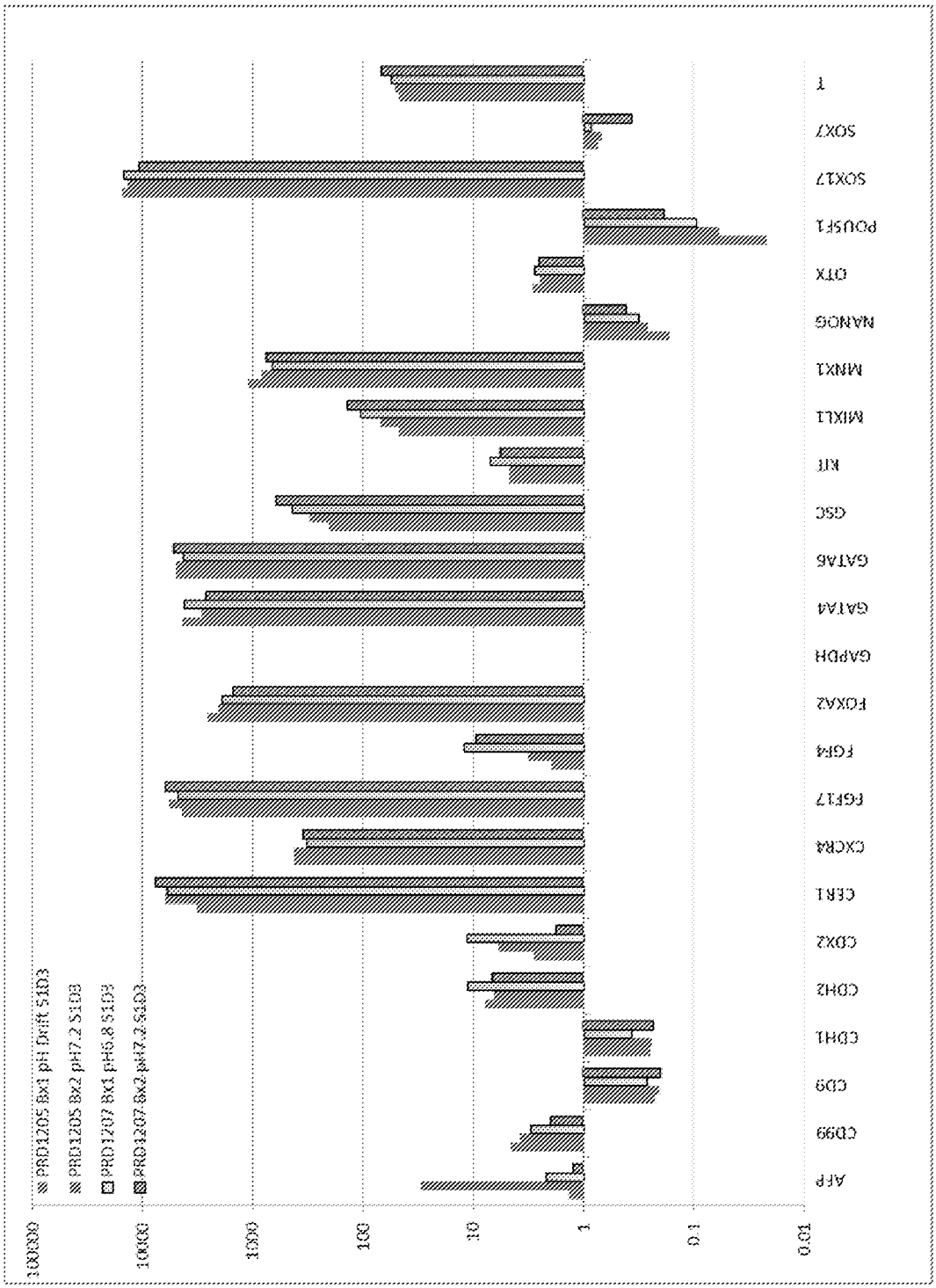


Figure 36(a): qRT-PCR Expression levels from Stage 2 to Stage 3 and 4 of differentiation

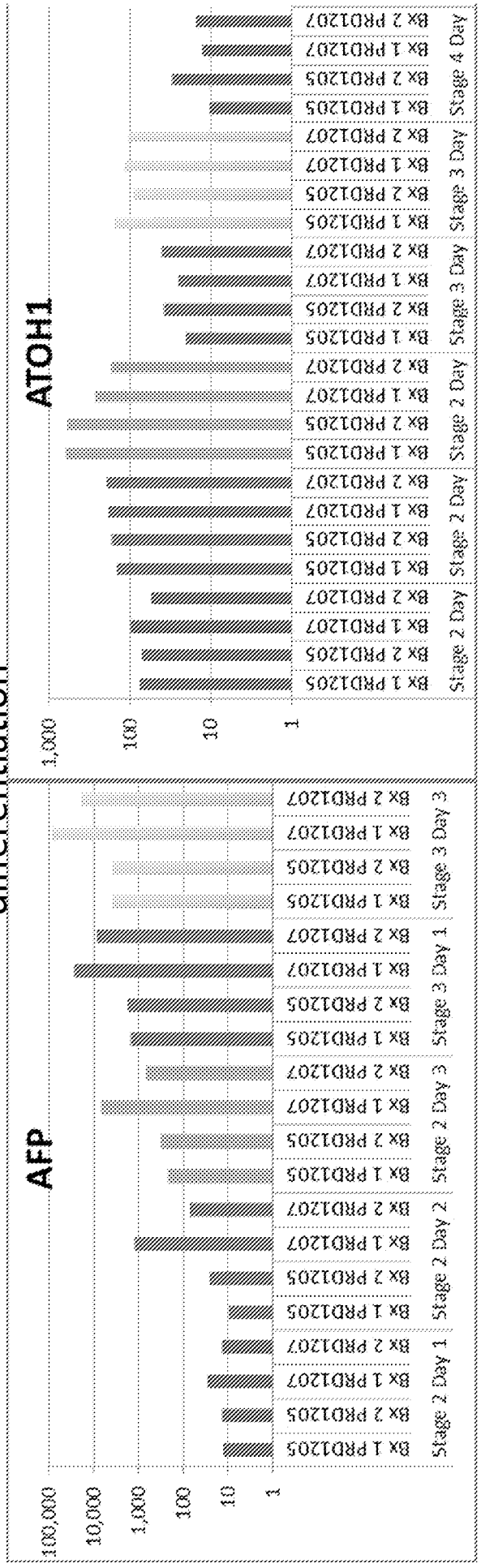


Figure 36(b) cont.: qRT-PCR Expression levels from Stage 2 to Stage 3 and 4 of differentiation

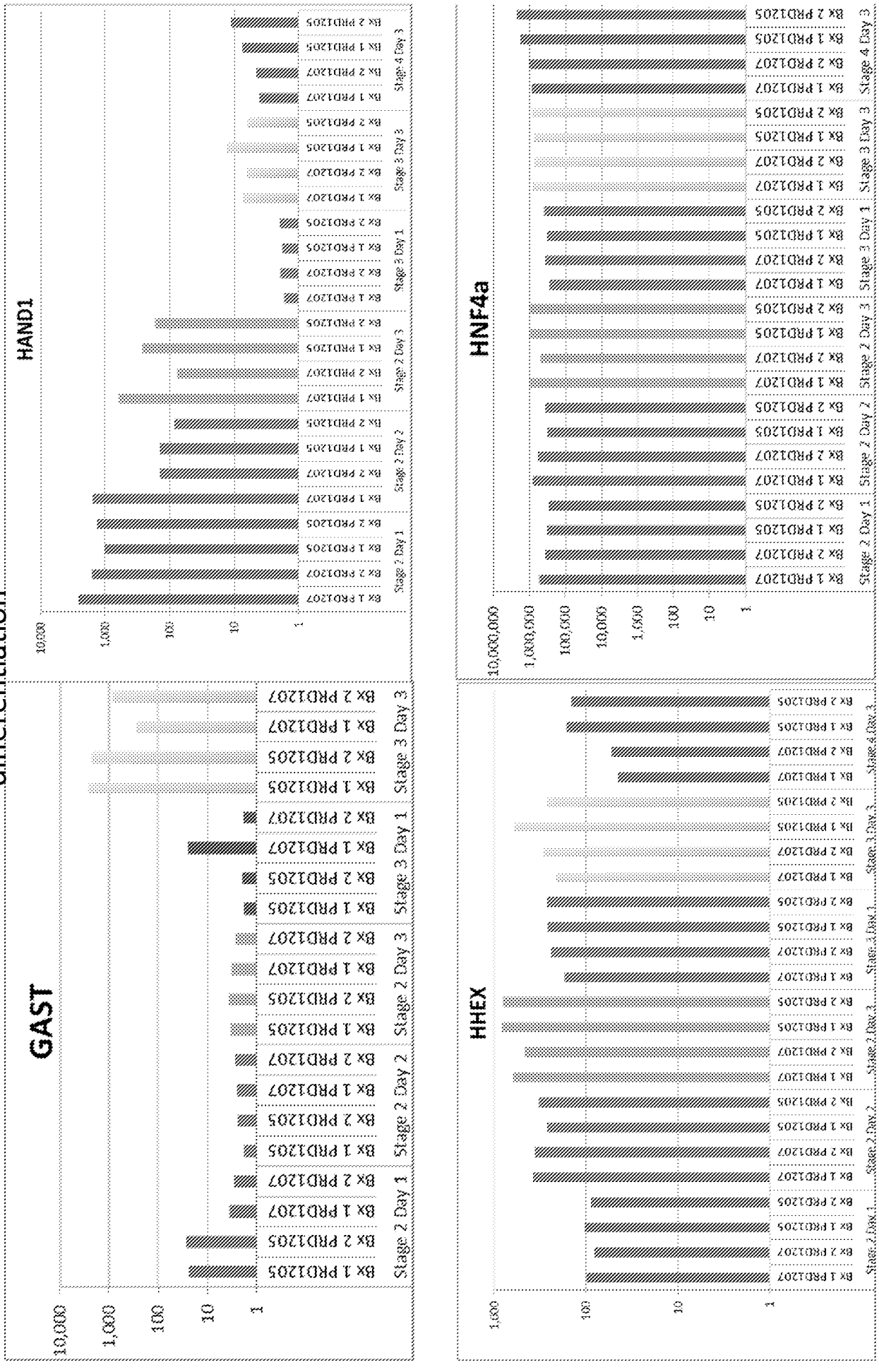


Figure 36(c) cont.: qRT-PCR Expression levels from Stage 2 to Stage 3 and 4 of differentiation

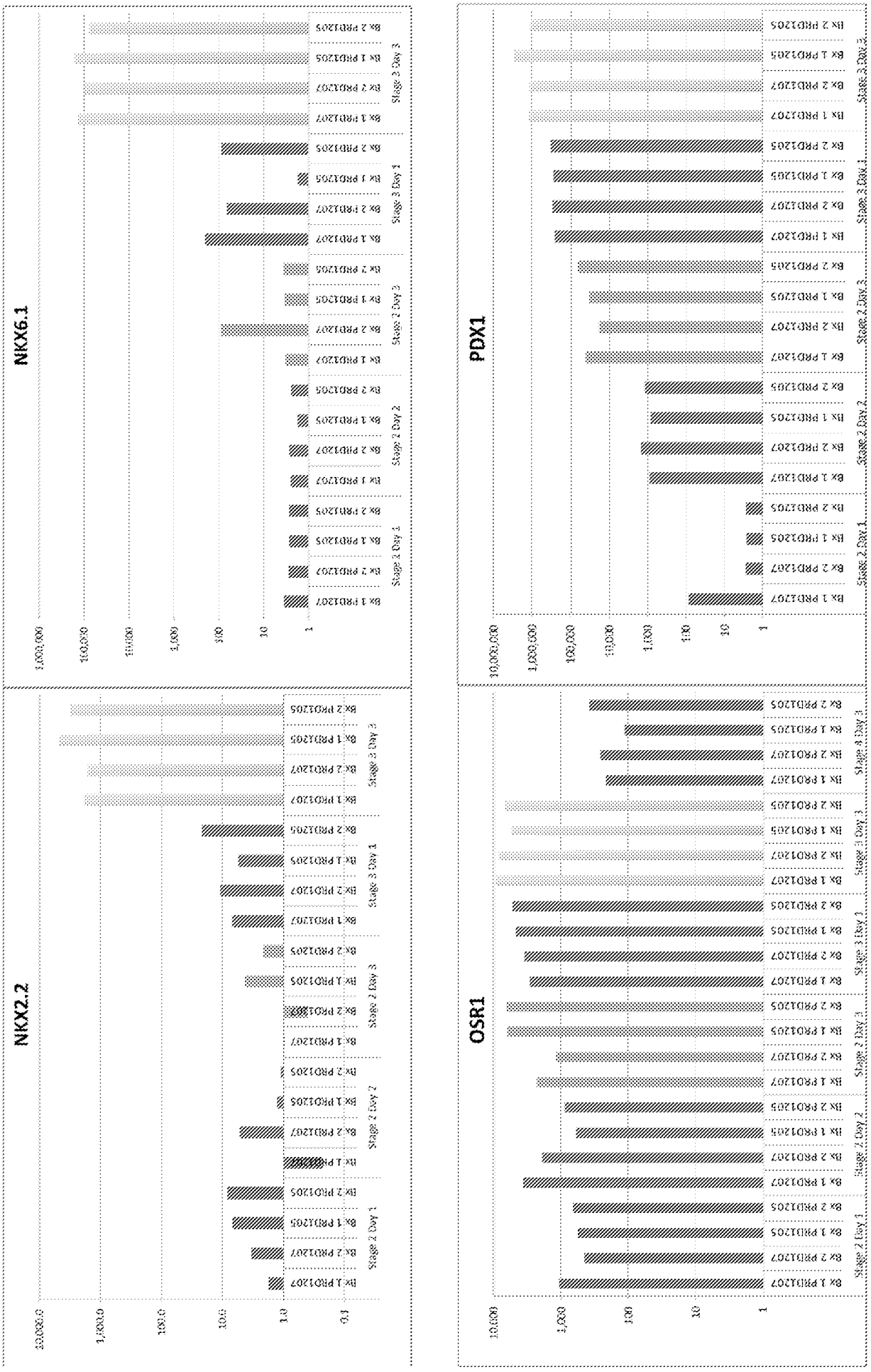


Figure 36(d) cont.: qRT-PCR Expression levels from Stage 2 to Stage 3 and 4 of differentiation

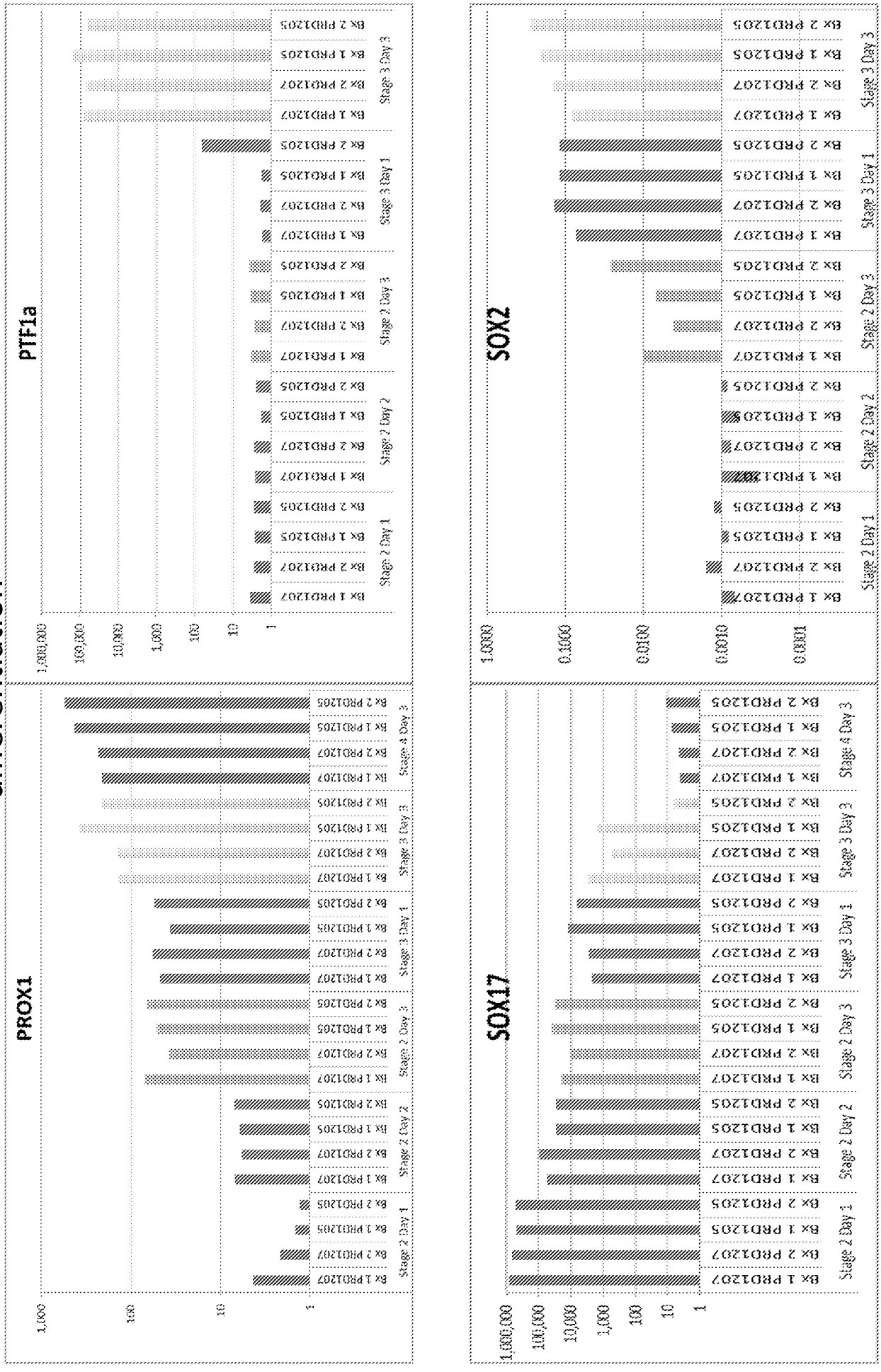


Figure 36(e) cont.: qRT-PCR Expression levels from Stage 2 to Stage 3 and 4 of differentiation

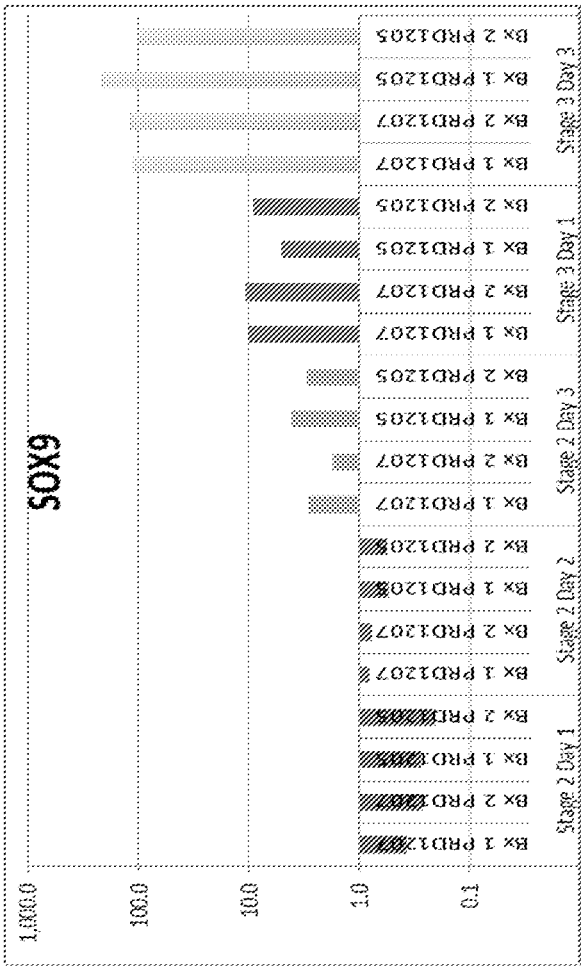


Figure 37: qRT-PCR Expression levels at Stage 4 Day 3 of differentiation

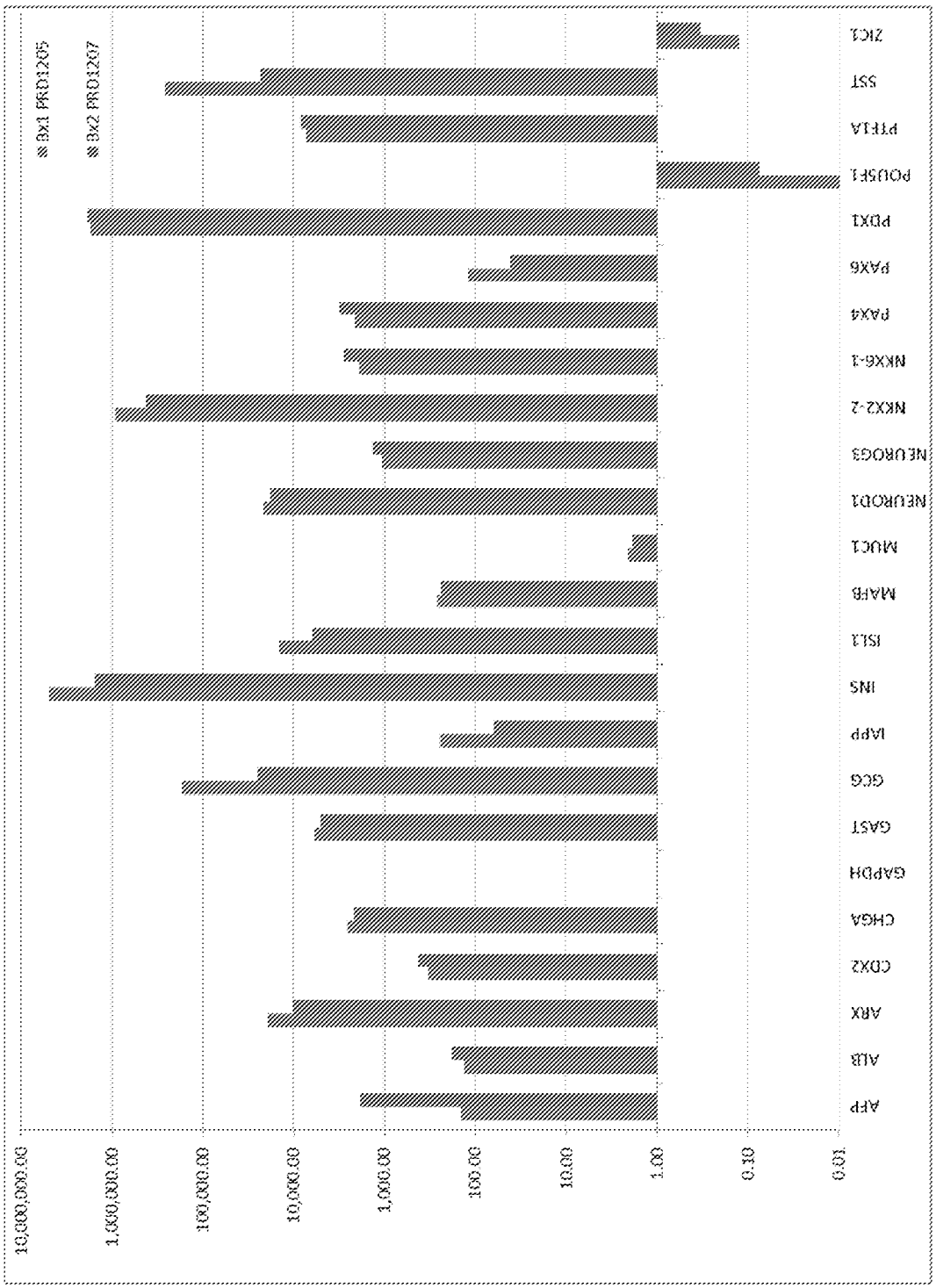


Figure 38: Cell Density in the bioreactor

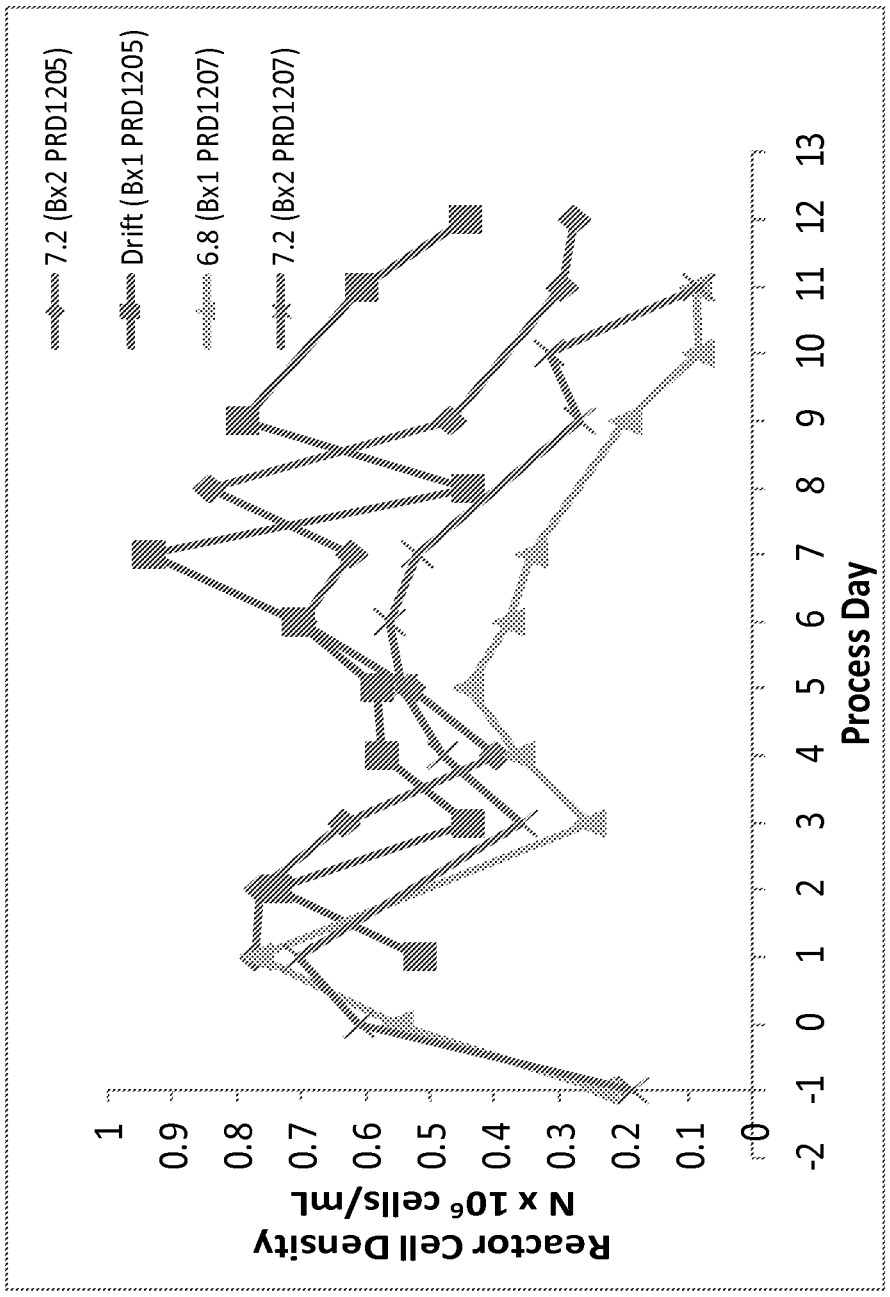


Figure 39(a): Stage 4 Day 3 bioreactor product function *in vivo*

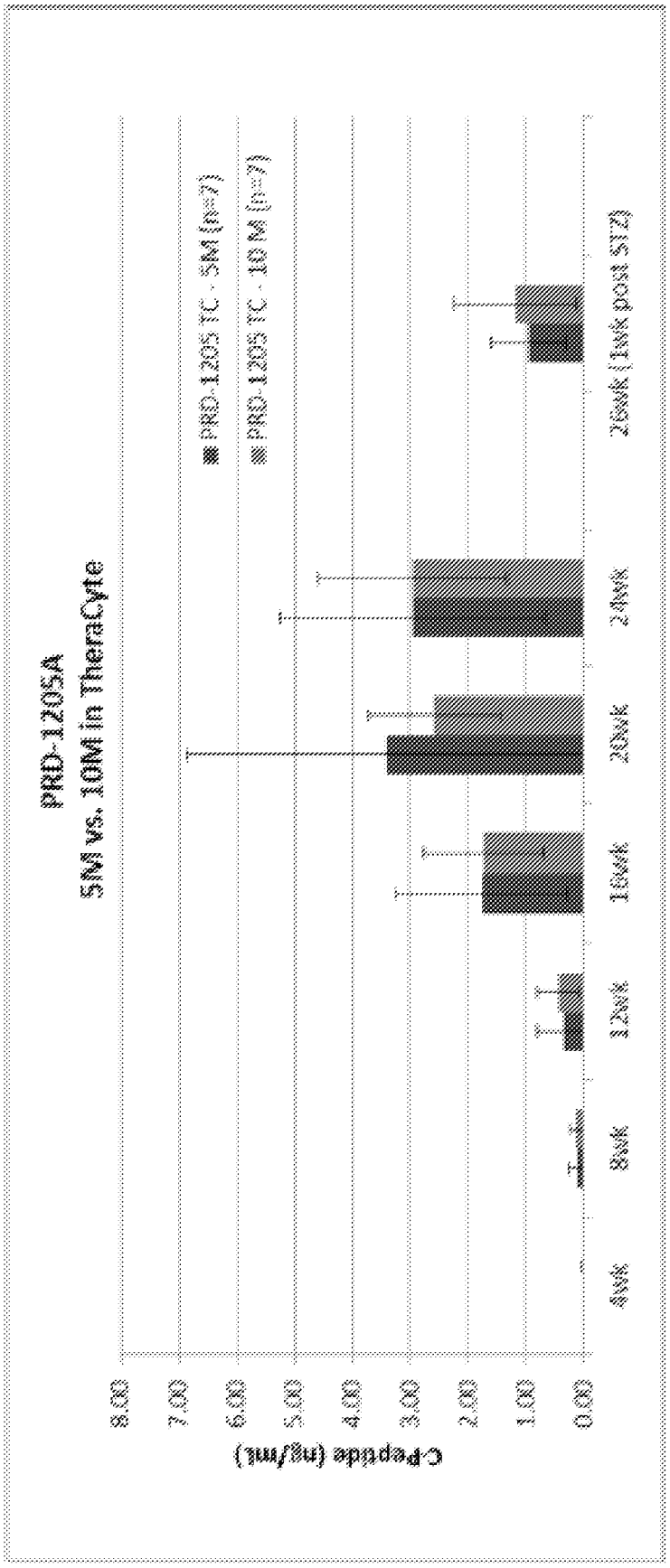


Figure 39(b): Stage 4 Day 3 bioreactor product function *in vivo*

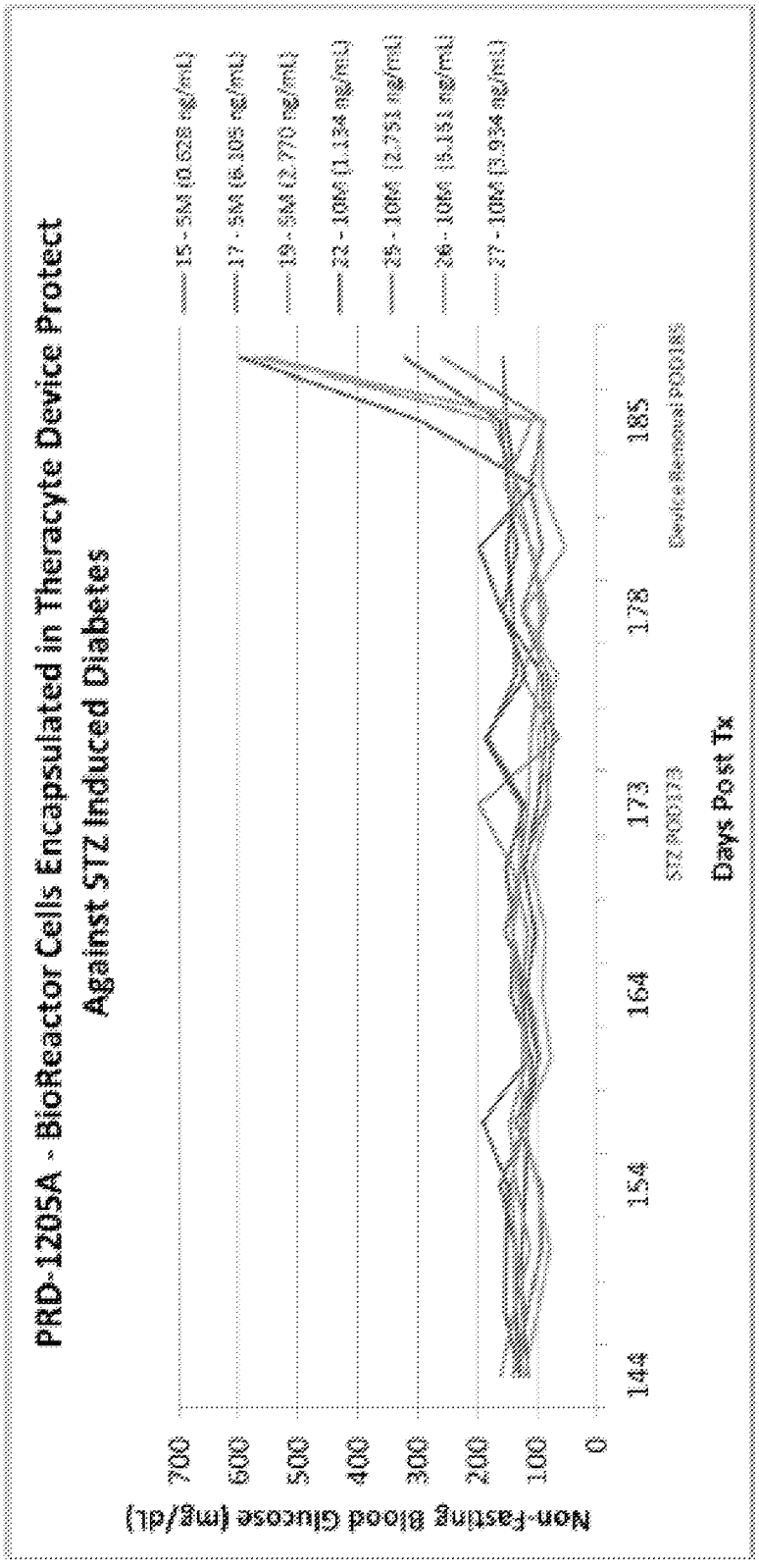


Figure 39(c): Stage 4 Day 3 bioreactor product function *in vivo*

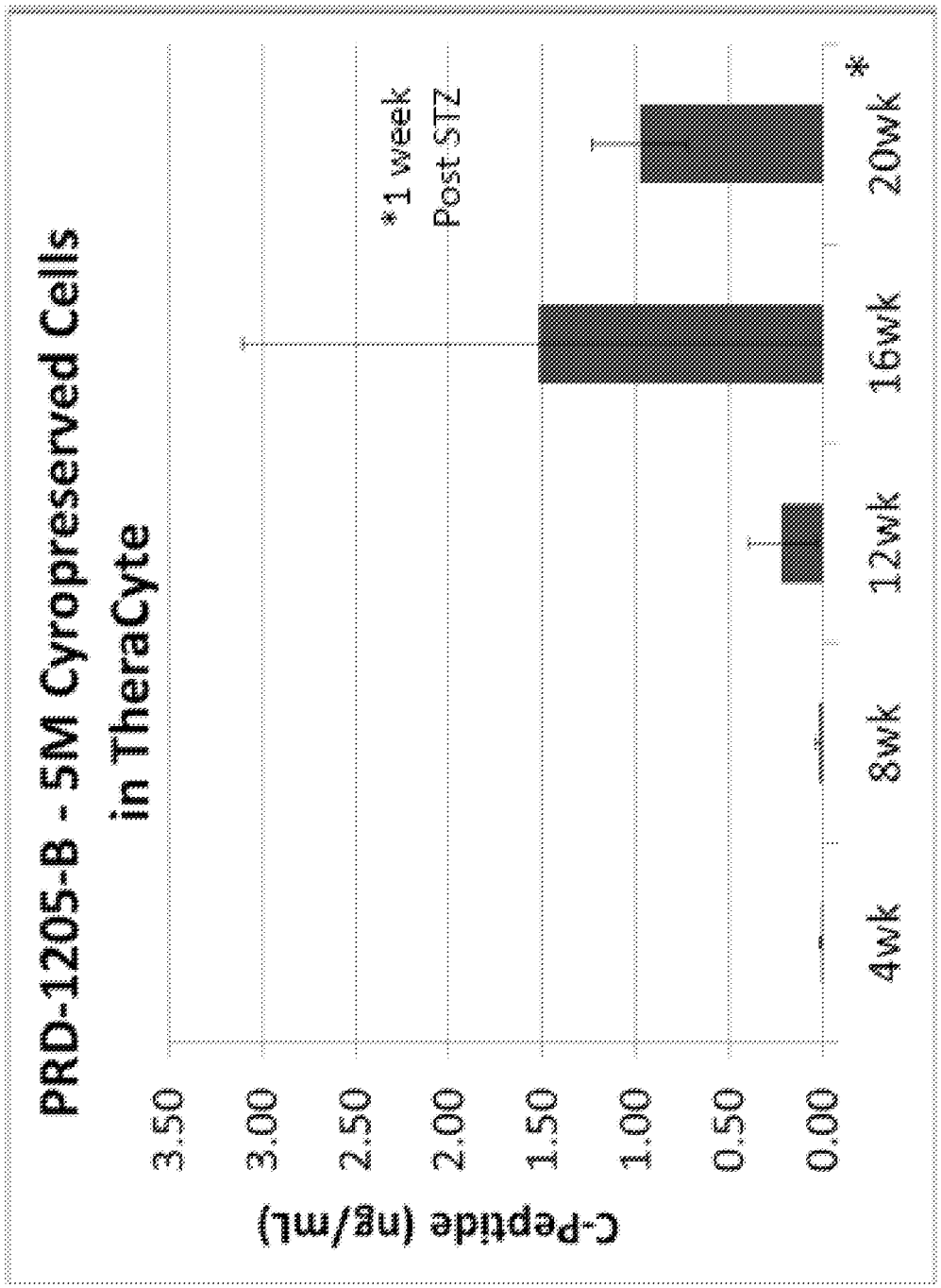


Figure 39(d): Stage 4 Day 3 bioreactor product function *in vivo*

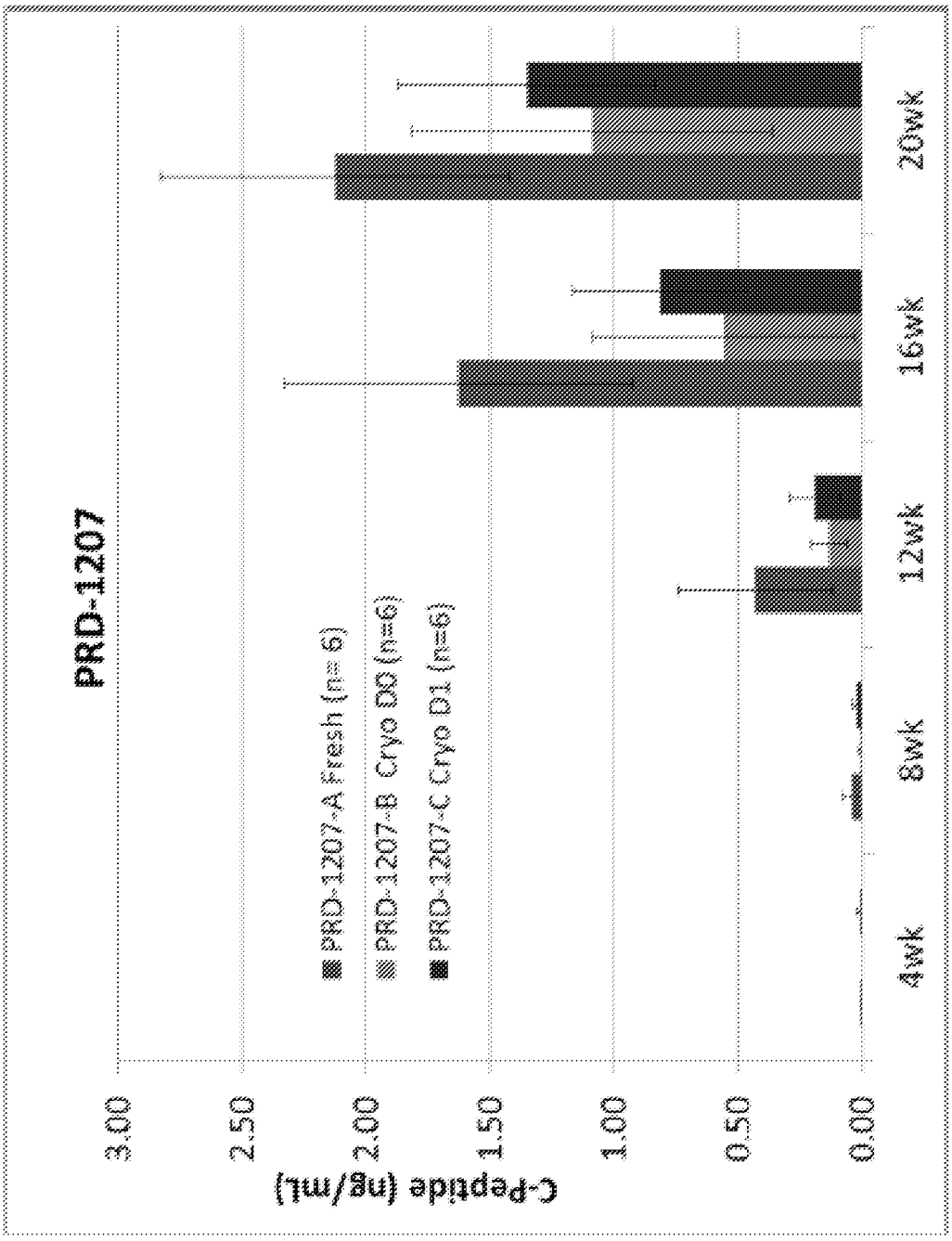


Figure 40A-D

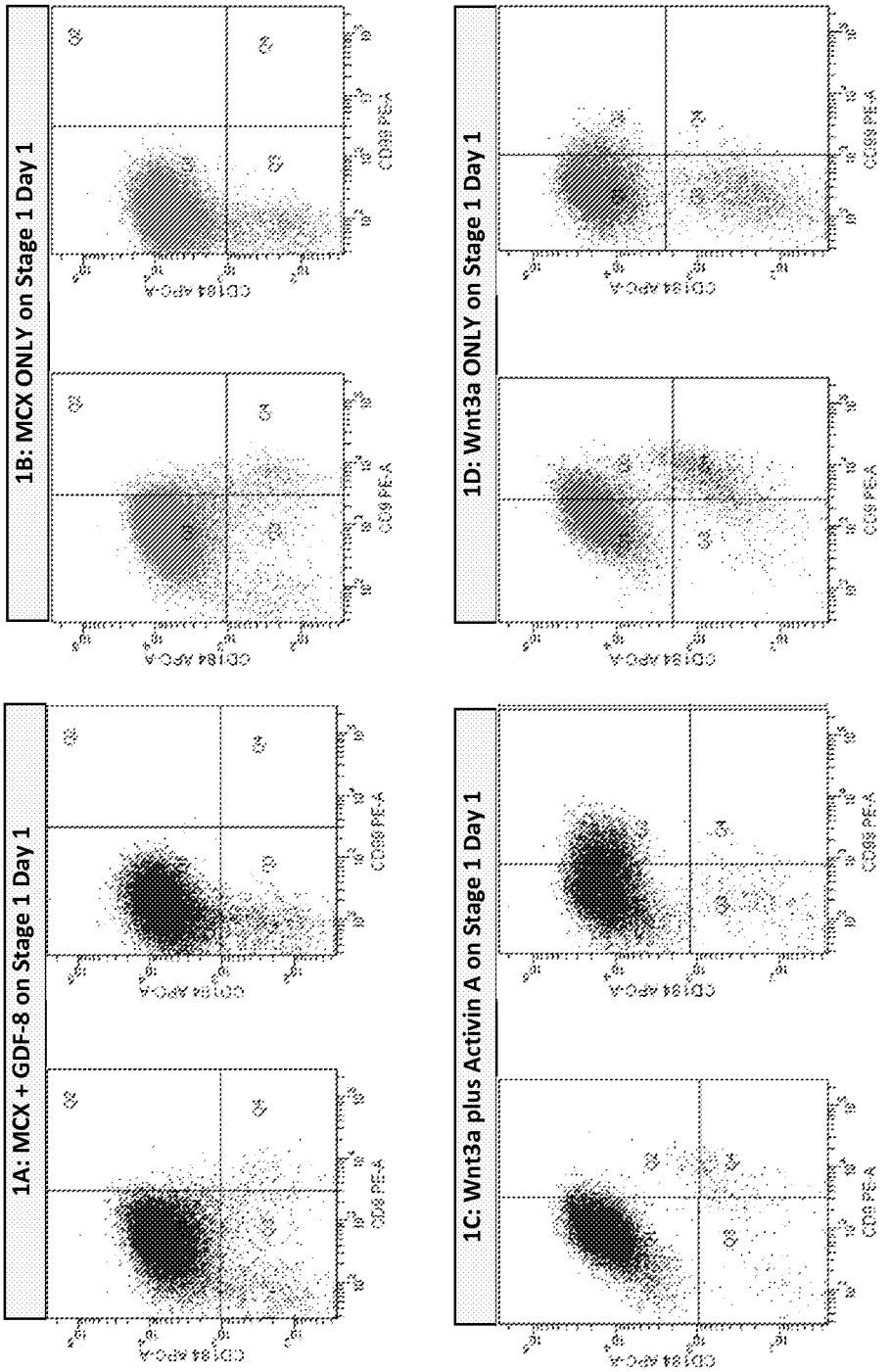

1A: MCX + GDF-8 on Stage 1 Day 1
1B: MCX ONLY on Stage 1 Day 1
1C: Wnt3a plus Activin A on Stage 1 Day 1
1D: Wnt3a ONLY on Stage 1 Day 1
CD184 APC-A
CD8 PE-A
CD9 PE-A
CD99 PE-A

Figure 41 (a-d)

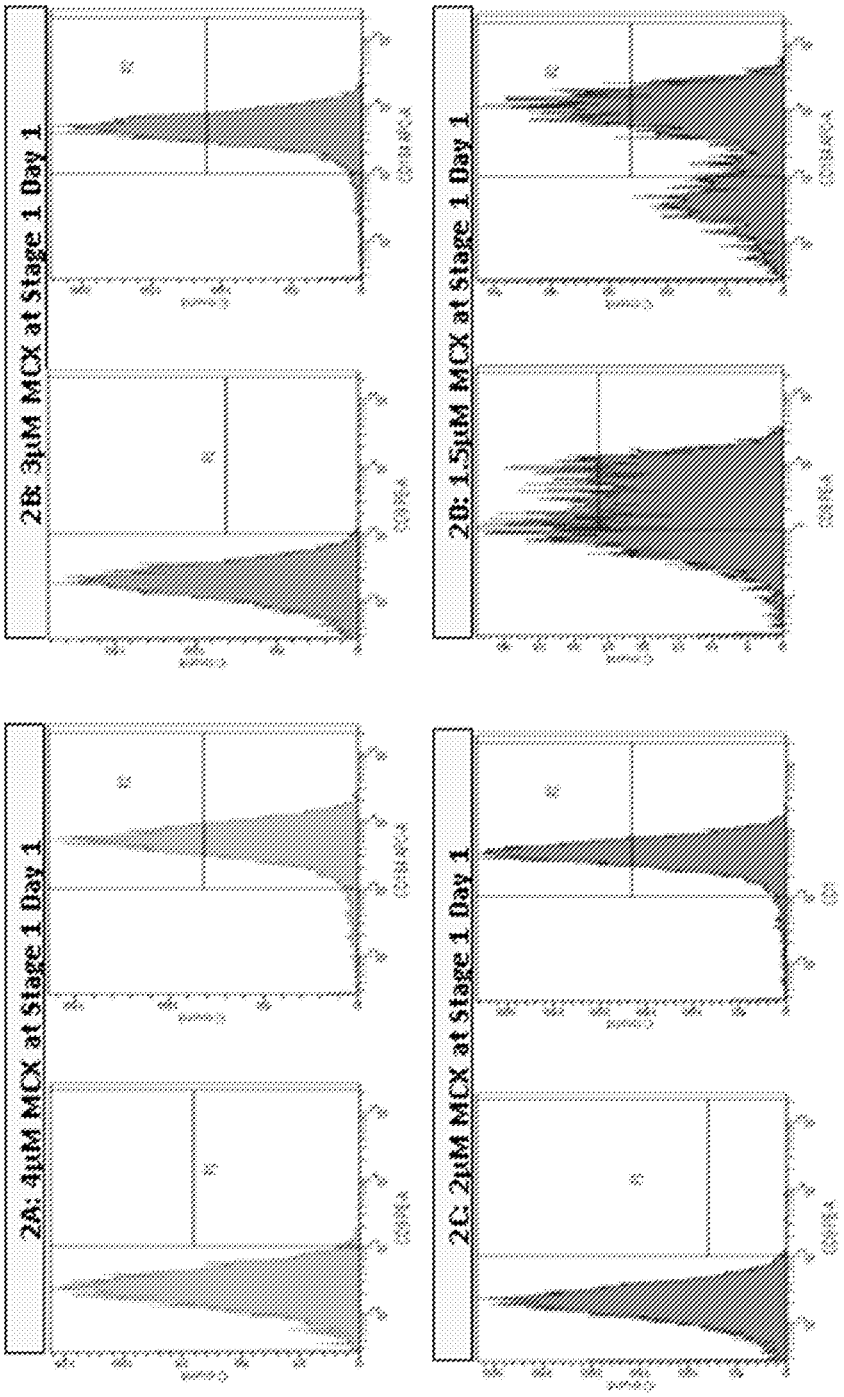

2A: 4μM MCX at Stage 1 Day 1
2B: 3μM MCX at Stage 1 Day 1
2C: 2μM MCX at Stage 1 Day 1
2D: 1.5μM MCX at Stage 1 Day 1

Figure 42 (a-b)

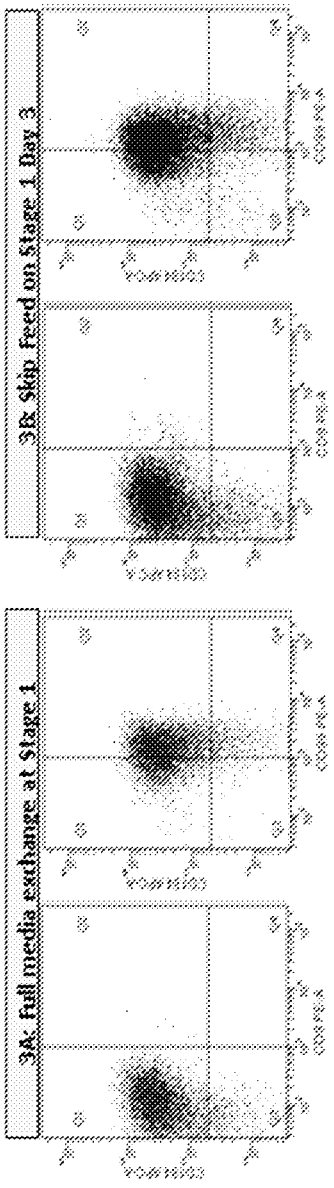


Figure 43 (a-b)

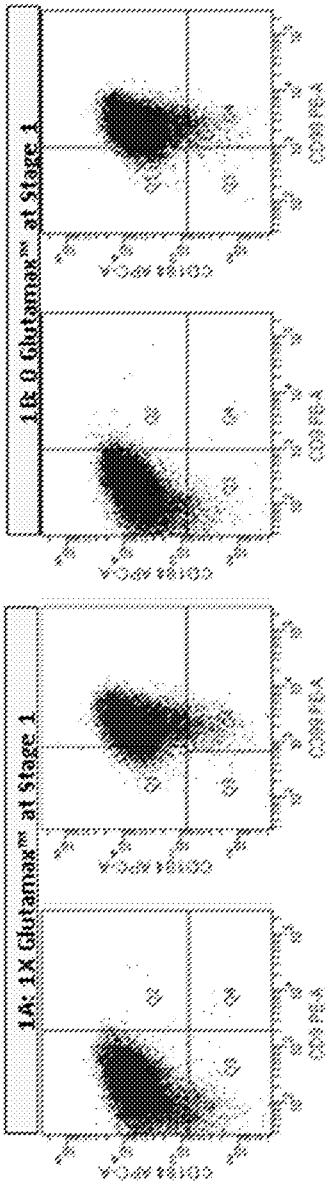

1X Glutamax™ at Stage 1
1X 0 Glutamax™ at Stage 1
CD4+
CD8+
CD45RA
CCR7

Figure 44 (a-b)

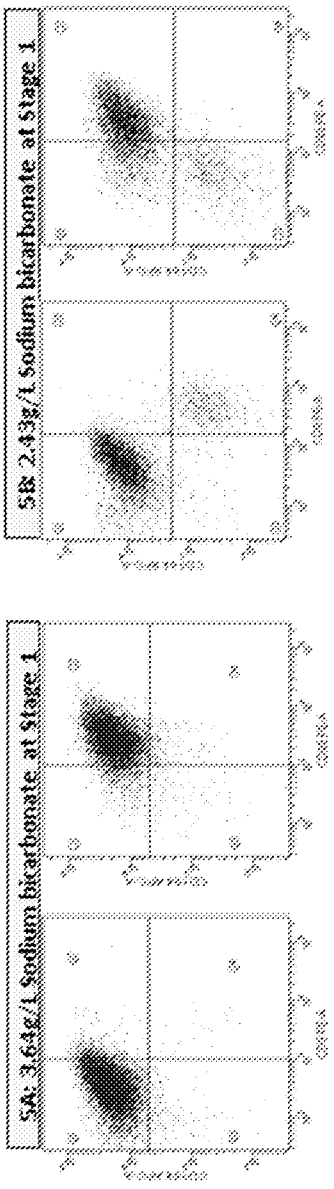

5A: 3.64g/L Sodium bicarbonate at Stage 1
5B: 2.43g/L Sodium bicarbonate at Stage 1

Figure 44 (c-d)

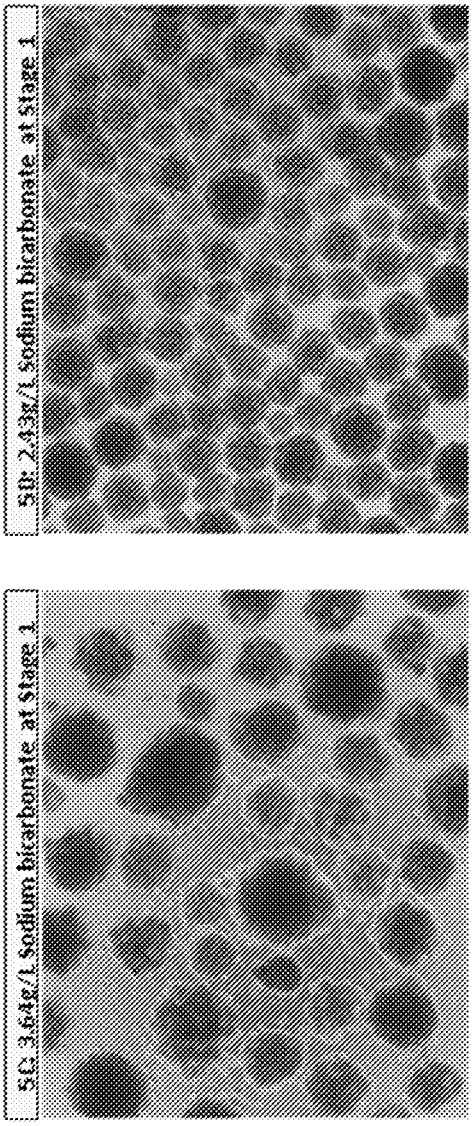

5b: 2.43g/L Sodium bicarbonate at Stage 1
5c: 3.64g/L Sodium bicarbonate at Stage 1

Figure 45: Daily Counts for Cell Density

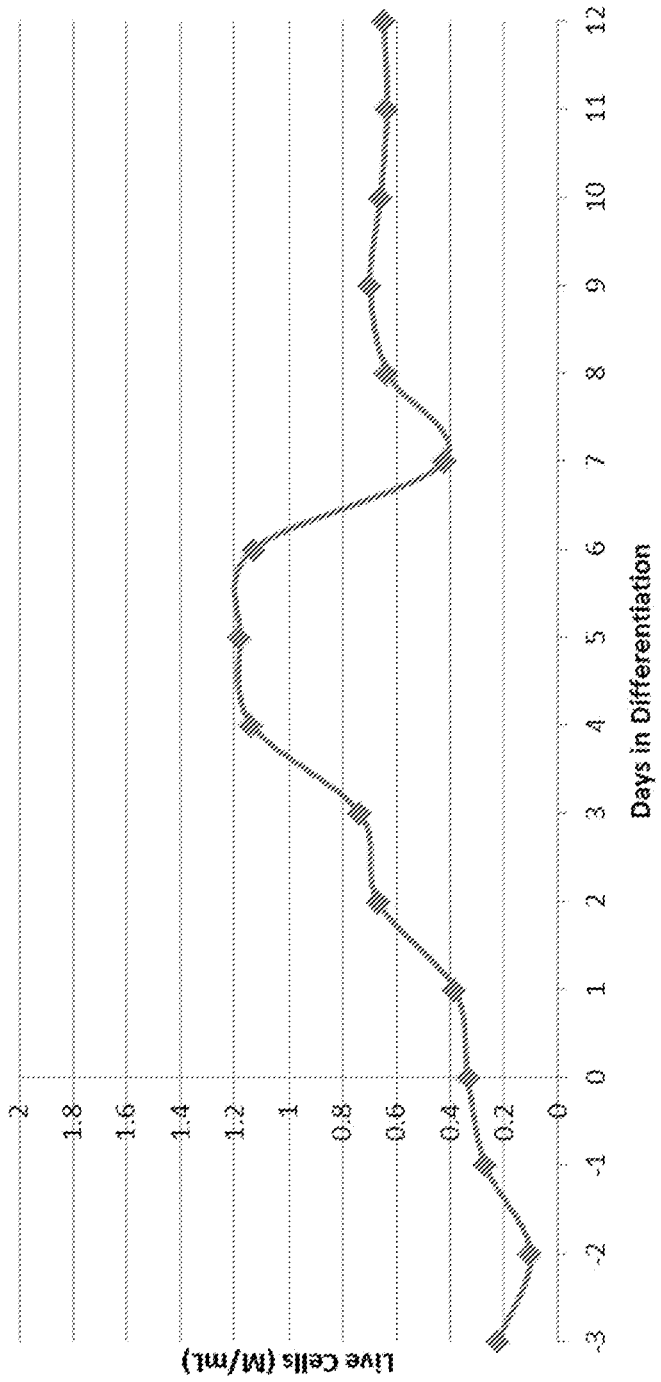


Figure 46: Daily Media Sampling for pH

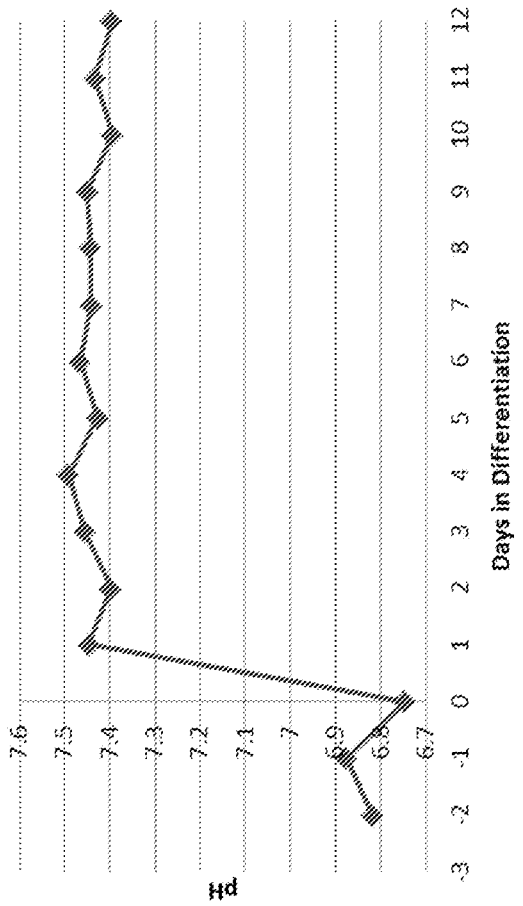


Figure 47: Daily Media Sampling for glucose (g/L)

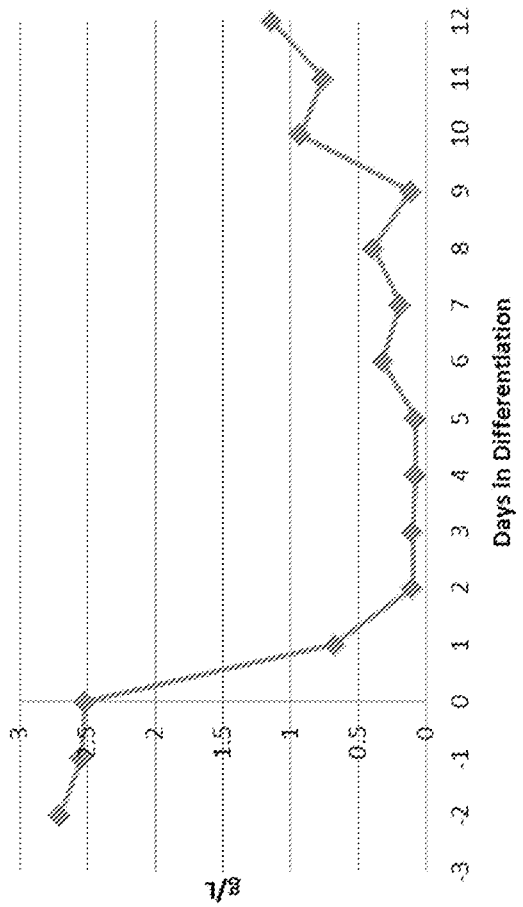


Figure 48: Daily Media Sampling for lactate (g/L)

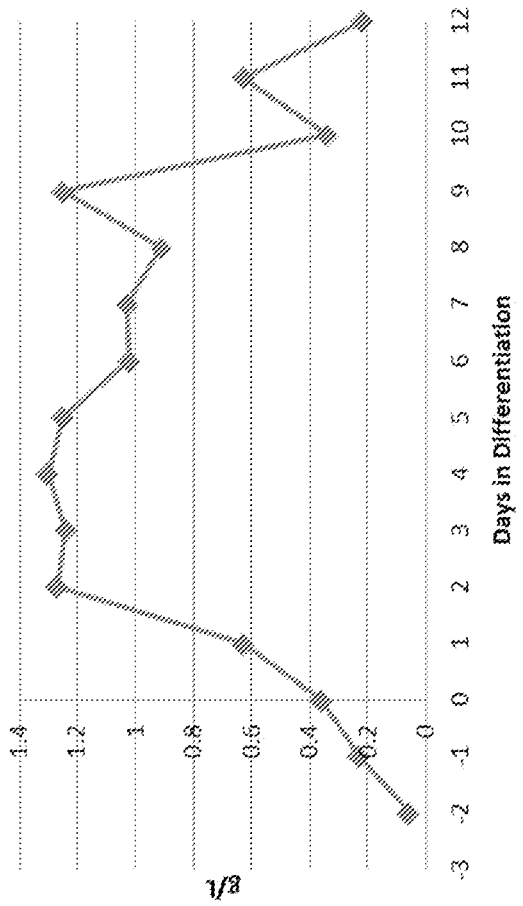


Figure 49: Daily Stage 0 and 1 Expression by qRT-PCR, Pluripotency Array

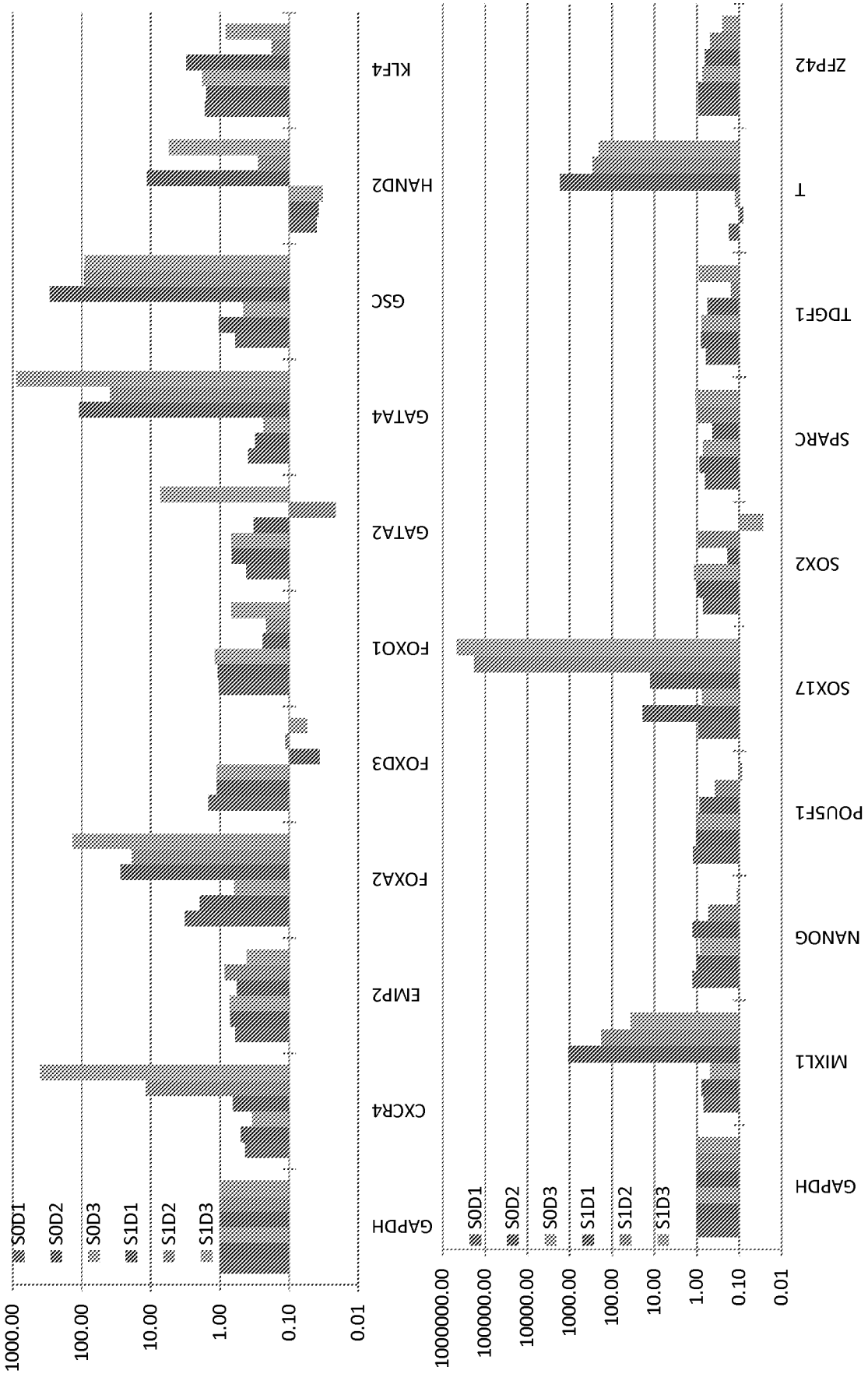


Figure 50: Daily Stage 0, 1, and 2 Expression by qRT-PCR, DE Array

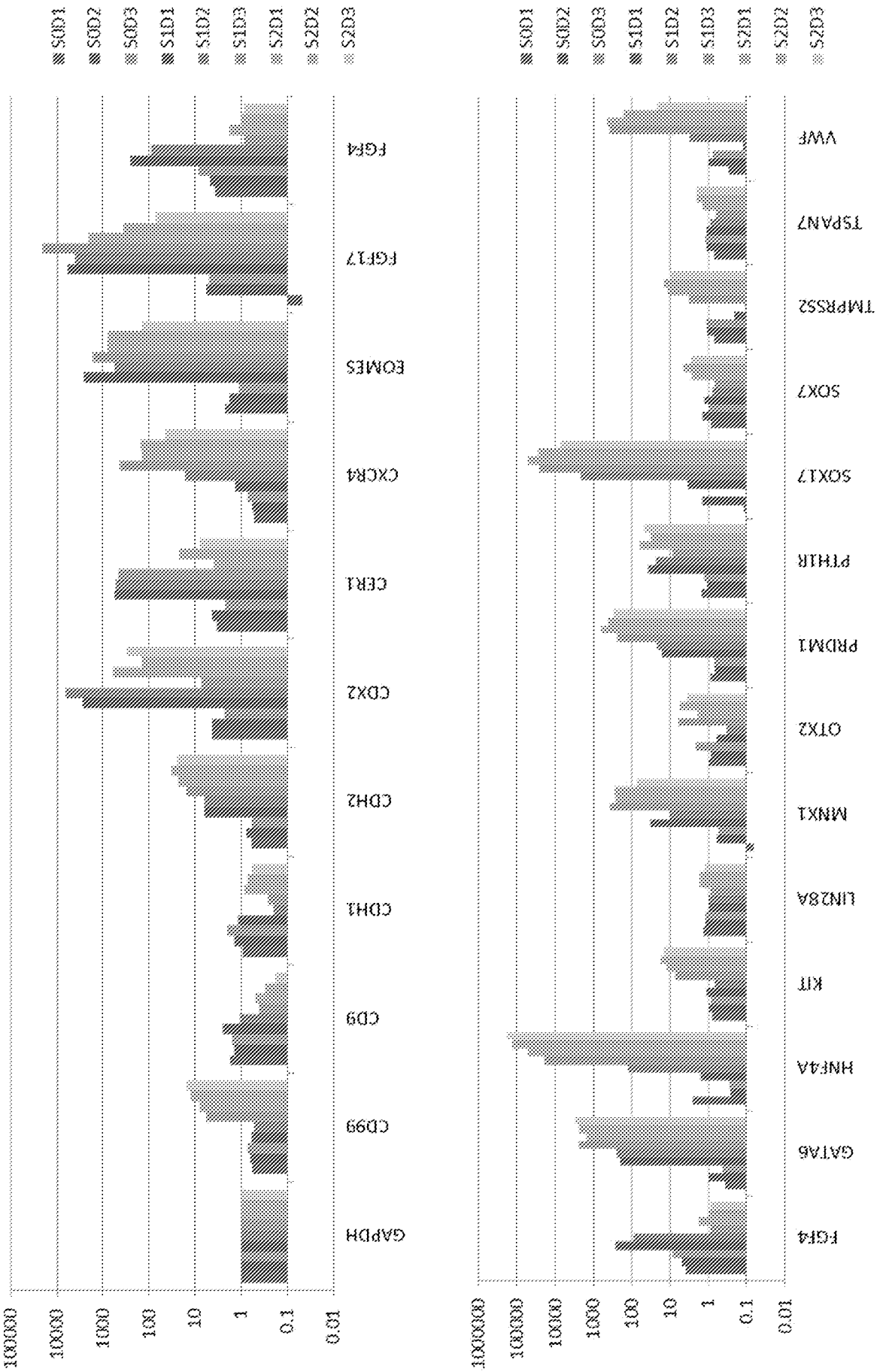


Figure 51: Pluripotent Cell Expression by FACS

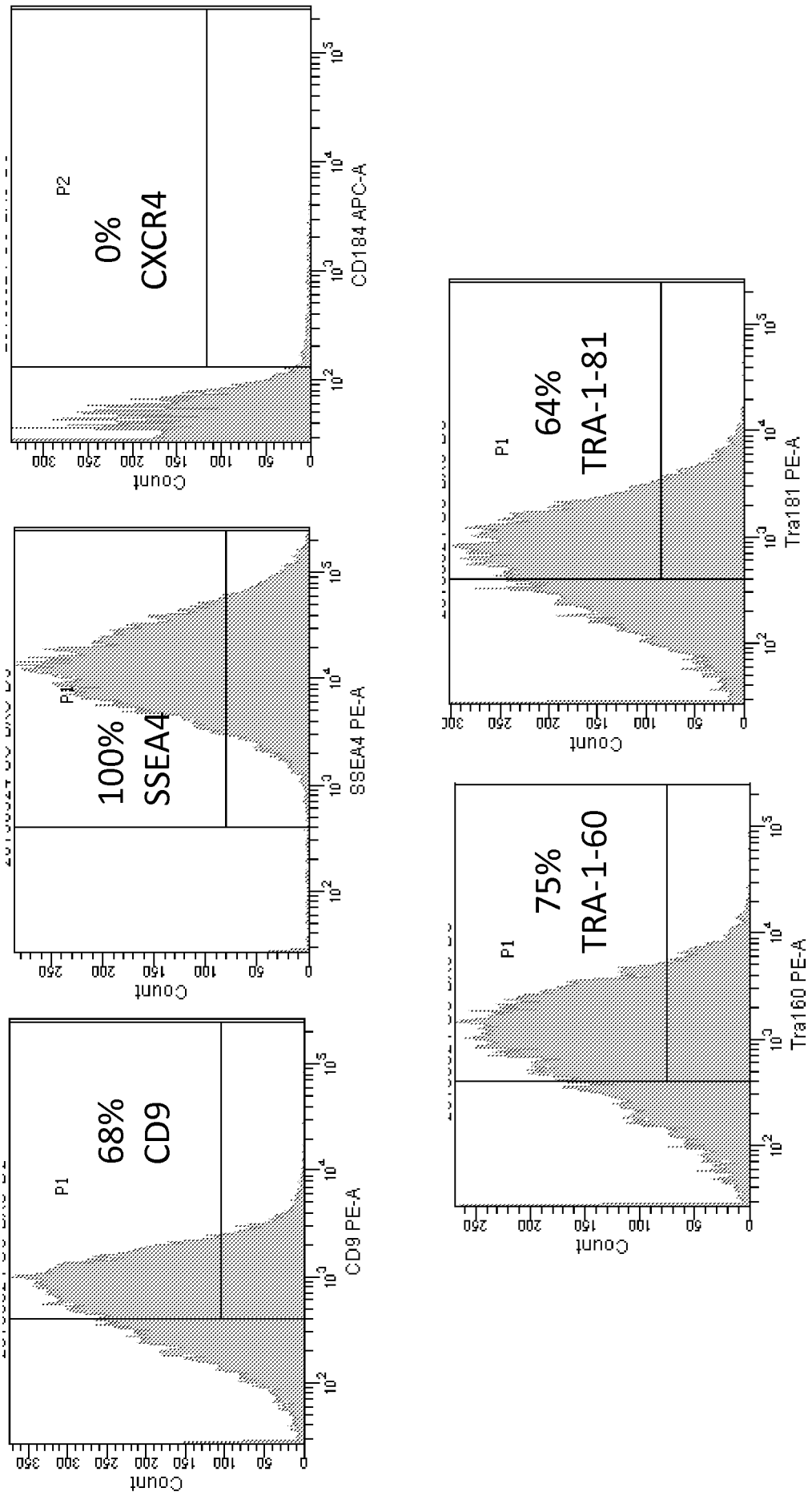
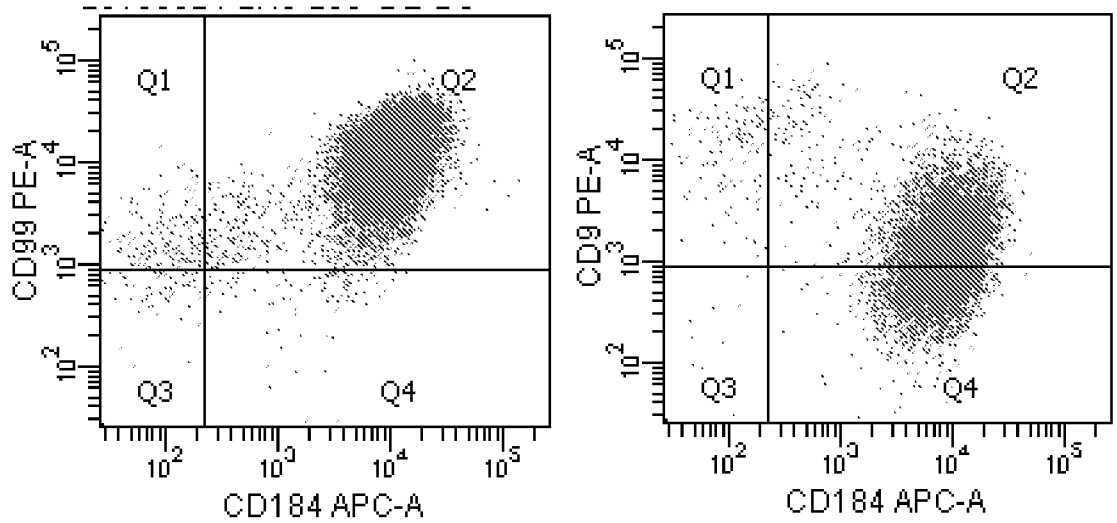


Figure 52: Definitive Endoderm Cell Expression by FACS



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Figure 53: Daily Stage 2 Expression by qRT-PCR

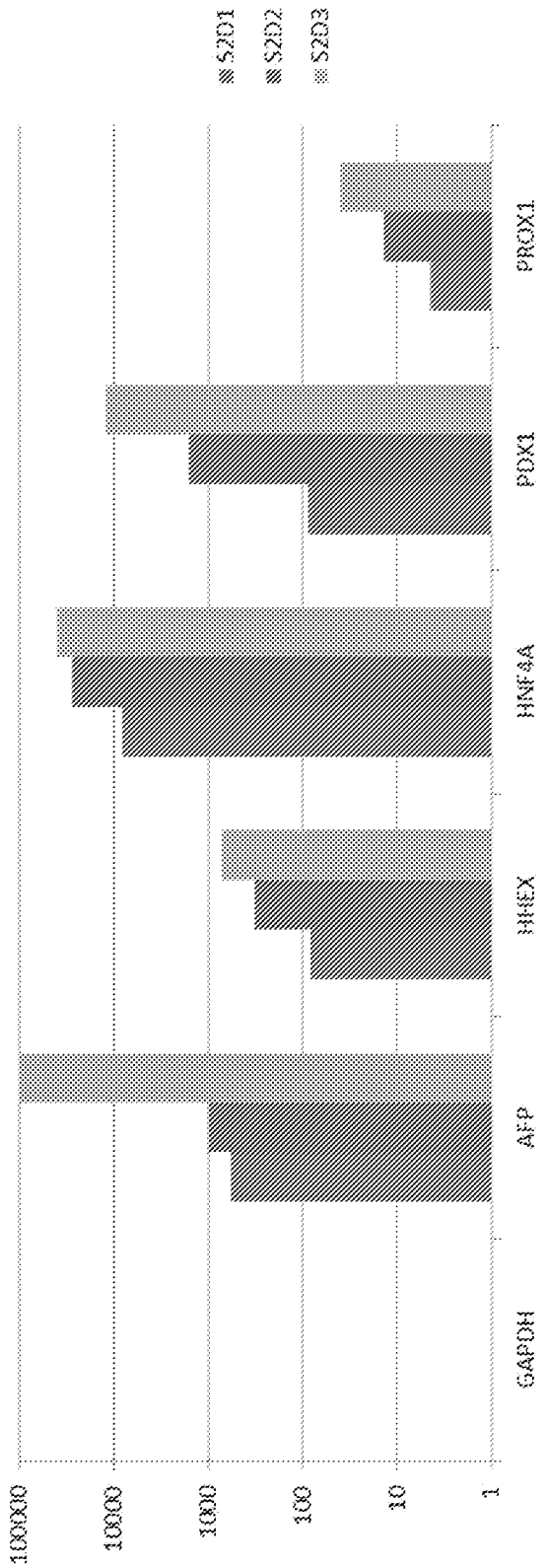


Figure 54: Daily Stage 2 and 3 Expression by qRT-PCR,

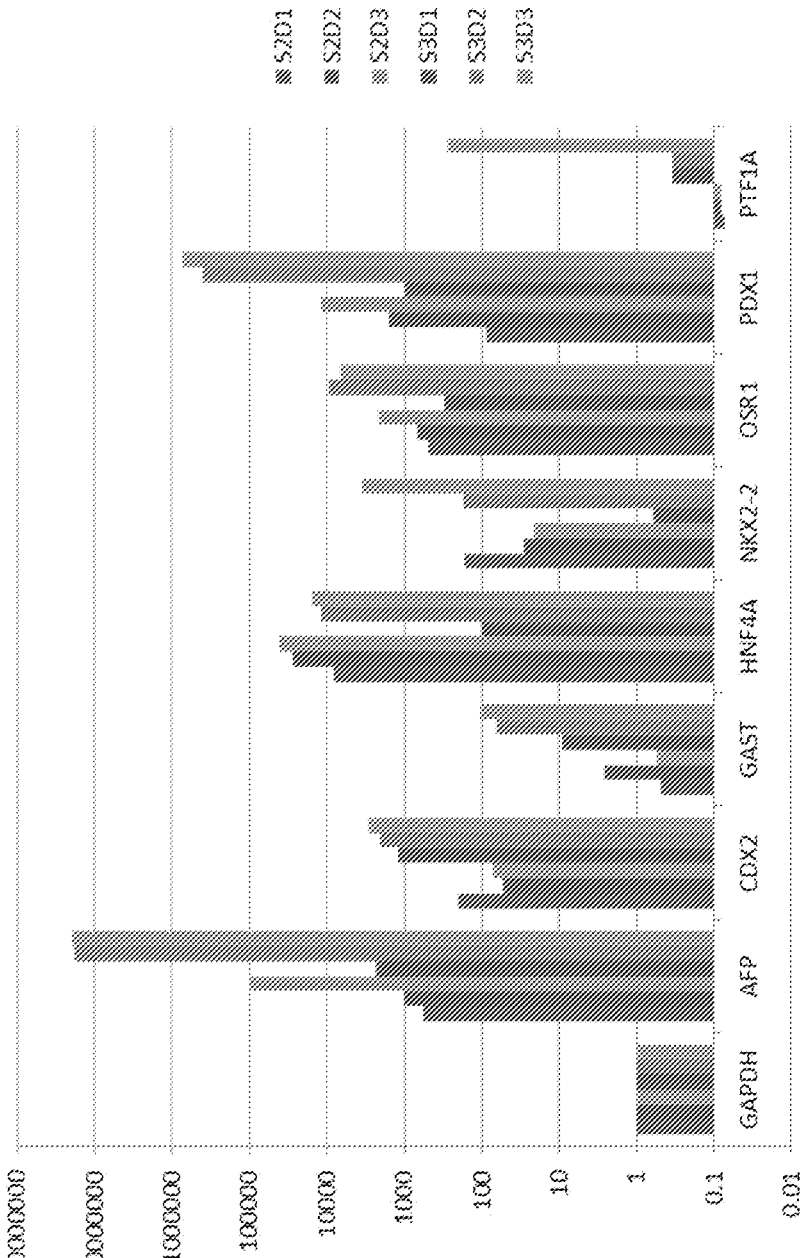


Figure 55: Daily Stage 3 and 4 Expression by qRT-PCR

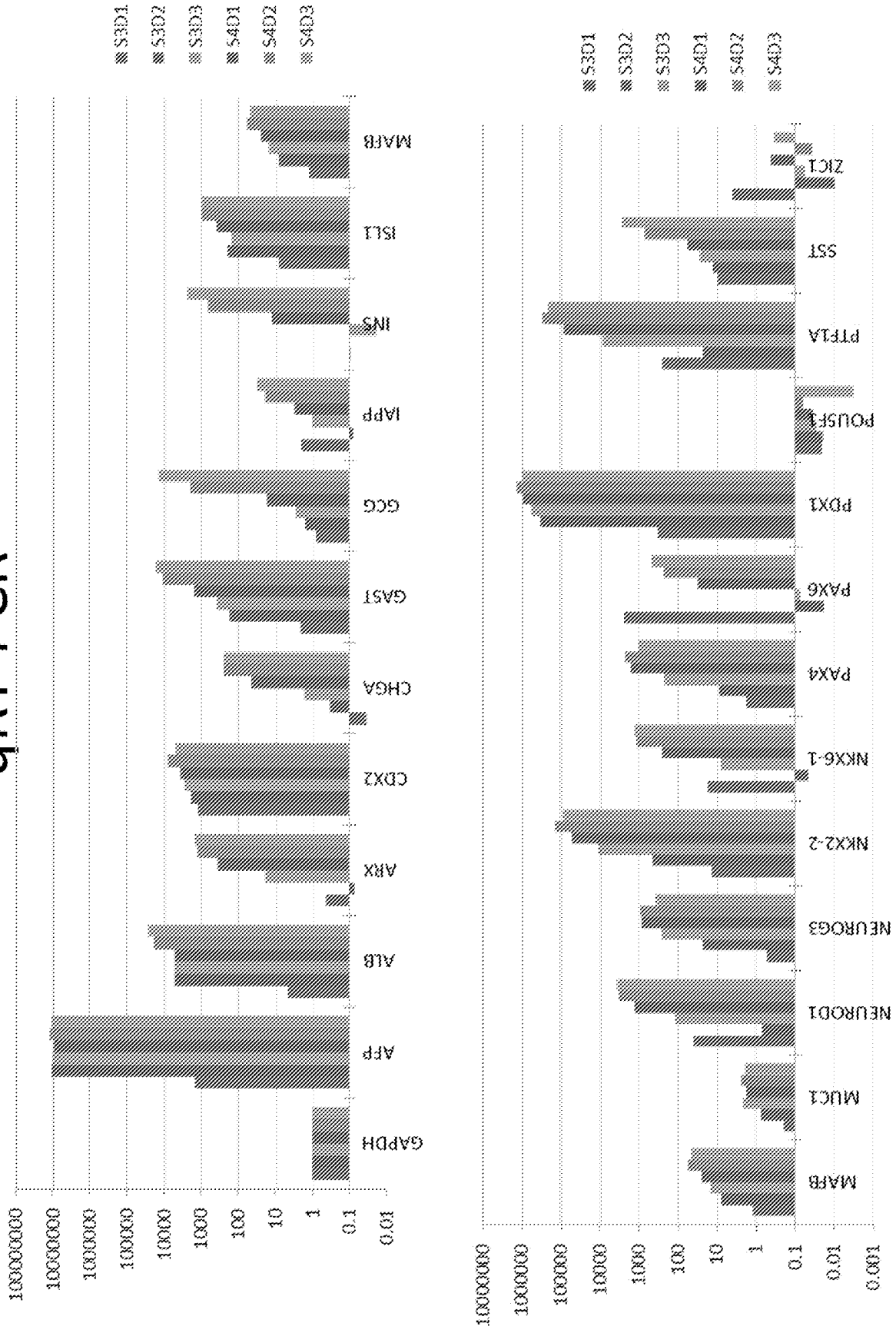
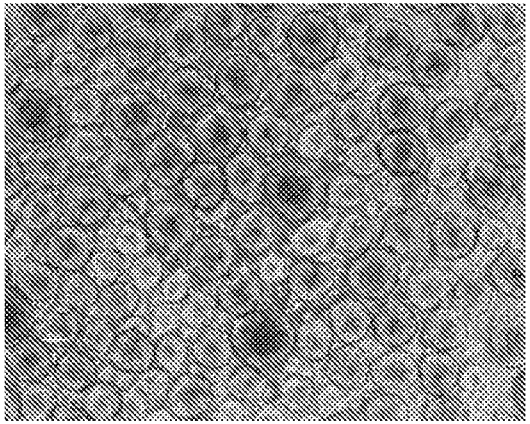
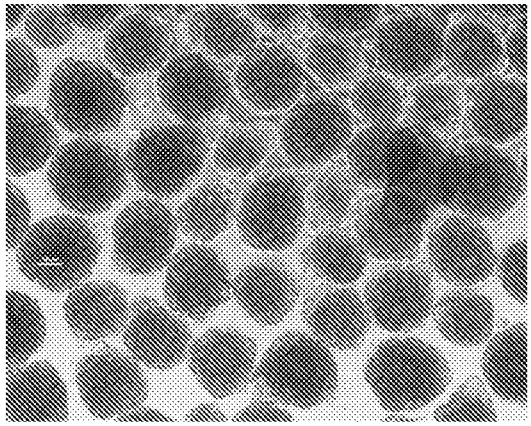


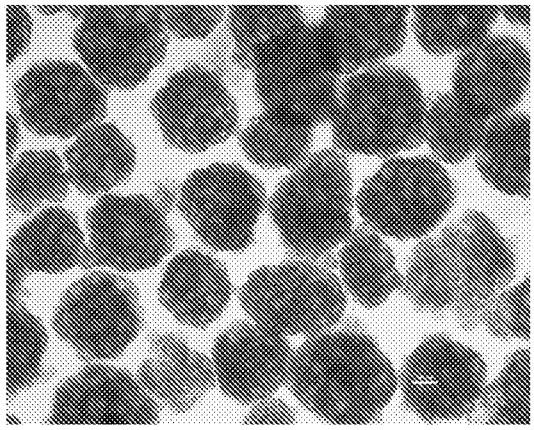
Figure 56: End of Stage Micrographs of Clusters (4x)



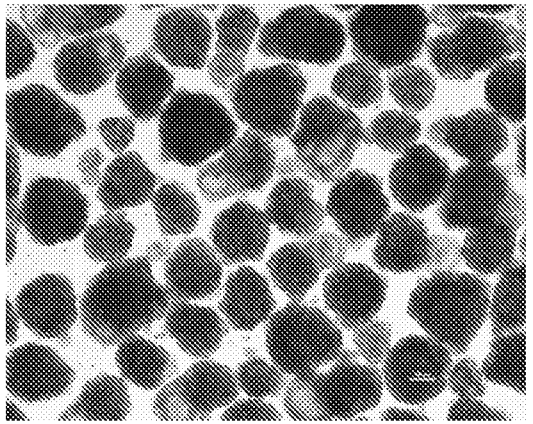
Stage 0



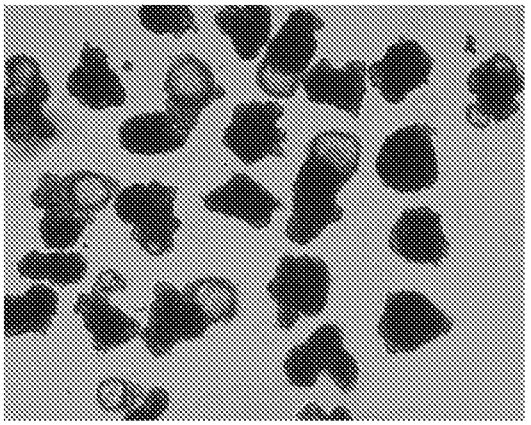
Stage 1



Stage 2



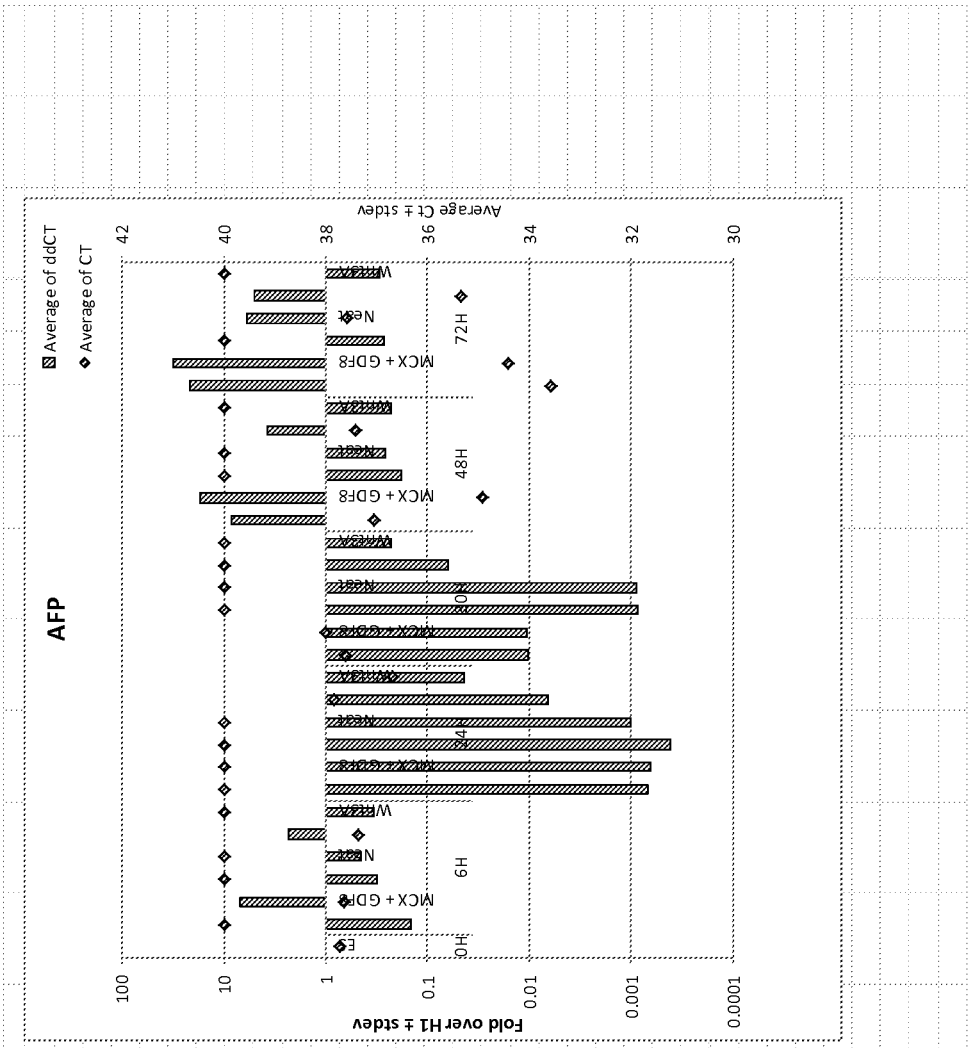
Stage 3



Stage 4

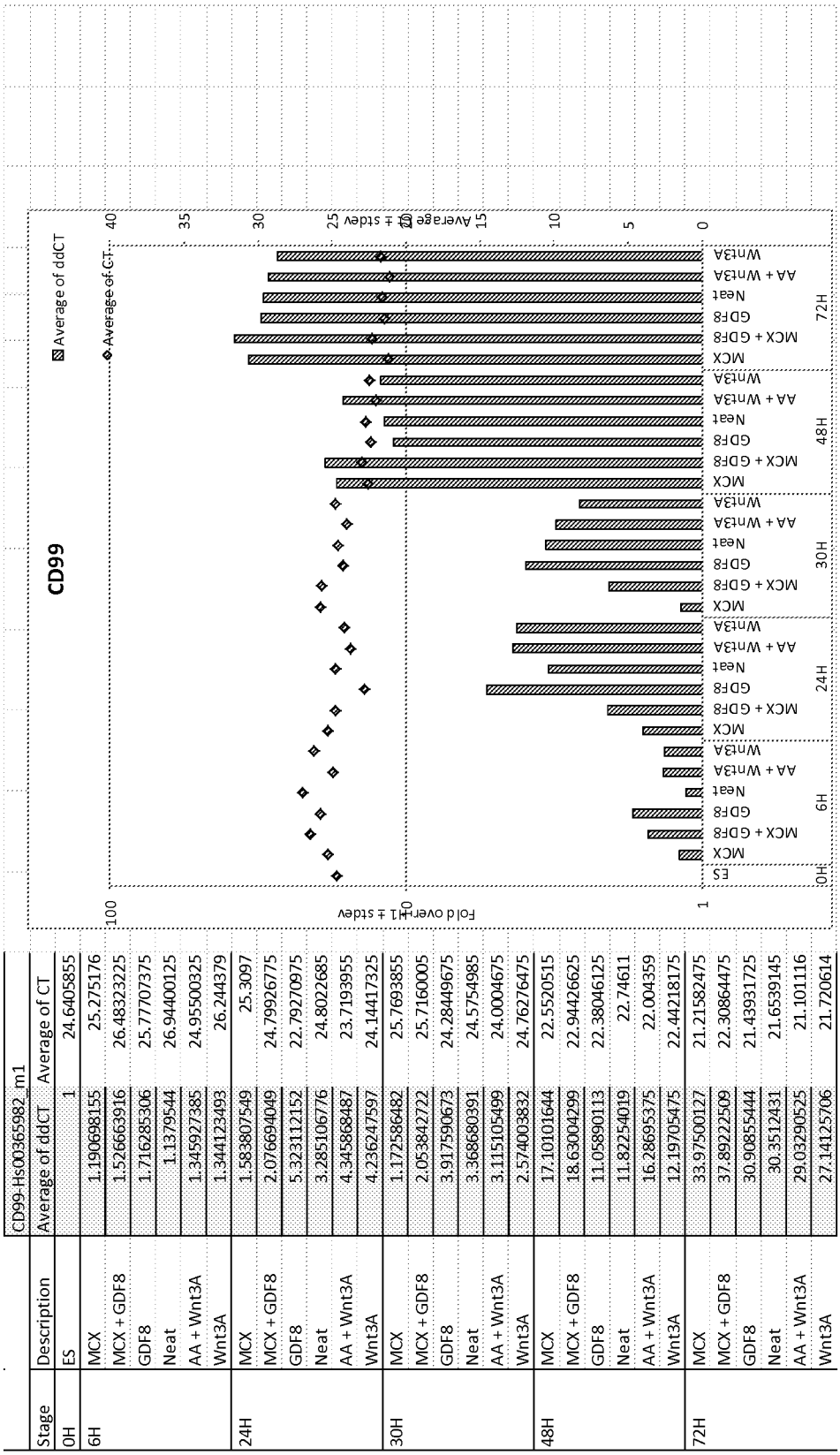
WO 2014/106141 PCT/US2013/078191

Figure 57



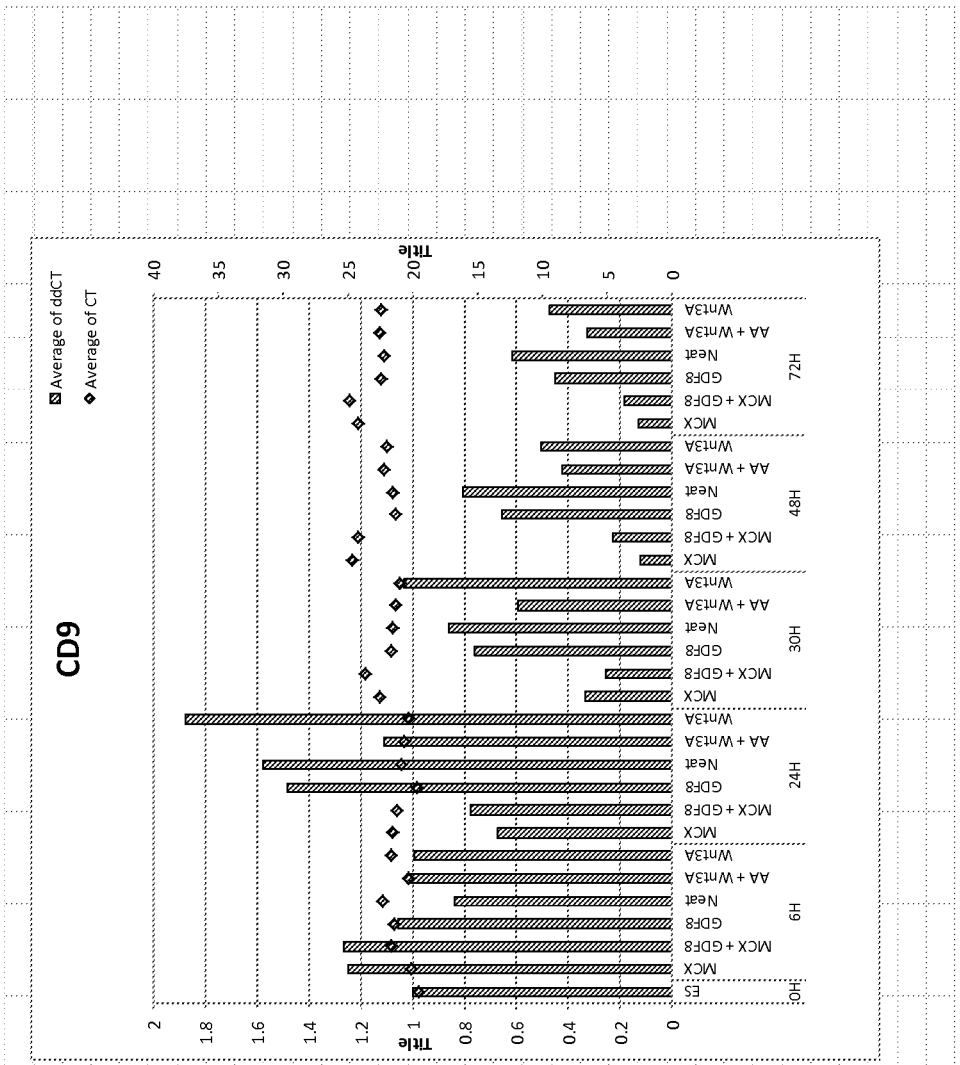
	AFP-Hs00173490_m1		
Stage	Description	Average of ddCT	Average of CT
0H	ES	1	37.723975
6H	MCX	0.147126475	40
	MCX + GDF8	7.018299741	37.6344435
	GDF8	0.310155102	40
	Neat	0.447000315	40
	AA + Wnt3A	2.301162434	37.35129
	Wnt3A	0.337838416	40
24H	MCX	0.000693262	40
	MCX + GDF8	0.000640736	40
	GDF8	0.000412032	40
	Neat	0.001018735	40
	AA + Wnt3A	0.006662656	37.8252275
	Wnt3A	0.044355431	36.6868115
30H	MCX	0.01045458	37.607729
	MCX + GDF8	0.010583612	37.999382
	GDF8	0.000866395	40
	Neat	0.00089735	40
	AA + Wnt3A	0.063567784	40
	Wnt3A	0.22670157	40
48H	MCX	8.308938777	37.039757
	MCX + GDF8	17.05527638	34.9156185
	GDF8	0.181209805	40
	Neat	0.255853863	40
	AA + Wnt3A	3.75692297	37.4162485
	Wnt3A	0.22788437	40
72H	MCX	21.60843384	33.577275
	MCX + GDF8	31.85866958	34.40842575
	GDF8	0.267631702	40
	Neat	5.920210512	37.585025
	AA + Wnt3A	4.972059654	35.35370075
	Wnt3A	0.289511742	40

Figure 58



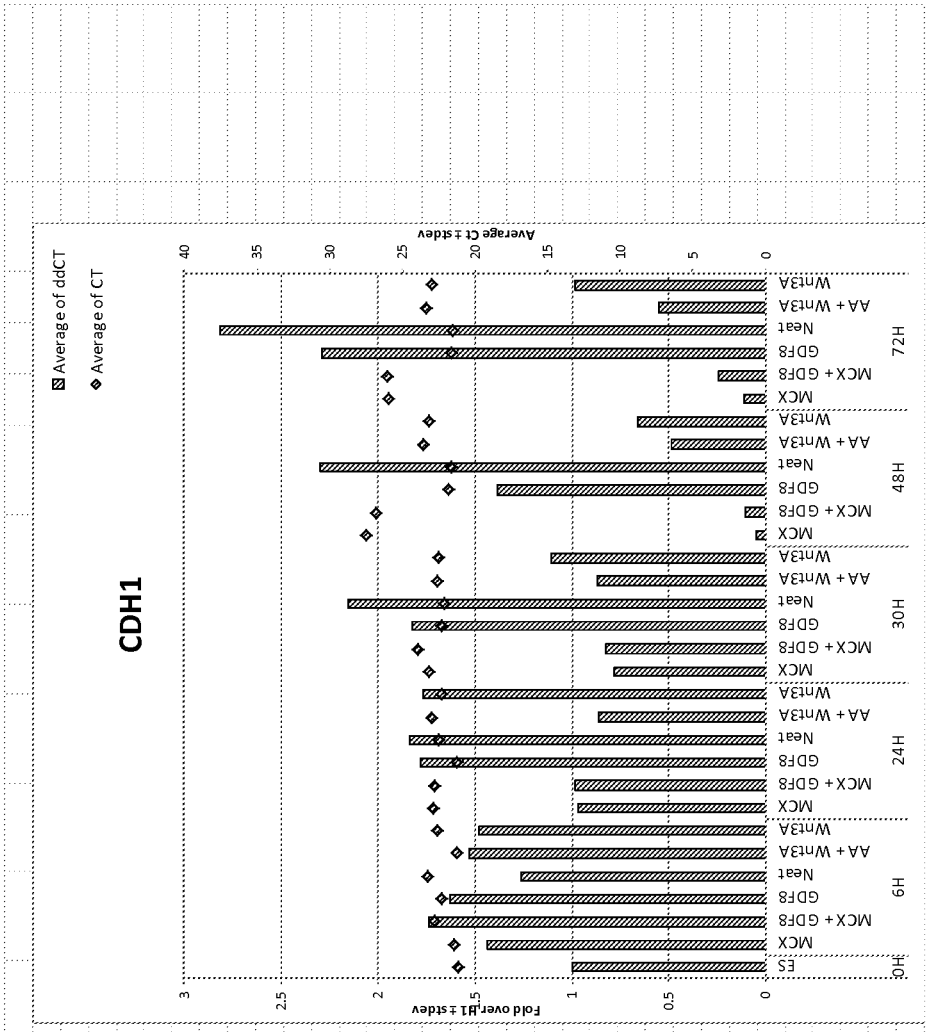
	Stage	Description	CD99-Hs00365982_m1 Average of ddCT	Average of CT
	0H	ES	1	24.6405855
	6H	MCX	1.190698155	25.275176
		MCX + GDF8	1.526663916	26.48323225
		GDF8	1.716285306	25.77707375
		Neat	1.13795544	26.94400125
		AA + Wnt3A	1.345927385	24.95500325
		Wnt3A	1.344123493	26.244379
	24H	MCX	1.583807549	25.3097
		MCX + GDF8	2.076694049	24.79926775
		GDF8	5.323112152	22.79270975
		Neat	3.285106776	24.8022685
		AA + Wnt3A	4.345868487	23.7193955
		Wnt3A	4.236247597	24.14417325
	30H	MCX	1.172586482	25.7693855
		MCX + GDF8	2.053842722	25.7160005
		GDF8	3.917590673	24.28449675
		Neat	3.368680391	24.5754985
		AA + Wnt3A	3.115105499	24.0004675
		Wnt3A	2.574003832	24.76276475
	48H	MCX	17.10101644	22.5520515
		MCX + GDF8	18.63004299	22.94426625
		GDF8	11.05890113	22.38046125
		Neat	11.822540l9	22.74611
		AA + Wnt3A	16.28695375	22.004359
		Wnt3A	12.19705475	22.44218175
	72H	MCX	33.97500127	21.21582475
		MCX + GDF8	37.89222509	22.30864475
		GDF8	30.90855444	21.43931725
		Neat	30.3512431	21.6539145
		AA + Wnt3A	29.03290525	21.101116
		Wnt3A	27.14125706	21.720614

Figure 59



		CD9-Hs00233521_m1	
Stage	Description	Average of ddCT	Average of CT
0H	ES	1	19.594381
6H	MCX	1.251731097	20.1575115
	MCX + GDF8	1.267468439	21.7044385
	GDF8	1.054330784	21.42939
	Neat	0.840972255	22.3332655
	AA + Wnt3A	1.025647226	20.3008415
	Wnt3A	0.993062064	21.633114
24H	MCX	0.675867571	21.52784225
	MCX + GDF8	0.779476114	21.2145435
	GDF8	1.482663359	19.6477795
	Neat	1.575331529	20.86602625
	AA + Wnt3A	1.109767695	20.69733325
	Wnt3A	1.877982024	20.3205435
30H	MCX	0.334742082	22.54545675
	MCX + GDF8	0.259284869	23.70312275
	GDF8	0.763763065	21.6523685
	Neat	0.864514686	21.54218775
	AA + Wnt3A	0.595385525	21.376402
	Wnt3A	1.035516963	21.029337
48H	MCX	0.12188654	24.63806975
	MCX + GDF8	0.22866318	24.24954625
	GDF8	0.656253602	21.3704885
	Neat	0.808746484	21.568722
	AA + Wnt3A	0.426256508	22.2130755
	Wnt3A	0.505229105	21.98718125
72H	MCX	0.129166025	24.20753875
	MCX + GDF8	0.186823337	24.9239465
	GDF8	0.4532341	22.483891
	Neat	0.618075848	22.224103
	AA + Wnt3A	0.326738327	22.53255175
	Wnt3A	0.476249233	22.50759925

Figure 60



Stage	Description	CDH1-Hs00170423_m1 Average of ddCT	Average of CT
0H	ES	1	21.1220935
6H	MCX	1.438095716	21.48451125
	MCX + GDF8	1.734993882	22.78097675
	GDF8	1.630120987	22.326705
	Neat	1.26605922	23.27178
	AA + Wnt3A	1.53100786	21.244549
	Wnt3A	1.479699619	22.586277
24H	MCX	0.964874058	22.88988475
	MCX + GDF8	0.985690176	22.74761575
	GDF8	1.777098122	21.259763
	Neat	1.836418052	22.5200365
	AA + Wnt3A	0.857310228	22.94618
	Wnt3A	1.763008893	22.28339675
30H	MCX	0.779046766	23.18737325
	MCX + GDF8	0.823769224	23.90965525
	GDF8	1.826534397	22.2718515
	Neat	2.157183306	22.09958675
	AA + Wnt3A	0.869589508	22.56190025
	Wnt3A	1.103755052	22.46700925
48H	MCX	0.04991902	27.45092325
	MCX + GDF8	0.108297659	26.85248925
	GDF8	1.382460124	21.824997
	Neat	2.295436781	21.59299025
	AA + Wnt3A	0.488579559	23.54561175
	Wnt3A	0.661180509	23.1268085
72H	MCX	0.114716793	25.90844725
	MCX + GDF8	0.244306561	26.0796885
	GDF8	2.289133266	21.67665
	Neat	2.812772021	21.566462
	AA + Wnt3A	0.548550965	23.31460325
	Wnt3A	0.985826882	22.98636525

Figure 61

		CDH2-Hs00169953_m1	
Stage	Description	Average of ddCT	Average of CT
0H	ES	1	24.62836625
6H	MCX	0.971431194	25.5561985
	MCX + GDF8	1.279730226	26.72519075
	GDF8	1.853738312	25.65804775
	Neat	1.06509983	27.02706025
	AA + Wnt3A	2.422911452	24.089807
	Wnt3A	1.333462771	26.24274375
24H	MCX	38.53869594	21.73022725
	MCX + GDF8	35.01976772	21.712131
	GDF8	18.69559178	21.9806095
	Neat	11.31449187	24.01217975
	AA + Wnt3A	23.653609	22.2796135
	Wnt3A	14.16721557	23.393213
30H	MCX	38.06909344	21.822399
	MCX + GDF8	52.13453283	22.0388115
	GDF8	37.05602792	22.0527955
	Neat	31.0822623	22.368701
	AA + Wnt3A	41.26316567	20.9753245
	Wnt3A	12.93132447	22.421338
48H	MCX	44.50339828	21.15699375
	MCX + GDF8	56.1318803	21.34158575
	GDF8	47.92401647	20.2242805
	Neat	37.98469283	21.05118325
	AA + Wnt3A	79.66513996	19.70283425
	Wnt3A	56.06488736	20.226277
72H	MCX	67.30968147	20.21803475
	MCX + GDF8	77.70173181	21.259899
	GDF8	54.90435817	20.59808925
	Neat	58.03071954	20.7102715
	AA + Wnt3A	79.9899312	19.643941
	Wnt3A	73.82325818	20.26389675

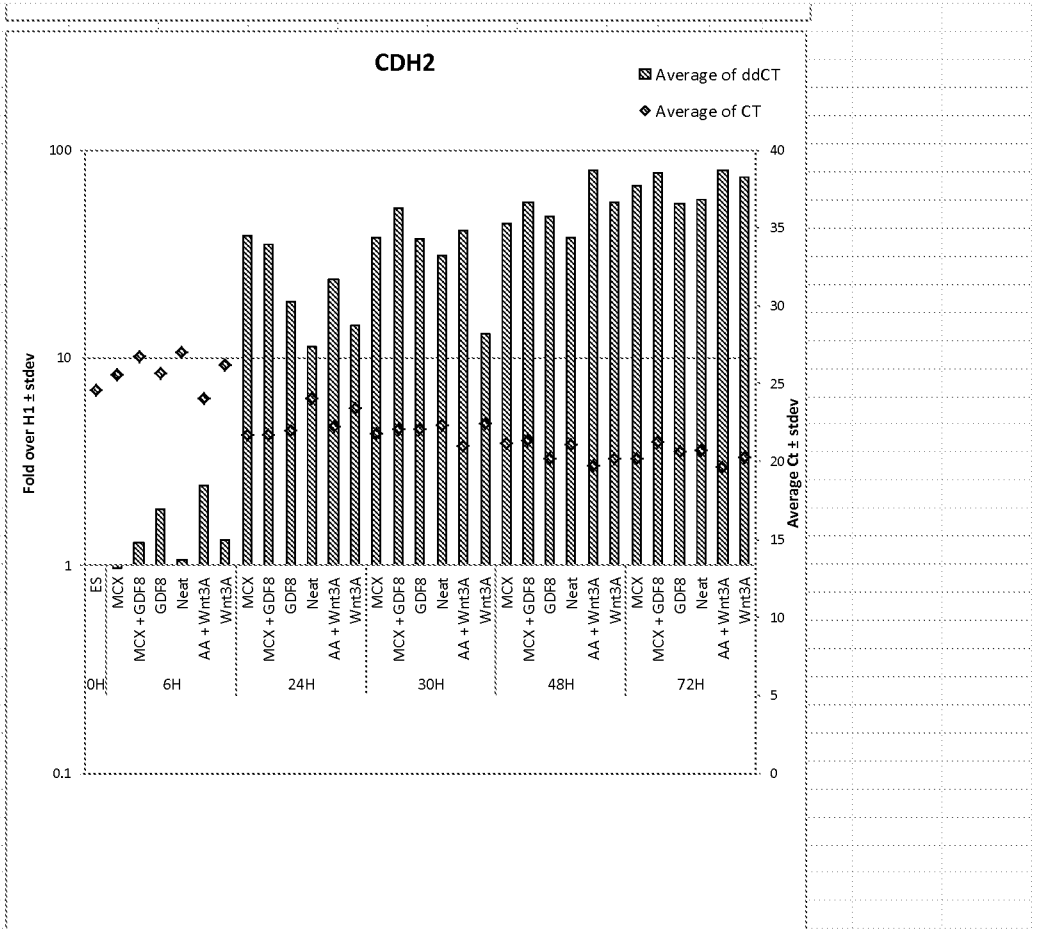
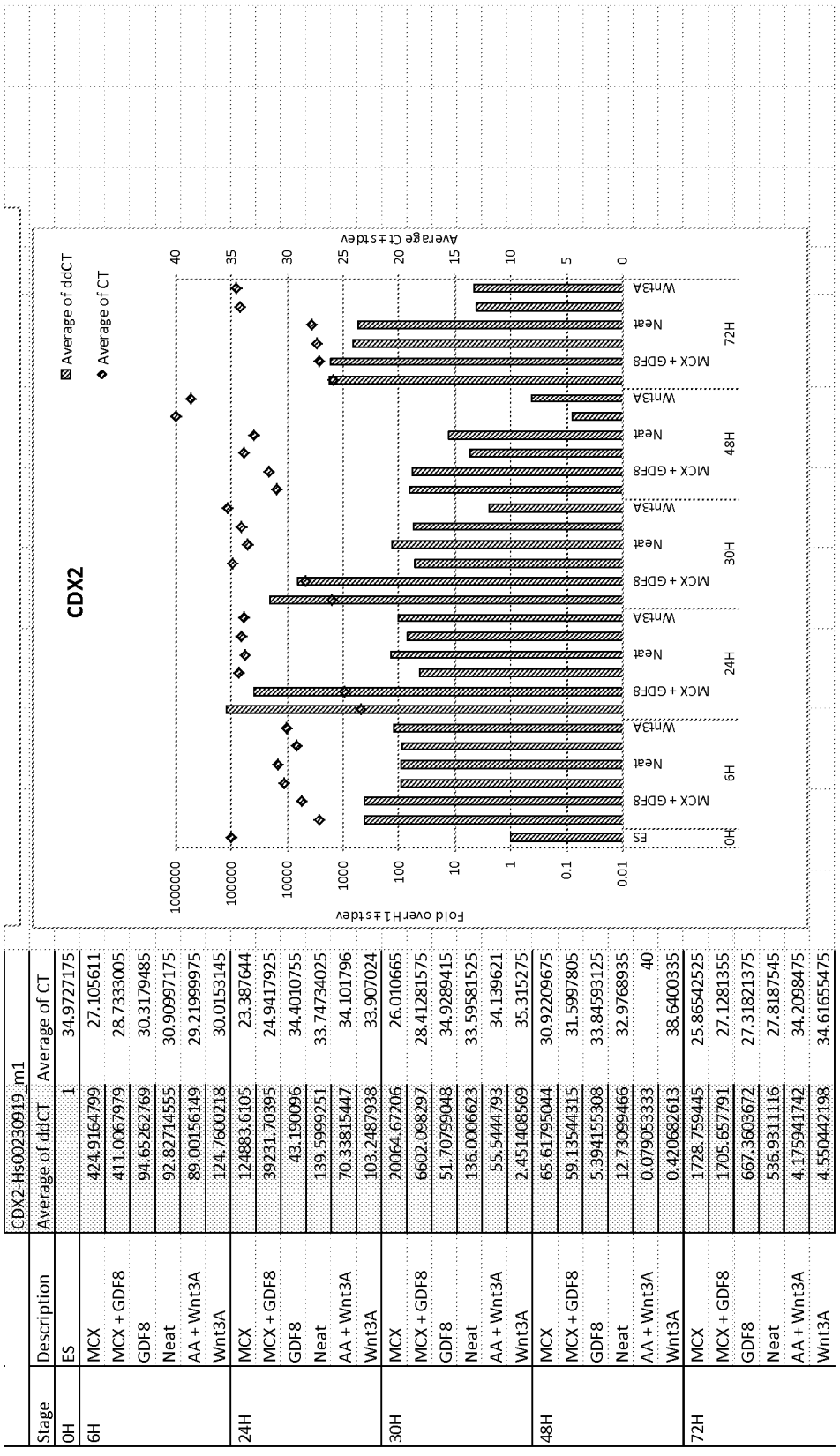


Figure 62



	Stage	Description	CDX2-Hs00230919_m1 Average of ddCT	Average of CT
	0H	ES	1	34.9727175
	6H	MCX	424.9164799	27.105611
		MCX + GDF8	411.0067979	28.7333005
		GDF8	94.65262769	30.3179485
		Neat	92.82714555	30.90997175
		AA + Wnt3A	89.00156149	29.21999975
		Wnt3A	124.7600218	30.0153145
	24H	MCX	124883.6105	23.387644
		MCX + GDF8	39231.70395	24.9417925
		GDF8	43.190096	34.4010755
		Neat	139.5999251	33.74734025
		AA + Wnt3A	70.33815447	34.101796
		Wnt3A	103.2487938	33.907024
	30H	MCX	20064.67206	26.010665
		MCX + GDF8	6602.098297	28.41281575
		GDF8	51.70799048	34.9289415
		Neat	136.0006623	33.59581525
		AA + Wnt3A	55.5444793	34.139621
		Wnt3A	2.451408569	35.315275
	48H	MCX	65.61795044	30.92209675
		MCX + GDF8	59.13544315	31.5997805
		GDF8	5.394155308	33.84593125
		Neat	12.73099466	32.9768935
		AA + Wnt3A	0.079053333	40
		Wnt3A	0.420682613	38.6400335
	72H	MCX	1728.759445	25.86542525
		MCX + GDF8	1705.657791	27.1281355
		GDF8	667.3603672	27.31821375
		Neat	536.9311116	27.8187545
		AA + Wnt3A	4.175941742	34.2098475
		Wnt3A	4.550442198	34.61655475

Figure 63

		CER1-Hs00193796_m1	
Stage	Description	Average of ddCT	Average of CT
0H	ES	1.0	25.82490975
6H	MCX	1.8	25.8442625
	MCX + GDF8	8.4	25.20215125
	GDF8	13.7	23.952255
	Neat	1.8	27.45667625
	AA + Wnt3A	15.0	22.667056
	Wnt3A	2.4	26.605481
24H	MCX	132.1	21.93651825
	MCX + GDF8	1450.5	18.36031425
	GDF8	2336.5	17.03518975
	Neat	1065.6	19.477802
	AA + Wnt3A	3770.5	16.97943475
	Wnt3A	1378.0	18.8095685
30H	MCX	2405.4	17.7356745
	MCX + GDF8	3962.1	17.813284
	GDF8	3672.6	17.4329545
	Neat	1856.0	18.4859845
	AA + Wnt3A	3395.1	16.49808475
	Wnt3A	632.4	18.00392625
48H	MCX	789.8	18.20619575
	MCX + GDF8	363.2	19.84078575
	GDF8	245.8	19.09911625
	Neat	49.2	21.8763095
	AA + Wnt3A	1538.9	16.62768625
	Wnt3A	1547.9	16.635193
72H	MCX	58.2	21.62558375
	MCX + GDF8	4.3	26.616556
	GDF8	0.5	28.651082
	Neat	2.1	26.7078345
	AA + Wnt3A	420.9	18.426176
	Wnt3A	710.0	18.1925825

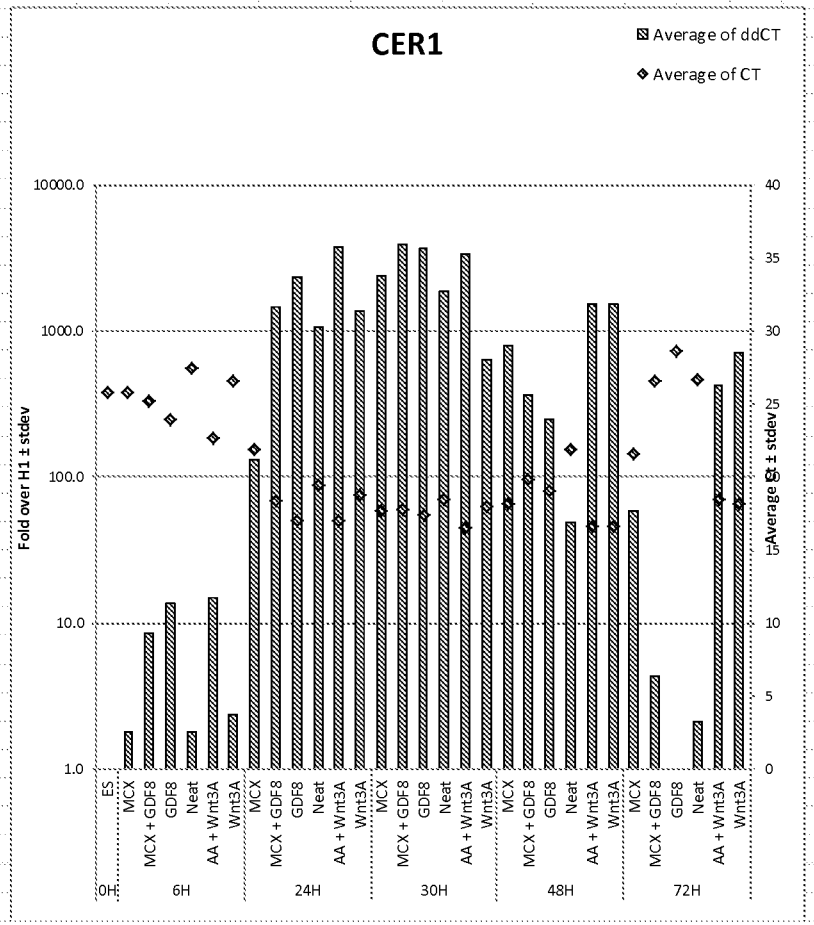


Figure 64

	CXCR4-Hs00237052_m1		
Stage	Description	Average of ddCT	Average of CT
0H	ES	1	28.65826975
6H	MCX	1.596400191	28.869144
	MCX + GDF8	3.245062743	29.41176
	GDF8	2.328481516	29.34328125
	Neat	1.544941488	30.59817825
	AA + Wnt3A	2.730187135	27.9661455
	Wnt3A	1.205789756	30.41699125
24H	MCX	38.1797308	24.8774685
	MCX + GDF8	20.21067093	25.684268
	GDF8	40.14824785	24.0566865
	Neat	7.865280958	27.71618625
	AA + Wnt3A	110.9636532	23.22417
	Wnt3A	12.74661417	26.7251895
30H	MCX	5.866289962	27.79714925
	MCX + GDF8	15.8685687	26.9421005
	GDF8	90.2457701	23.938839
	Neat	32.5398198	25.478137
	AA + Wnt3A	136.8871138	22.70002
	Wnt3A	28.78538781	25.29555625
48H	MCX	71.06570076	24.51007275
	MCX + GDF8	159.5267041	23.870551
	GDF8	129.353477	22.80957525
	Neat	79.19208167	24.01719525
	AA + Wnt3A	357.4065728	21.56292925
	Wnt3A	289.0418914	21.89349725
72H	MCX	149.129321	23.09646975
	MCX + GDF8	259.7389657	23.55116125
	GDF8	103.8237094	23.70760175
	Neat	115.8024312	23.7364165
	AA + Wnt3A	427.5376435	21.244809
	Wnt3A	351.788754	22.03877425

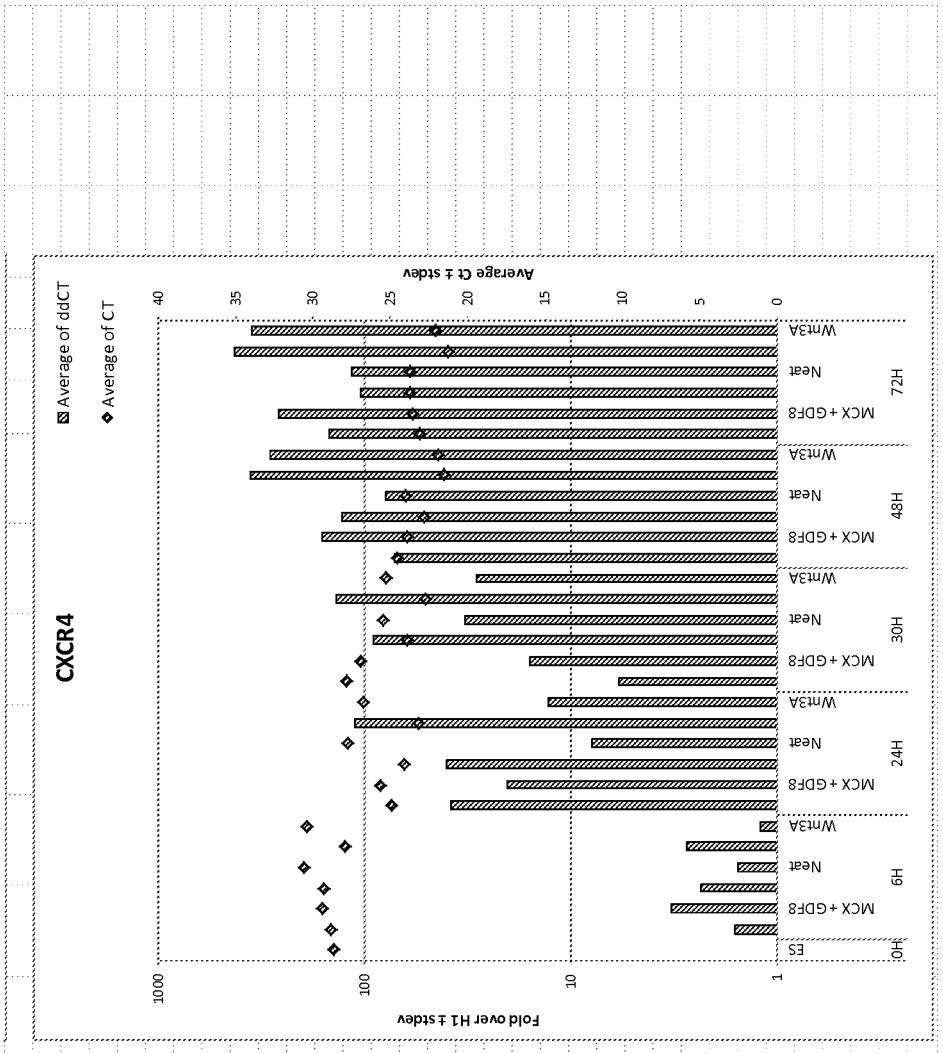
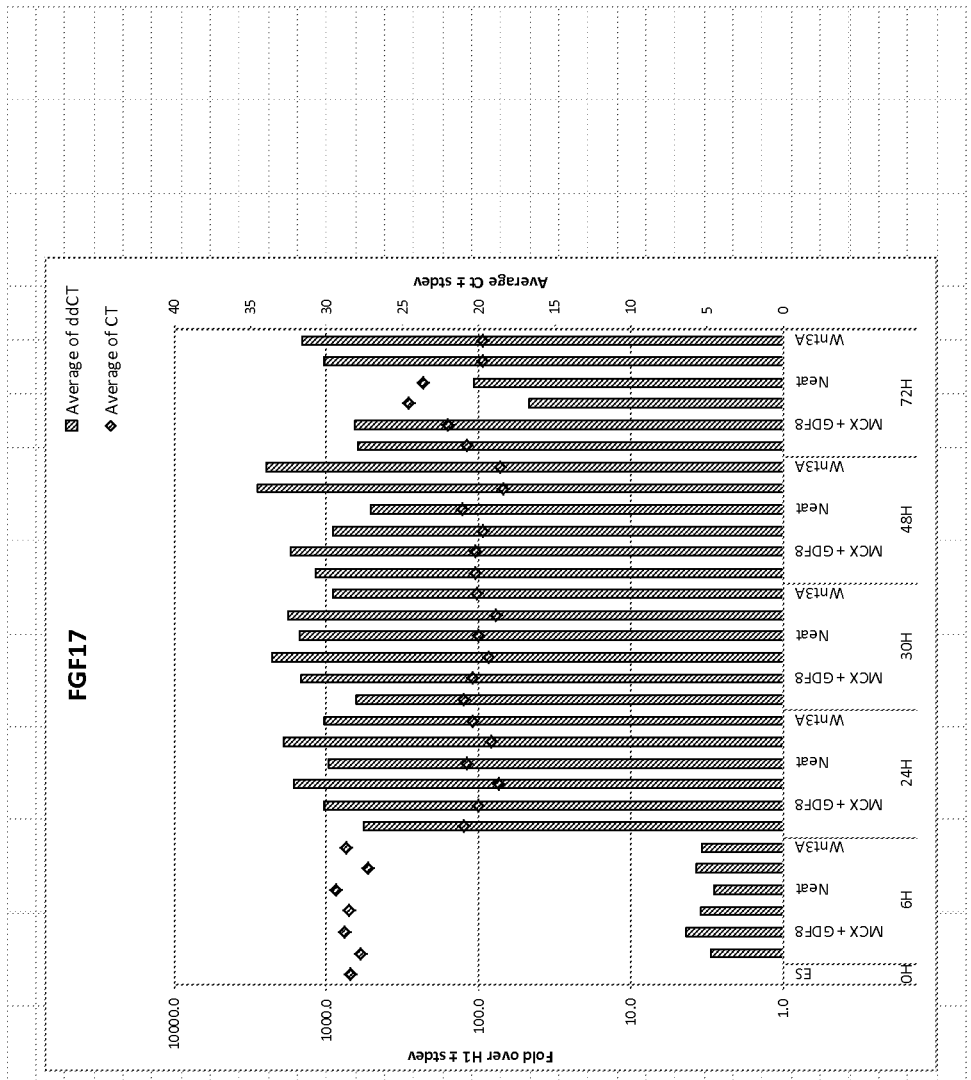


Figure 65



		FGF17-Hs00182599_m1	
Stage	Description	Average of ddCT	Average of CT
0H	ES	1.0	28.414235
6H	MCX	3.0	27.72571825
	MCX + GDF8	4.3	28.7801465
	GDF8	3.5	28.51799425
	Neat	2.9	29.38037575
	AA + Wnt3A	3.7	27.26851225
	Wnt3A	3.4	28.68394325
24H	MCX	569.4	20.991543
	MCX + GDF8	1039.1	20.01131175
	GDF8	1654.3	18.7019495
	Neat	956.3	20.801525
	AA + Wnt3A	1904.6	19.132709
	Wnt3A	1023.0	20.40782575
30H	MCX	629.7	20.959882
	MCX + GDF8	1473.4	20.4064785
	GDF8	2258.2	19.30304725
	Neat	1488.7	19.974126
	AA + Wnt3A	1787.4	18.8785735
	Wnt3A	913.4	20.06813875
48H	MCX	1182.7	20.2052885
	MCX + GDF8	1699.2	20.2130965
	GDF8	903.6	19.760407
	Neat	514.6	21.0716165
	AA + Wnt3A	2804.7	18.34752425
	Wnt3A	2472.4	18.5541035
72H	MCX	618.2	20.799662
	MCX + GDF8	651.1	21.97972475
	GDF8	46.7	24.6153255
	Neat	106.1	23.61741325
	AA + Wnt3A	1035.9	19.7136185
	Wnt3A	1447.6	19.75497975

Figure 66

FGF4-Hs00173564_m1

Stage	Description	Average of ddCT	Average of CT
0H	ES	1.00	30.36414925
6H	MCX	0.36	32.71812375
	MCX + GDF8	0.94	32.90263075
	GDF8	2.53	30.961652
	Neat	1.28	32.49598675
	AA + Wnt3A	2.29	29.90699925
	Wnt3A	1.81	31.54247975
24H	MCX	10.07	27.79784425
	MCX + GDF8	14.87	27.112112
	GDF8	47.74	24.80151475
	Neat	49.52	26.05244775
	AA + Wnt3A	34.75	25.88729725
	Wnt3A	49.03	25.765469
30H	MCX	16.47	27.0754075
	MCX + GDF8	25.22	27.24987725
	GDF8	39.37	26.11944275
	Neat	39.36	26.200808
	AA + Wnt3A	31.71	26.095002
	Wnt3A	61.92	25.8985855
48H	MCX	0.19	34.7310435
	MCX + GDF8	0.10	36.30362875
	GDF8	1.18	31.31236175
	Neat	6.55	29.33790575
	AA + Wnt3A	0.91	31.9127015
	Wnt3A	4.52	29.6191425
72H	MCX	0.07	35.9543555
	MCX + GDF8	0.07	37.31572425
	GDF8	0.48	33.18504325
	Neat	3.24	30.6055855
	AA + Wnt3A	0.12	34.8191535
	Wnt3A	0.51	33.17337125

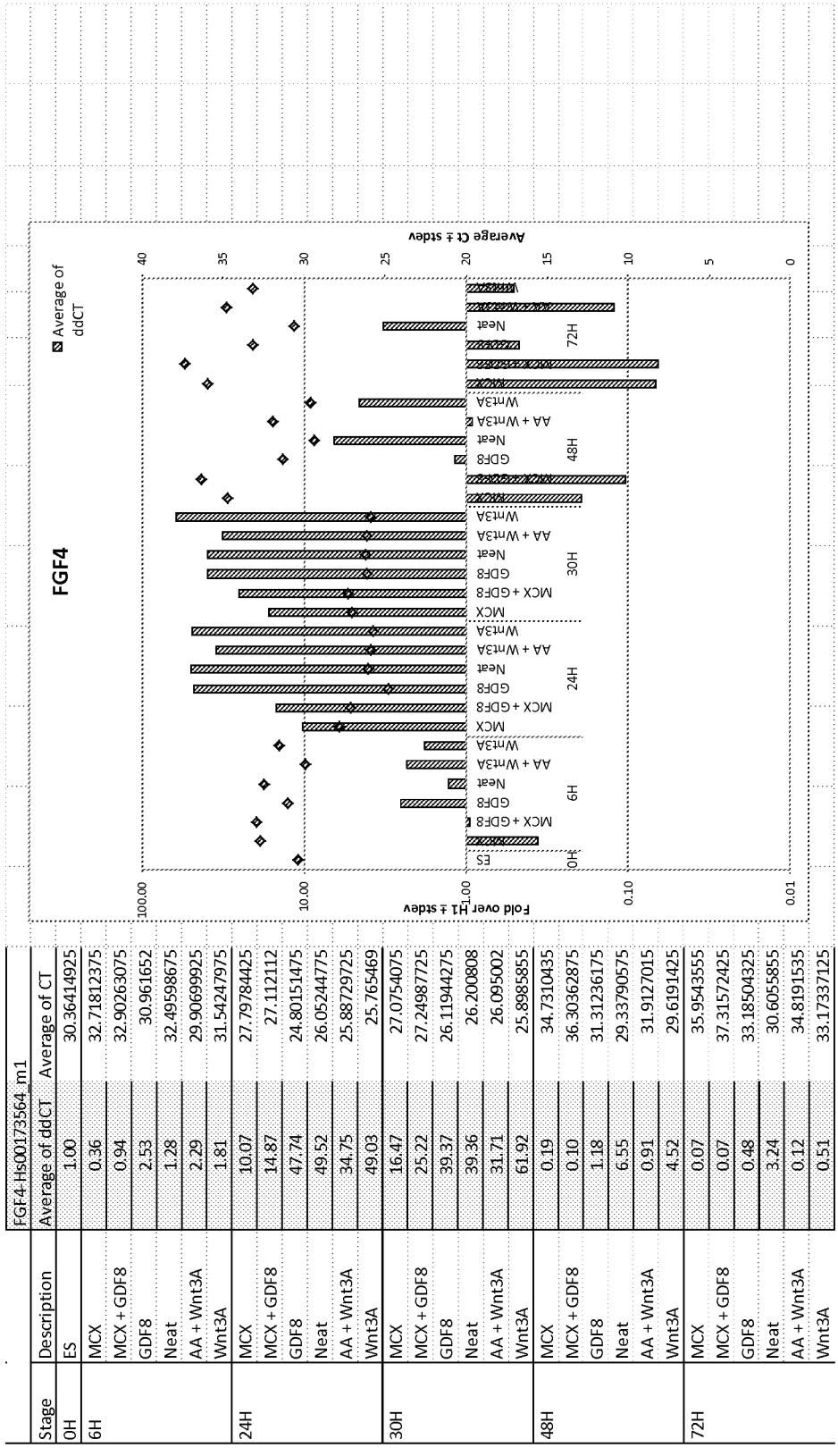
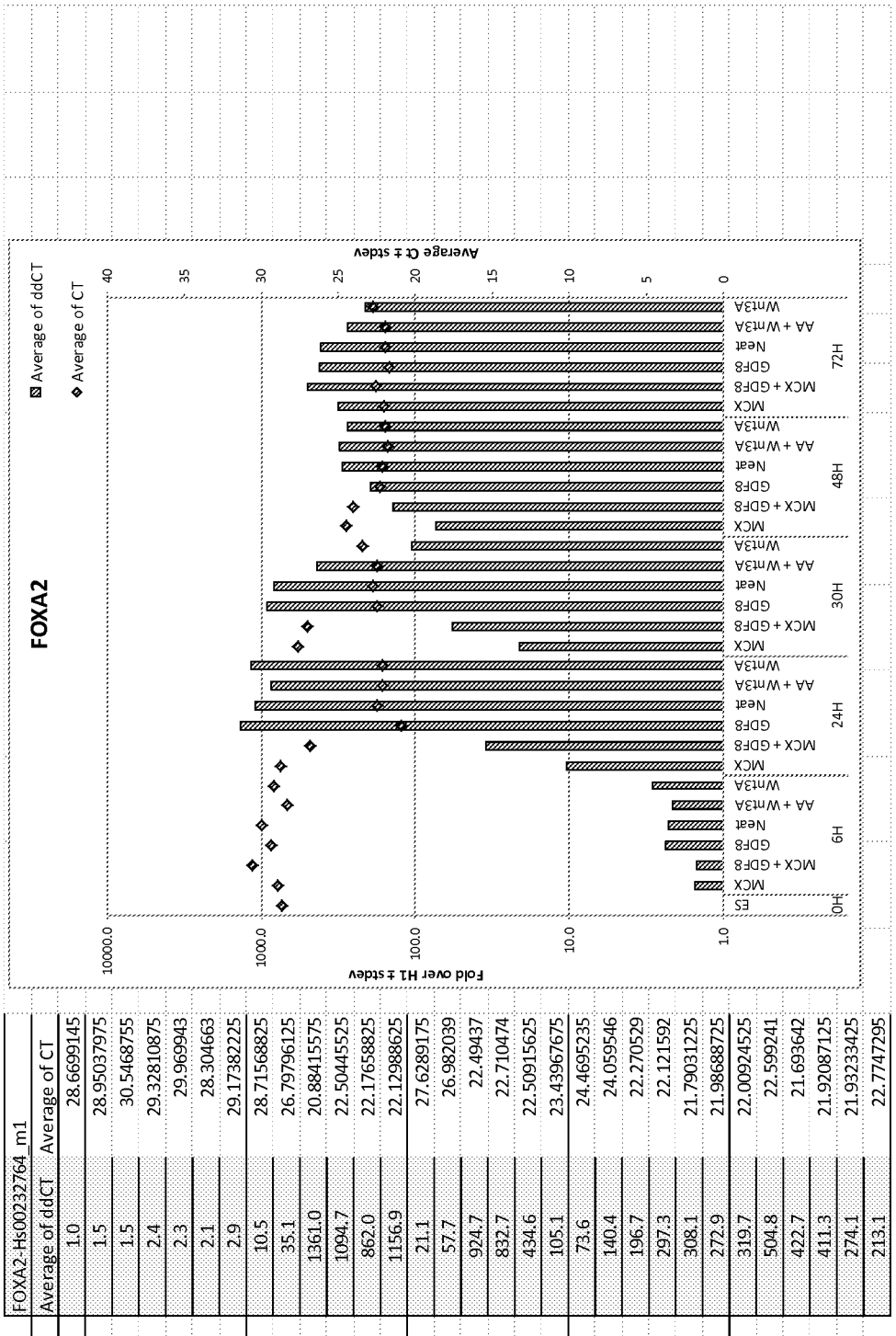


Figure 67



	Stage	Description	FOXA2-Hs00232764_m1 Average of ddCT	Average of CT
	0H	ES	1.0	28.6699145
	6H	MCX	1.5	28.95037975
		MCX + GDF8	1.5	30.5468755
		GDF8	2.4	29.32810875
		Neat	2.3	29.969943
		AA + Wnt3A	2.1	28.304663
		Wnt3A	2.9	29.17382225
	24H	MCX	10.5	28.71568825
		MCX + GDF8	35.1	26.79796125
		GDF8	1361.0	20.88415575
		Neat	1094.7	22.50445525
		AA + Wnt3A	862.0	22.17658825
		Wnt3A	1156.9	22.12988625
	30H	MCX	21.1	27.6289175
		MCX + GDF8	57.7	26.982039
		GDF8	924.7	22.49437
		Neat	832.7	22.710474
		AA + Wnt3A	434.6	22.50915625
		Wnt3A	105.1	23.43967675
	48H	MCX	73.6	24.4695235
		MCX + GDF8	140.4	24.059546
		GDF8	196.7	22.270529
		Neat	297.3	22.121592
		AA + Wnt3A	308.1	21.79031225
		Wnt3A	272.9	21.98688725
	72H	MCX	319.7	22.00924525
		MCX + GDF8	504.8	22.599241
		GDF8	422.7	21.693642
		Neat	411.3	21.92087125
		AA + Wnt3A	274.1	21.93233425
		Wnt3A	213.1	22.7747295

Figure 68

		GAPDH-Hs99999905_m1			
Stage	Description	Average of ddCT	Average of CT	StdDev of ddCT	StdDev of CT
0H	ES	1	16.28166375	0	0.063779971
6H	MCX	1	17.167675	0	0.129679848
	MCX + GDF8	1	18.7342185	0	0.343617126
	GDF8	1	18.18648575	0	0.592686651
	Neat	1	18.7712785	0	0.120809901
	AA + Wnt3A	1	17.017628	0	0.320456551
	Wnt3A	1	18.310278	0	0.590436991
24H	MCX	1	17.57825175	0	0.225765407
	MCX + GDF8	1	17.4673155	0	0.1874731
	GDF8	1	16.830046	0	0.191957571
	Neat	1	18.137209	0	0.172746894
	AA + Wnt3A	1	17.464121	0	0.048572579
	Wnt3A	1	17.842105	0	0.149329638
30H	MCX	1	17.55899375	0	0.161380506
	MCX + GDF8	1	18.367542	0	0.100658065
	GDF8	1	17.879352	0	0.412868336
	Neat	1	17.94854725	0	0.249840271
	AA + Wnt3A	1	17.27180625	0	0.452296256
	Wnt3A	1	17.7675545	0	0.394262235
48H	MCX	1	18.28386925	0	0.349895174
	MCX + GDF8	1	18.804283	0	0.945447728
	GDF8	1	17.450945	0	0.342614449
	Neat	1	17.9506265	0	0.32497567
	AA + Wnt3A	1	17.670651	0	0.049015228
	Wnt3A	1	17.688332	0	0.819963852
72H	MCX	1	17.94318925	0	0.490391634
	MCX + GDF8	1	19.19202475	0	0.40705415
	GDF8	1	18.0303185	0	0.141377516
	Neat	1	18.2179935	0	0.601472099
	AA + Wnt3A	1	17.60177375	0	0.228450291

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Figure 69

Stage	Description	GATA4-Hs00171403_m1 Average of ddCT	Average of CT
0H	ES	1.0	29.19051175
6H	MCX	3.6	28.23114475
	MCX + GDF8	8.4	28.55975325
	GDF8	7.7	28.15902725
	Neat	3.5	29.851363
	AA + Wnt3A	9.6	26.66485725
	Wnt3A	4.1	29.168273
24H	MCX	147.9	23.76583725
	MCX + GDF8	234.7	22.9882375
	GDF8	41.5	24.85587875
	Neat	28.0	26.72386375
	AA + Wnt3A	89.5	24.375598
	Wnt3A	30.6	26.30271875
30H	MCX	311.1	22.6753045
	MCX + GDF8	342.6	23.34198825
	GDF8	57.6	25.4343875
	Neat	34.1	26.25329675
	AA + Wnt3A	108.6	23.74061275
	Wnt3A	32.8	25.6292
48H	MCX	398.3	22.55382925
	MCX + GDF8	431.9	22.95162825
	GDF8	122.7	23.4128555
	Neat	57.3	25.0108985
	AA + Wnt3A	333.7	22.190953
	Wnt3A	205.8	22.90623
72H	MCX	689.7	21.41324
	MCX + GDF8	1035.1	22.07600025
	GDF8	323.4	22.59249
	Neat	228.6	23.280558
	AA + Wnt3A	646.0	21.1690275
	Wnt3A	513.5	22.01849025

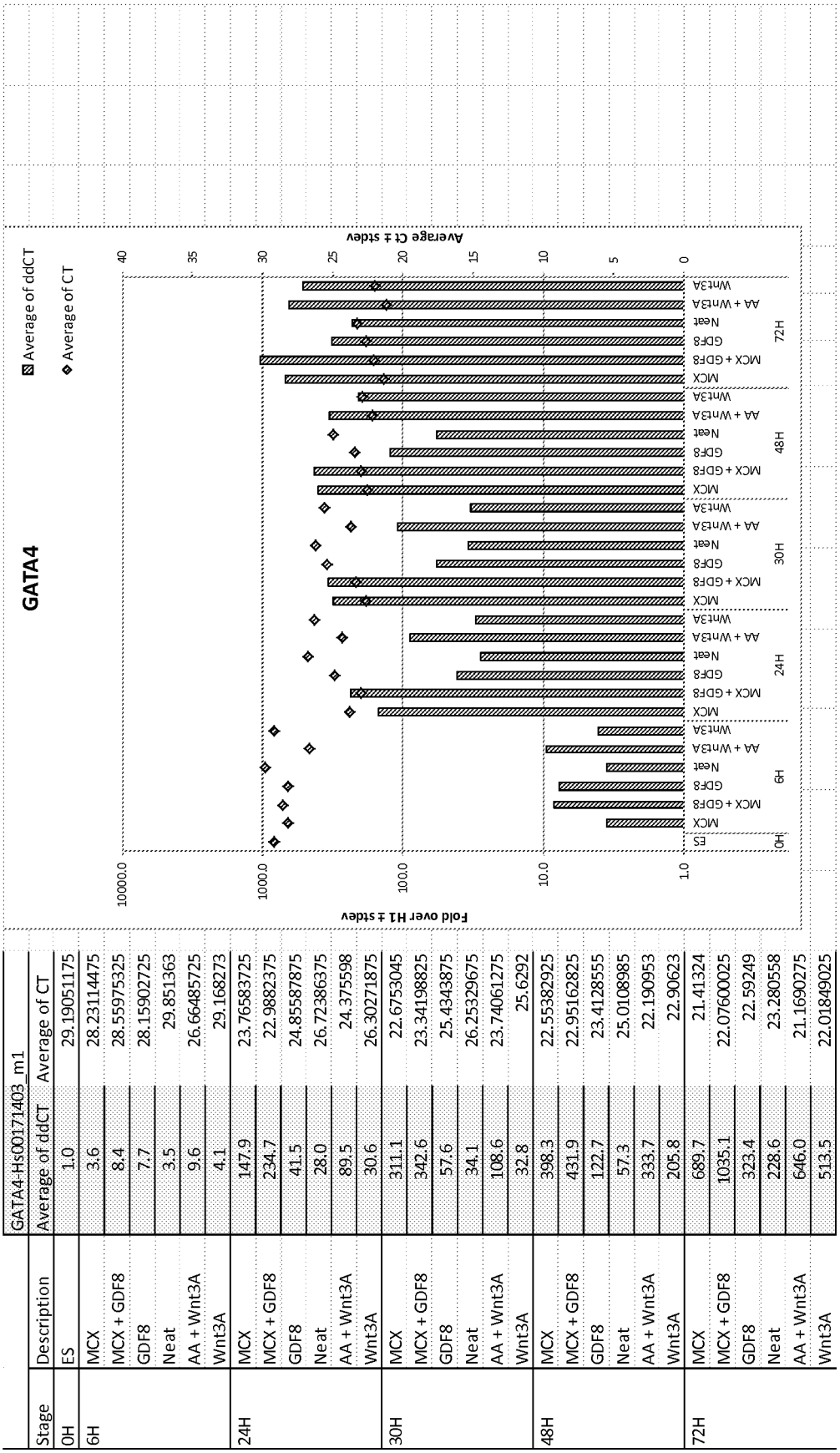


Figure 70

		GATA6-Hs00232018_m1	
Stage	Description	Average of ddCT	Average of CT
0H	ES	1.0	34.990152
6H	MCX	3.0	34.2791805
	MCX + GDF8	1.1	38.1029925
	GDF8	5.5	34.49656025
	Neat	7.6	34.716315
	AA + Wnt3A	24.3	31.24212125
	Wnt3A	5.5	34.55417525
24H	MCX	42020.6	21.97602825
	MCX + GDF8	81025.8	20.8994785
	GDF8	47752.5	21.024552
	Neat	18851.6	23.67589975
	AA + Wnt3A	85506.6	20.81782425
	Wnt3A	23413.2	23.06446325
30H	MCX	137406.7	20.23829
	MCX + GDF8	154594.0	20.8680945
	GDF8	63845.0	21.65445725
	Neat	40839.1	22.369737
	AA + Wnt3A	78869.6	20.41690625
	Wnt3A	22700.5	21.991169
48H	MCX	49917.3	21.370738
	MCX + GDF8	42190.6	22.13505425
	GDF8	14353.8	22.33897925
	Neat	8982.2	23.51260575
	AA + Wnt3A	50362.3	20.74960475
	Wnt3A	50544.4	20.75944275
72H	MCX	37437.5	21.45357775
	MCX + GDF8	43017.3	22.49352575
	GDF8	8516.1	23.66857975
	Neat	8041.7	23.93991275
	AA + Wnt3A	42297.7	20.93318775
	Wnt3A	40637.5	21.50727425

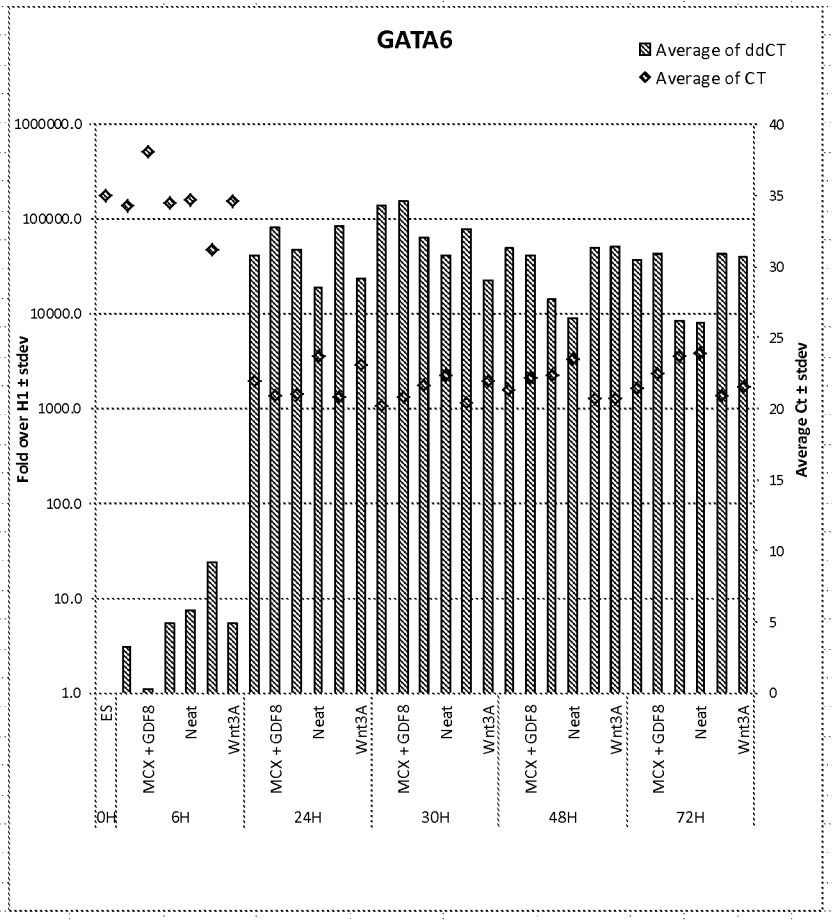
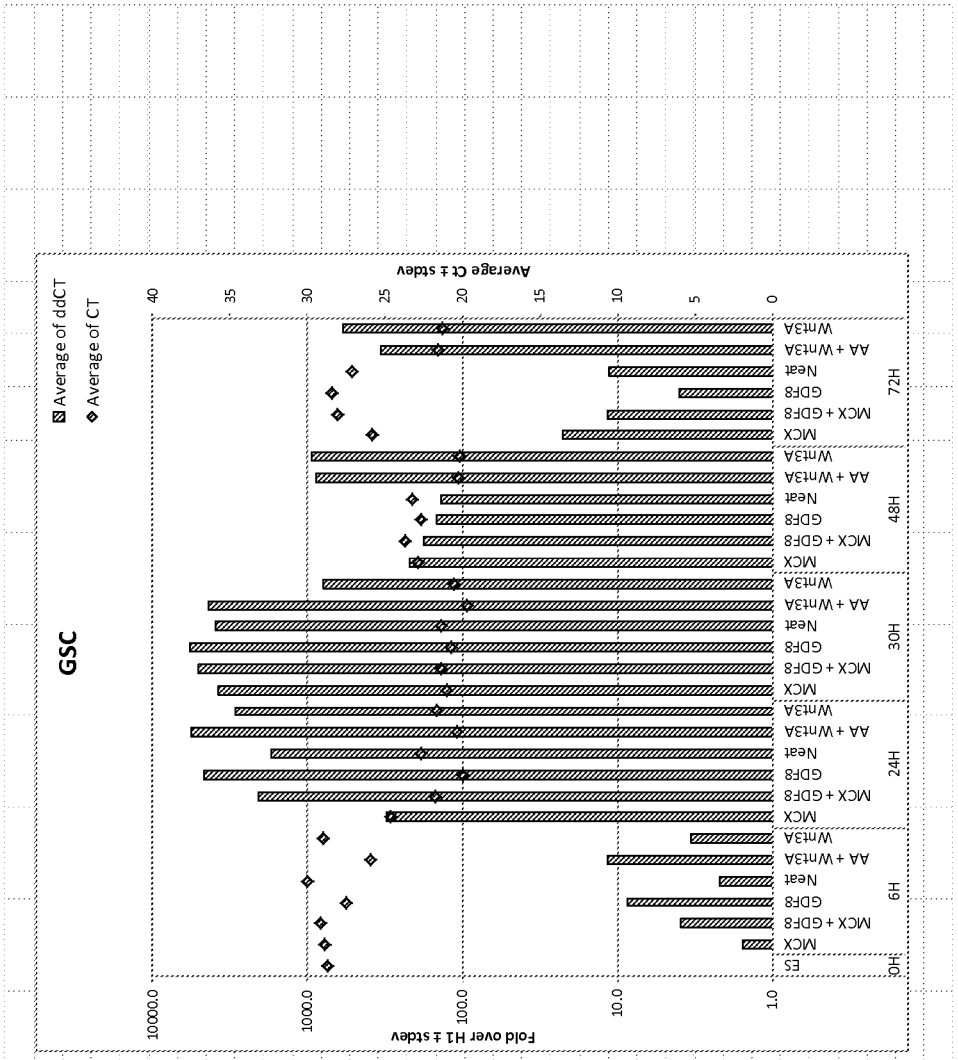


Figure 71



	Stage	Description	GSC-Hs00418279_m1 Average of ddCT	Average of CT
	0H	ES	1.0	28.658454
	6H	MCX	1.6	28.9191855
		MCX + GDF8	3.8	29.177881
		GDF8	8.5	27.47787375
		Neat	2.2	30.019098
		AA + Wnt3A	11.5	25.8753035
		Wnt3A	3.3	28.96452375
	24H	MCX	307.9	24.651367
		MCX + GDF8	2085.6	21.75823475
		GDF8	4684.1	19.9643085
		Neat	1716.8	22.70773575
		AA + Wnt3A	5666.7	20.31599625
		Wnt3A	2893.9	21.66043725
	30H	MCX	3732.9	21.00834275
		MCX + GDF8	5044.8	21.38268
		GDF8	5798.0	20.69569625
		Neat	3930.6	21.3318495
		AA + Wnt3A	4350.6	19.662382
		Wnt3A	790.8	20.51648925
	48H	MCX	220.2	22.89259225
		MCX + GDF8	176.7	23.73796
		GDF8	147.2	22.6389735
		Neat	137.7	23.220938
		AA + Wnt3A	881.2	20.2662055
		Wnt3A	929.6	20.204676
	72H	MCX	22.5	25.841103
		MCX + GDF8	11.6	28.0305085
		GDF8	4.0	28.423621
		Neat	11.4	27.08837
		AA + Wnt3A	336.6	21.595327
		Wnt3A	581.9	21.314906

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Figure 72

		KIT-Hs00174029_m1	
Stage	Description	Average of ddCT	Average of CT
0H	ES	1.0	25.45900275
6H	MCX	0.5	27.48555625
	MCX + GDF8	0.5	28.944547
	GDF8	0.7	27.79625775
	Neat	0.7	28.51821975
	AA + Wnt3A	0.9	26.38911475
	Wnt3A	0.9	27.59351175
24H	MCX	75.5	27.78537925
	MCX + GDF8	188.9	26.35009525
	GDF8	798.0	23.63346275
	Neat	512.0	25.58008925
	AA + Wnt3A	835.1	24.20456775
	Wnt3A	501.4	25.32131825
30H	MCX	276.4	25.892663
	MCX + GDF8	579.7	25.63128025
	GDF8	1628.6	23.65298125
	Neat	944.9	24.50741275
	AA + Wnt3A	948.5	23.19136
	Wnt3A	3.5	25.12221225
48H	MCX	6.5	24.760804
	MCX + GDF8	14.8	24.09185475
	GDF8	22.0	22.17045375
	Neat	19.8	22.8188965
	AA + Wnt3A	24.1	22.26088925
	Wnt3A	17.9	22.71163125
72H	MCX	4.3	25.01408975
	MCX + GDF8	7.3	25.504648
	GDF8	17.9	23.04807925
	Neat	19.1	23.1381575
	AA + Wnt3A	18.7	22.5550095
	Wnt3A	22.2	22.82813125

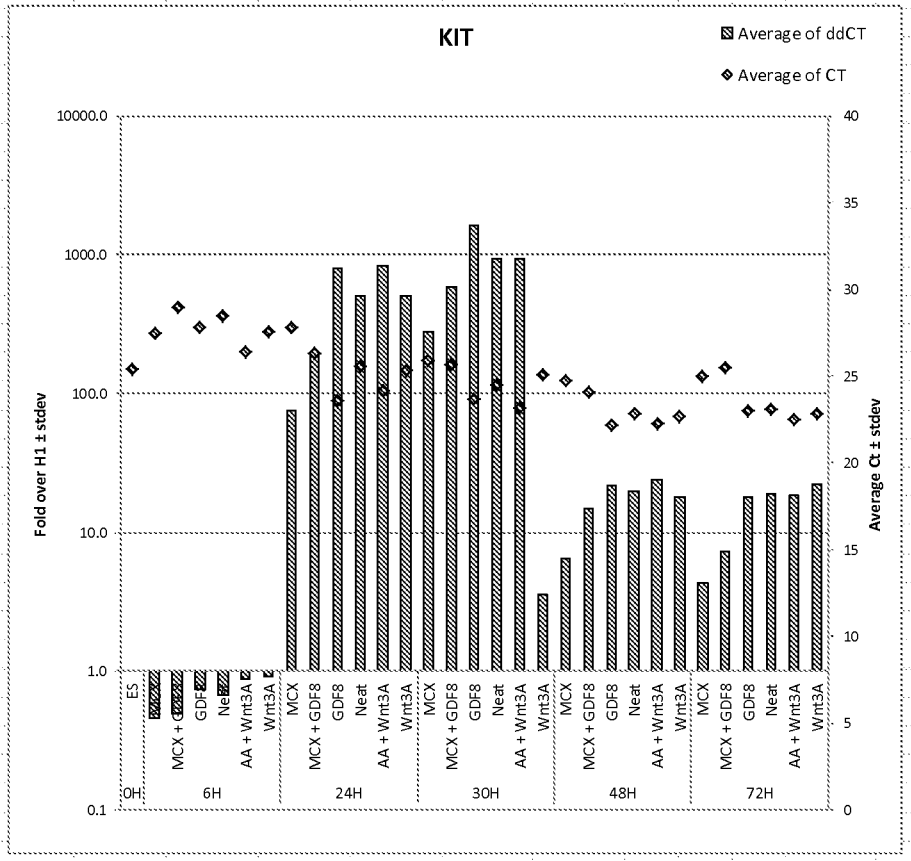
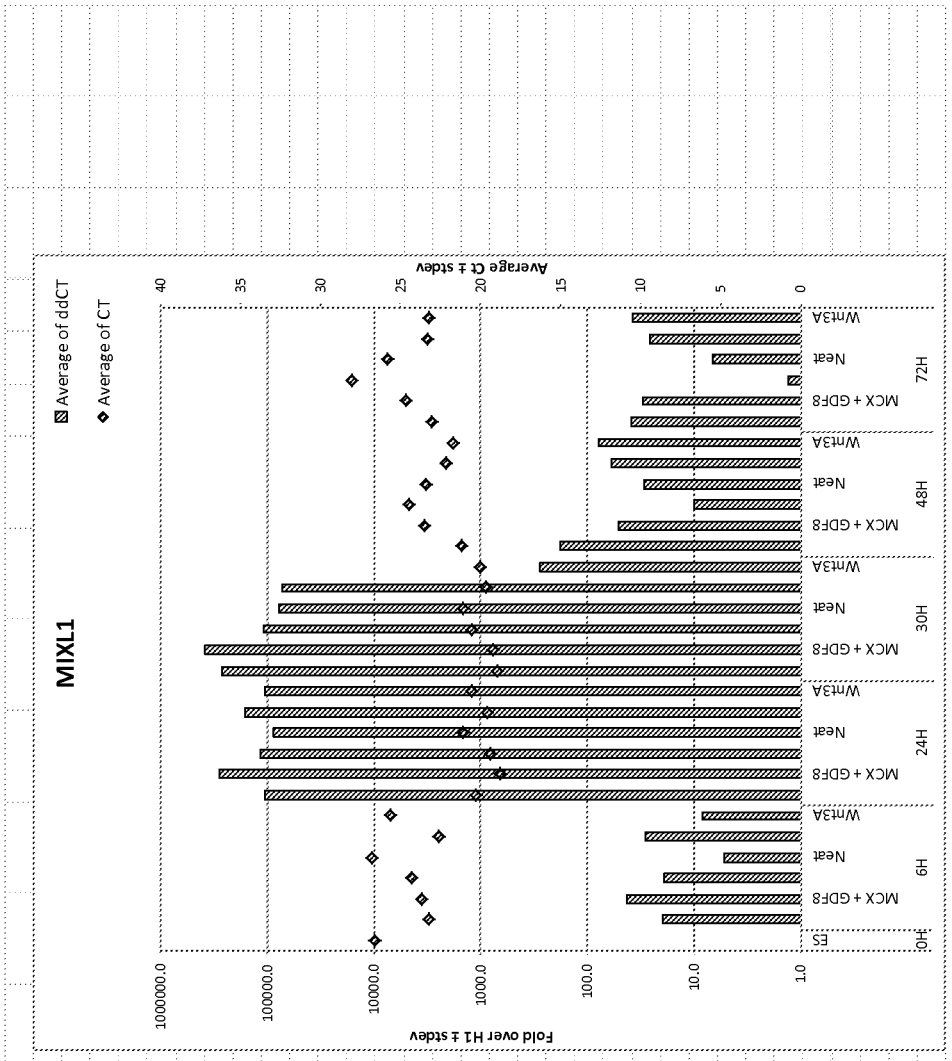
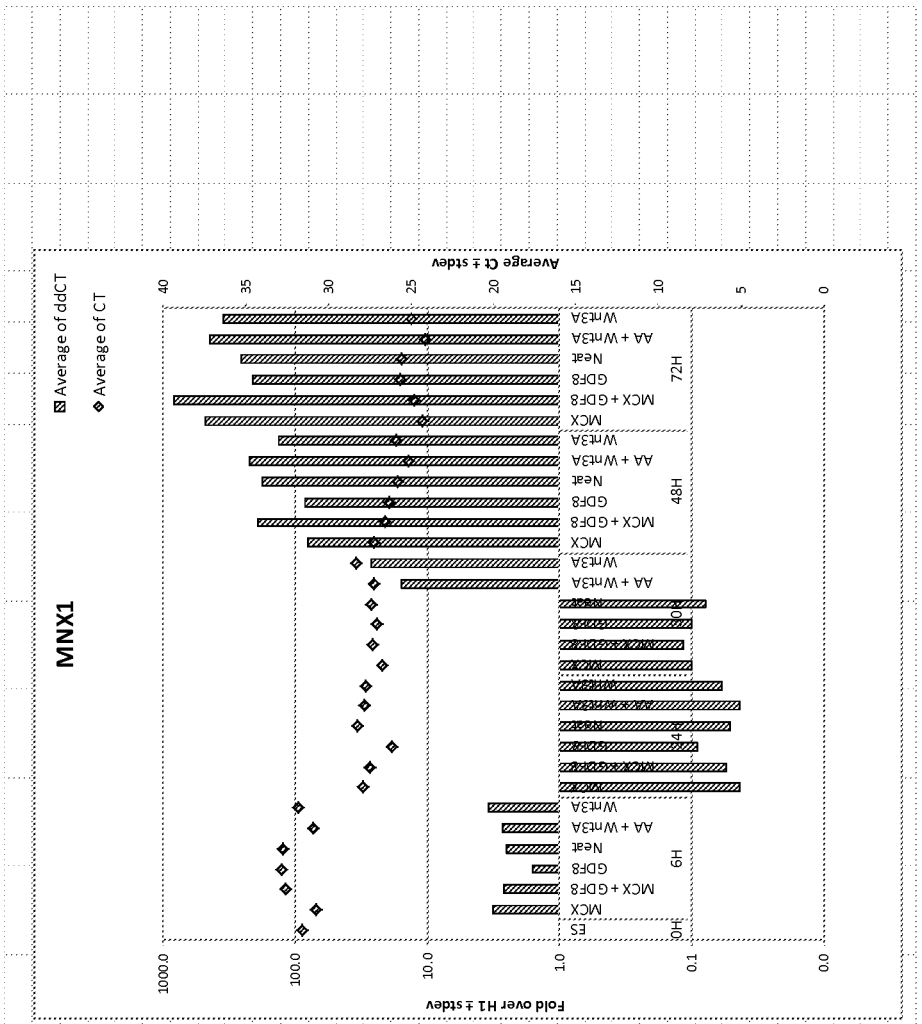


Figure 73



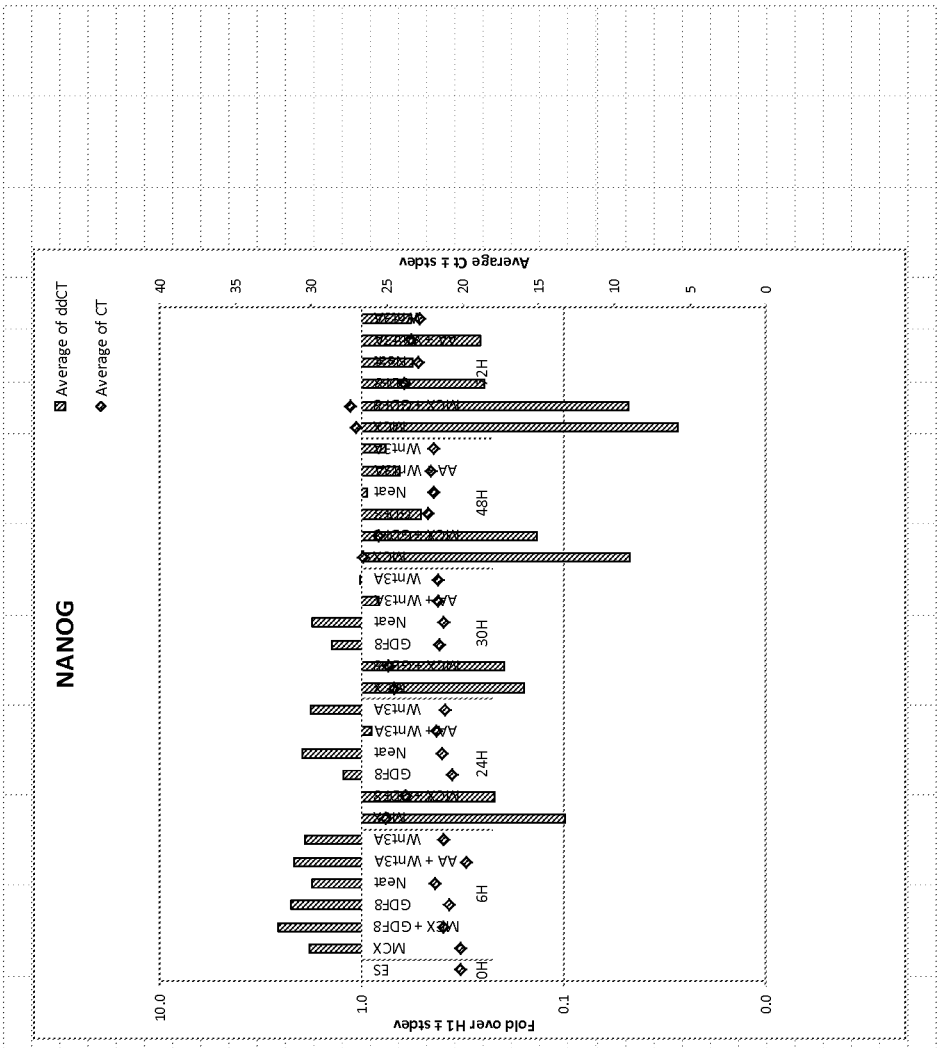
	MIXL1-Hs00430824_g1		
Stage	Description	Average of ddCT	Average of CT
0H	ES	1.0	26.66712025
6H	MCX	19.6	23.25942175
	MCX + GDF8	43.0	23.69421875
	GDF8	18.9	24.33267125
	Neat	5.2	26.7779945
	AA + Wnt3A	28.7	22.578432
	Wnt3A	8.2	25.65967325
24H	MCX	104018.3	20.32173475
	MCX + GDF8	285561.1	18.7529745
	GDF8	116130.6	19.4222955
	Neat	87873.9	21.1221985
	AA + Wnt3A	160959.8	19.579072
	Wnt3A	105764.3	20.56027025
30H	MCX	266532.0	18.952344
	MCX + GDF8	379000.1	19.250916
	GDF8	107392.4	20.577777
	Neat	78759.6	21.0910285
	AA + Wnt3A	72530.7	19.71169625
	Wnt3A	280.5	20.02061475
48H	MCX	178.2	21.19214125
	MCX + GDF8	51.6	23.500574
	GDF8	10.1	24.500413
	Neat	29.4	23.458623
	AA + Wnt3A	59.2	22.16680775
	Wnt3A	79.4	21.76662425
72H	MCX	38.7	23.057191
	MCX + GDF8	30.4	24.64980625
	GDF8	1.3	28.044167
	Neat	6.7	25.8686065
	AA + Wnt3A	25.9	23.2951505
	Wnt3A	37.6	23.27805375

Figure 74



	MNX1-Hs00232128_m1		
Stage	Description	Average of ddCT	Average of CT
0H	ES	1.0	31.5801515
6H	MCX	3.2	30.77168
	MCX + GDF8	2.7	32.629677
	GDF8	1.6	32.8243675
	Neat	2.5	32.75609425
	AA + Wnt3A	2.7	30.887428
	Wnt3A	3.4	31.82737325
24H	MCX	0.0	27.9199995
	MCX + GDF8	0.1	27.49287325
	GDF8	0.1	26.111221
	Neat	0.1	28.23380775
	AA + Wnt3A	0.0	27.81358175
	Wnt3A	0.1	27.75144125
30H	MCX	0.1	26.707779
	MCX + GDF8	0.1	27.28727525
	GDF8	0.1	27.029443
	Neat	0.1	27.4433345
	AA + Wnt3A	15.5	27.2303885
	Wnt3A	26.8	28.316353
48H	MCX	81.2	27.23344
	MCX + GDF8	190.1	26.527554
	GDF8	85.5	26.34813525
	Neat	176.3	25.78528
	AA + Wnt3A	221.9	25.174317
	Wnt3A	133.6	25.928535
72H	MCX	474.2	24.34704225
	MCX + GDF8	823.5	24.79948525
	GDF8	209.1	25.6148805
	Neat	253.4	25.5255
	AA + Wnt3A	441.5	24.11180575
	Wnt3A	349.8	24.96535

Figure 75



	NANOG-Hs02387400_g1		
Stage	Description	Average of ddCT	Average of CT
0H	ES	1.0	20.16169025
6H	MCX	1.8	20.180204
	MCX + GDF8	2.6	21.2491235
	GDF8	2.3	20.89765575
	Neat	1.8	21.83830675
	AA + Wnt3A	2.2	19.7743475
	Wnt3A	1.9	21.2496405
24H	MCX	0.1	25.10039025
	MCX + GDF8	0.2	23.8090735
	GDF8	1.2	20.706386
	Neat	2.0	21.3291335
	AA + Wnt3A	0.9	21.790919
	Wnt3A	1.8	21.16866725
30H	MCX	0.2	24.518166
	MCX + GDF8	0.2	24.87409225
	GDF8	1.4	21.56382475
	Neat	1.8	21.30894
	AA + Wnt3A	0.8	21.6197255
	Wnt3A	1.0	21.6072965
48H	MCX	0.0	26.569154
	MCX + GDF8	0.1	25.5556195
	GDF8	0.5	22.314382
	Neat	0.9	21.9231275
	AA + Wnt3A	0.7	22.1606935
	Wnt3A	0.8	21.953816
72H	MCX	0.0	27.01686525
	MCX + GDF8	0.0	27.44781175
	GDF8	0.2	23.91687375
	Neat	0.6	22.93551975
	AA + Wnt3A	0.3	23.434533
	Wnt3A	0.6	22.8200025

Figure 76

		OTX2-Hs00222238_m1	
Stage	Description	Average of ddCT	Average of CT
0H	ES	1.0	26.446198
6H	MCX	5.2	24.96174325
	MCX + GDF8	4.4	26.759839
	GDF8	6.3	25.70246075
	Neat	5.8	26.406152
	AA + Wnt3A	6.2	24.54331675
	Wnt3A	5.7	25.96296425
24H	MCX	26.8	22.70370725
	MCX + GDF8	74.7	21.1066635
	GDF8	106.3	19.96181875
	Neat	60.7	22.07644675
	AA + Wnt3A	136.4	20.23405825
	Wnt3A	69.0	21.595414
30H	MCX	76.9	21.31845075
	MCX + GDF8	140.0	21.100763
	GDF8	134.7	20.66818625
	Neat	94.1	21.2553815
	AA + Wnt3A	141.6	20.22521825
	Wnt3A	59.2	22.04412025
48H	MCX	103.4	21.75975275
	MCX + GDF8	106.1	22.2431245
	GDF8	151.5	20.4878305
	Neat	153.6	20.8515765
	AA + Wnt3A	403.8	19.17953625
	Wnt3A	324.1	19.51650275
72H	MCX	110.9	21.31467725
	MCX + GDF8	141.0	22.2162505
	GDF8	44.1	22.7322205
	Neat	70.8	22.235525
	AA + Wnt3A	233.6	19.94864575
	Wnt3A	199.1	20.65040825

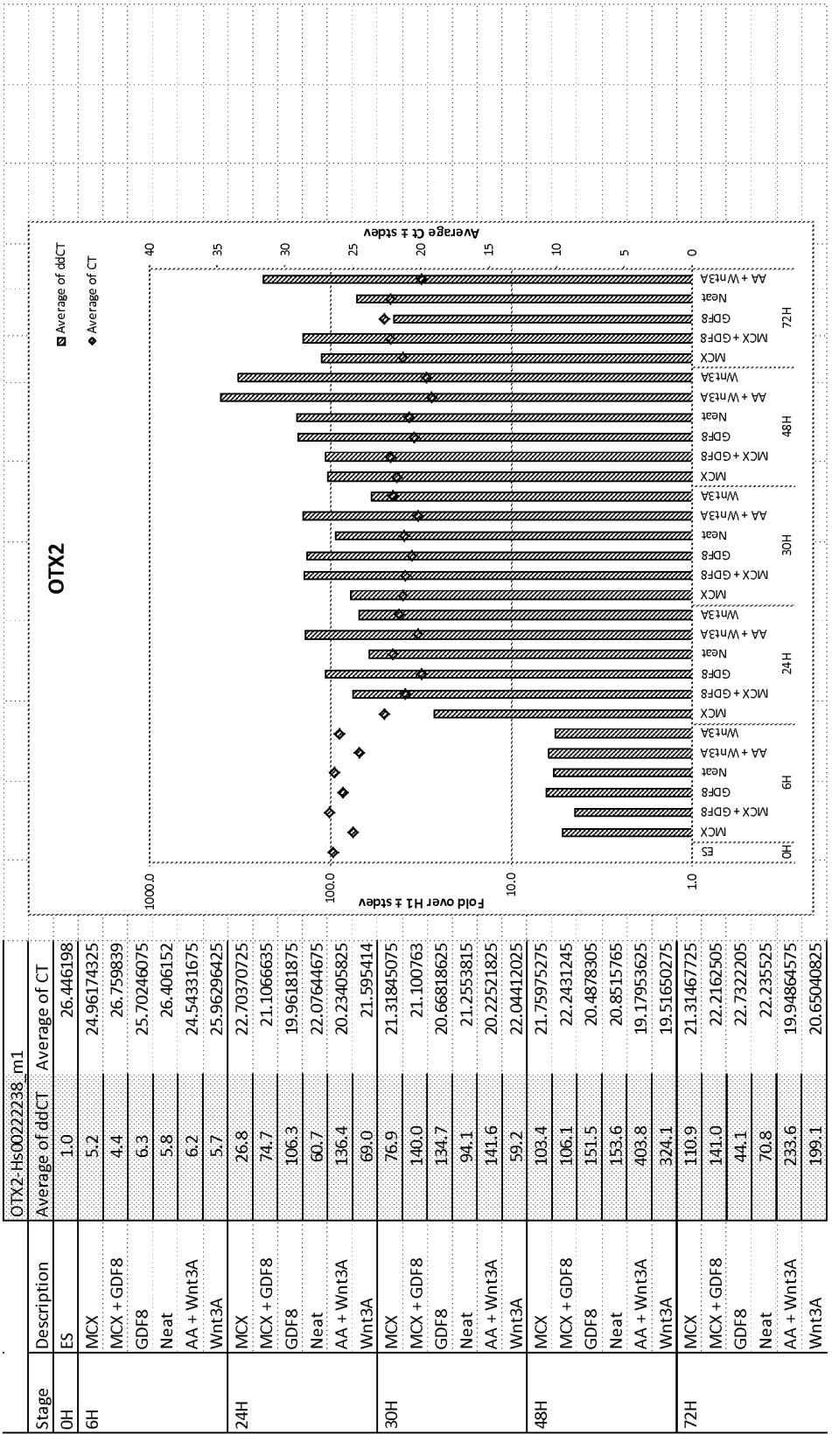
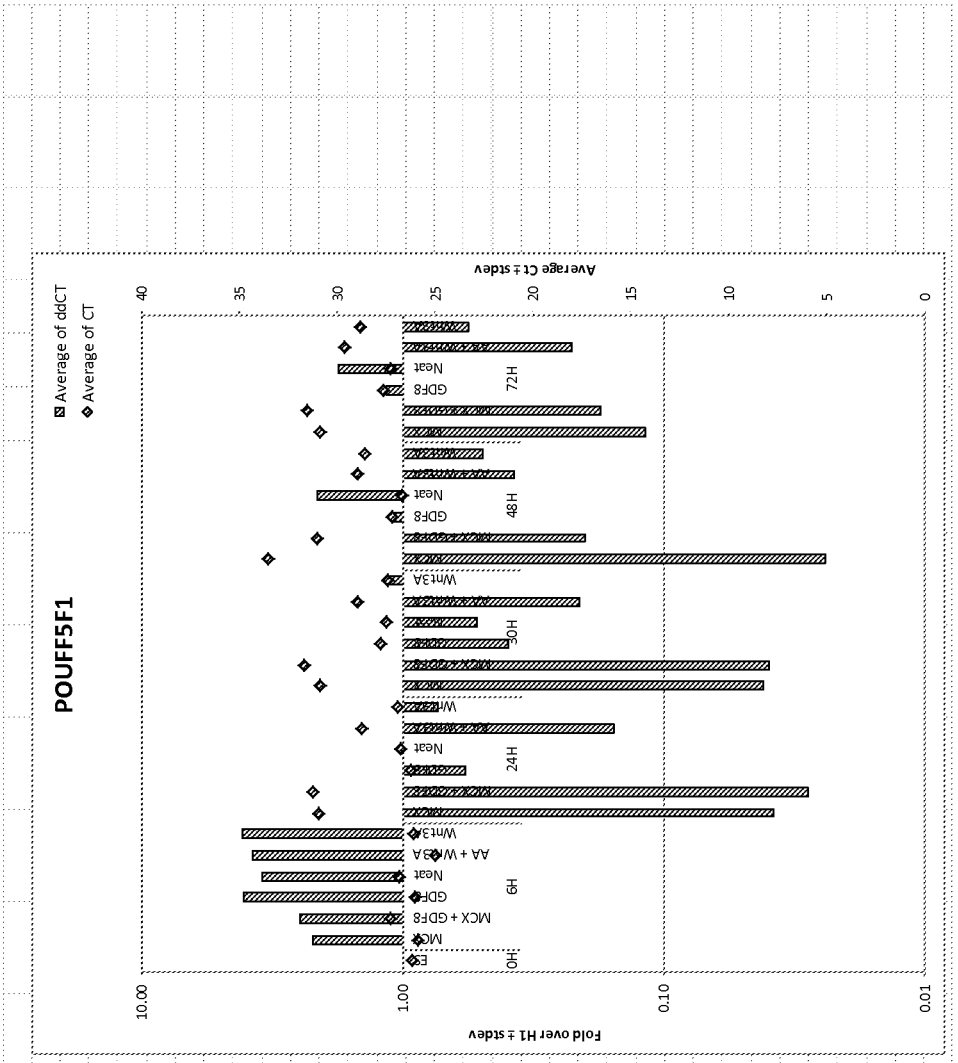
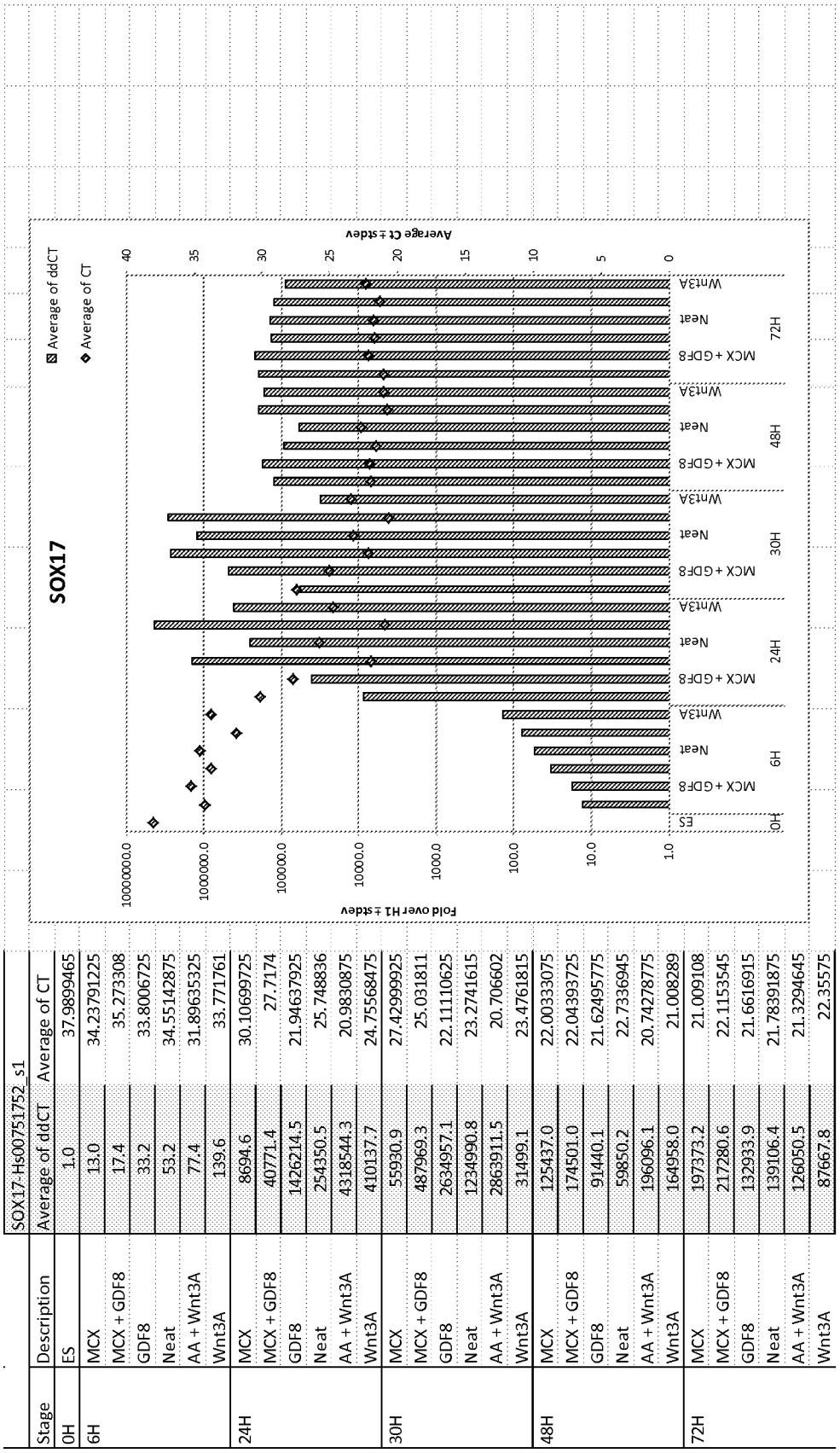


Figure 77



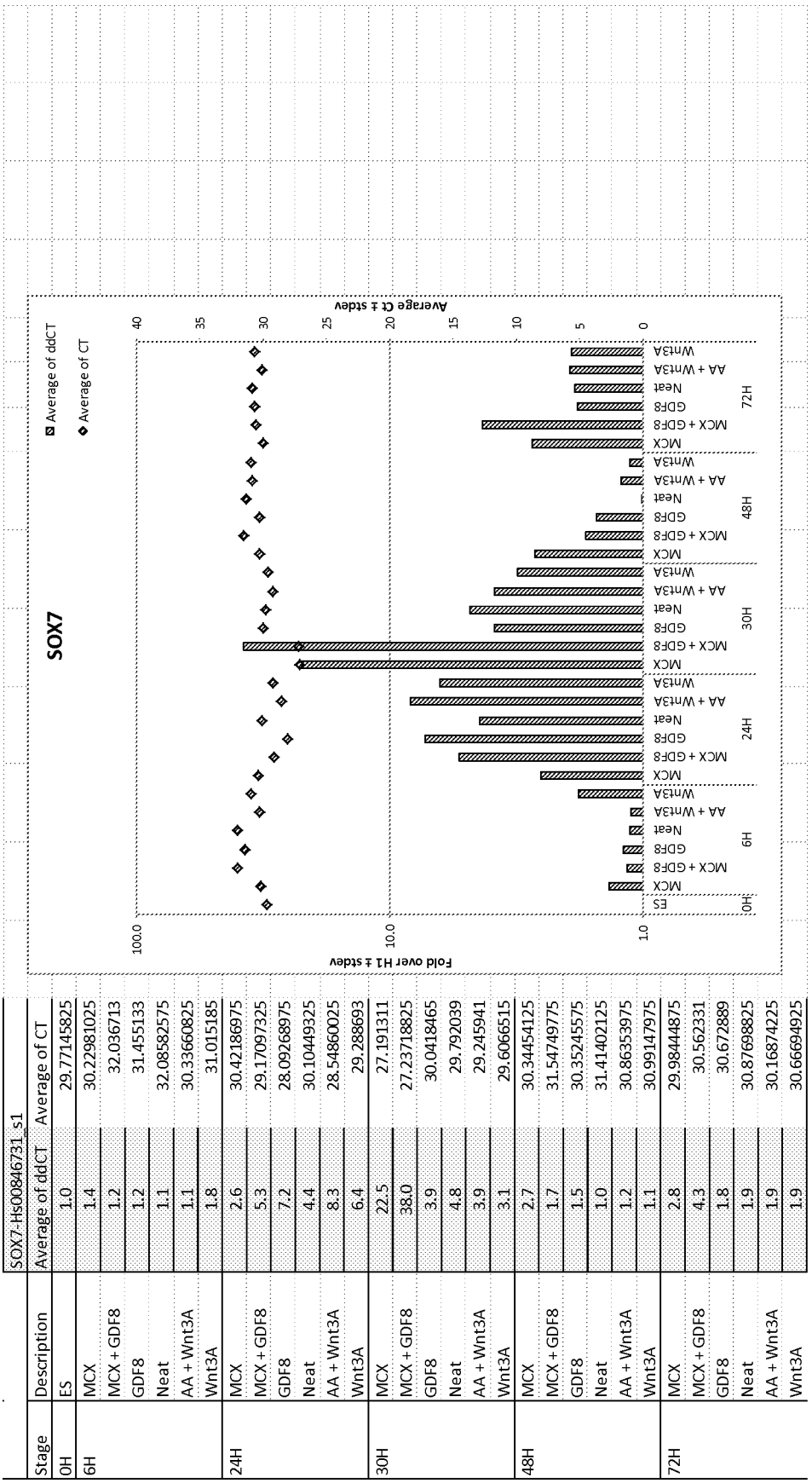
	Stage	Description	POU5F1-Hs00742896_s1 Average of ddCT	Average of CT
	0H	ES	1.00	26.15288625
	6H	MCX	2.22	25.89640675
		MCX + GDF8	2.49	27.2872405
		GDF8	4.06	26.04998125
		Neat	3.45	26.8598365
		AA + Wnt3A	3.78	24.9841895
		Wnt3A	4.13	26.13255675
	24H	MCX	0.04	30.94236
		MCX + GDF8	0.03	31.25960125
		GDF8	0.57	26.2544535
		Neat	1.00	26.7574365
		AA + Wnt3A	0.16	28.787047
		Wnt3A	0.73	26.920047
	30H	MCX	0.04	30.87972575
		MCX + GDF8	0.04	31.66796
		GDF8	0.40	27.84078875
		Neat	0.52	27.50559375
		AA + Wnt3A	0.21	28.95805525
		Wnt3A	1.15	27.4439
	48H	MCX	0.02	33.52965775
		MCX + GDF8	0.20	31.025079
		GDF8	1.08	27.21654775
		Neat	2.12	26.73446875
		AA + Wnt3A	0.37	28.96915975
		Wnt3A	0.49	28.5801595
	72H	MCX	0.12	30.8945545
		MCX + GDF8	0.17	31.5889035
		GDF8	1.16	27.69417775
		Neat	1.77	27.29369525
		AA + Wnt3A	0.22	29.63042225
		Wnt3A	0.56	28.8198565

Figure 78



Stage	Description	SOX17-Hs00751752_s1 Average of ddCT	Average of CT
0H	ES	1.0	37.9899465
6H	MCX	13.0	34.23791225
	MCX + GDF8	17.4	35.273308
	GDF8	33.2	33.8006725
	Neat	53.2	34.55142875
	AA + Wnt3A	77.4	31.89635325
	Wnt3A	139.6	33.771761
24H	MCX	8694.6	30.10699725
	MCX + GDF8	40771.4	27.7174
	GDF8	1426214.5	21.94637925
	Neat	254350.5	25.748836
	AA + Wnt3A	4318544.3	20.9830875
	Wnt3A	410137.7	24.75568475
30H	MCX	55930.9	27.42999925
	MCX + GDF8	487969.3	25.031811
	GDF8	2634957.1	22.11110625
	Neat	1234990.8	23.2741615
	AA + Wnt3A	2863911.5	20.706602
	Wnt3A	31499.1	23.4761815
48H	MCX	125437.0	22.00333075
	MCX + GDF8	174501.0	22.04393725
	GDF8	91440.1	21.62495775
	Neat	59850.2	22.7336945
	AA + Wnt3A	196096.1	20.74278775
	Wnt3A	164958.0	21.008289
72H	MCX	197373.2	21.009108
	MCX + GDF8	217280.6	22.1153545
	GDF8	132933.9	21.6616915
	Neat	139106.4	21.78391875
	AA + Wnt3A	126050.5	21.3294645
	Wnt3A	87667.8	22.35575

Figure 79



	SOX7-Hs00846731_s1		
Stage	Description	Average of ddCT	Average of CT
0H	ES	1.0	29.77145825
6H	MCX	1.4	30.22981025
	MCX + GDF8	1.2	32.036713
	GDF8	1.2	31.455133
	Neat	1.1	32.08582575
	AA + Wnt3A	1.1	30.33660825
	Wnt3A	1.8	31.015185
24H	MCX	2.6	30.42186975
	MCX + GDF8	5.3	29.17097325
	GDF8	7.2	28.09268975
	Neat	4.4	30.10449325
	AA + Wnt3A	8.3	28.54860025
	Wnt3A	6.4	29.288693
30H	MCX	22.5	27.191311
	MCX + GDF8	38.0	27.23718825
	GDF8	3.9	30.0418465
	Neat	4.8	29.792039
	AA + Wnt3A	3.9	29.245941
	Wnt3A	3.1	29.6066515
48H	MCX	2.7	30.34454125
	MCX + GDF8	1.7	31.54749775
	GDF8	1.5	30.35245575
	Neat	1.0	31.41402125
	AA + Wnt3A	1.2	30.86353975
	Wnt3A	1.1	30.99147975
72H	MCX	2.8	29.98444875
	MCX + GDF8	4.3	30.562331
	GDF8	1.8	30.672889
	Neat	1.9	30.87698825
	AA + Wnt3A	1.9	30.16874225
	Wnt3A	1.9	30.66694925

Figure 80

Stage	Description	T-Hs00610080_m1 Average of ddCT	Average of CT
0H	ES	1.0	28.8712275
6H	MCX	31.5	24.7762485
	MCX + GDF8	57.9	25.4652125
	GDF8	35.2	25.6474757 5
	Neat	10.6	27.9601755
	AA + Wnt3A	39.7	24.299049
	Wnt3A	12.3	27.277599
24H	MCX	1524.6	20.157217
	MCX + GDF8	1388.3	20.18051025
	GDF8	75.0	23.75389525
	Neat	88.0	24.82903525
	AA + Wnt3A	53.4	24.883103
	Wnt3A	101.3	24.334308
30H	MCX	404.0	22.052845
	MCX + GDF8	292.8	23.32683125
	GDF8	44.3	25.565177
	Neat	52.7	25.381405
	AA + Wnt3A	25.9	25.51441775
	Wnt3A	29.4	25.47393475
48H	MCX	26.3	26.15560575
	MCX + GDF8	16.1	27.38118025
	GDF8	8.7	26.93450525
	Neat	31.6	25.552775
	AA + Wnt3A	2.6	28.8829965
	Wnt3A	3.9	28.2976405
72H	MCX	12.7	26.872777
	MCX + GDF8	5.8	29.23774175
	GDF8	6.3	27.952985
	Neat	15.5	26.8526075
	AA + Wnt3A	3.3	28.4675235
	Wnt3A	4.5	28.533259

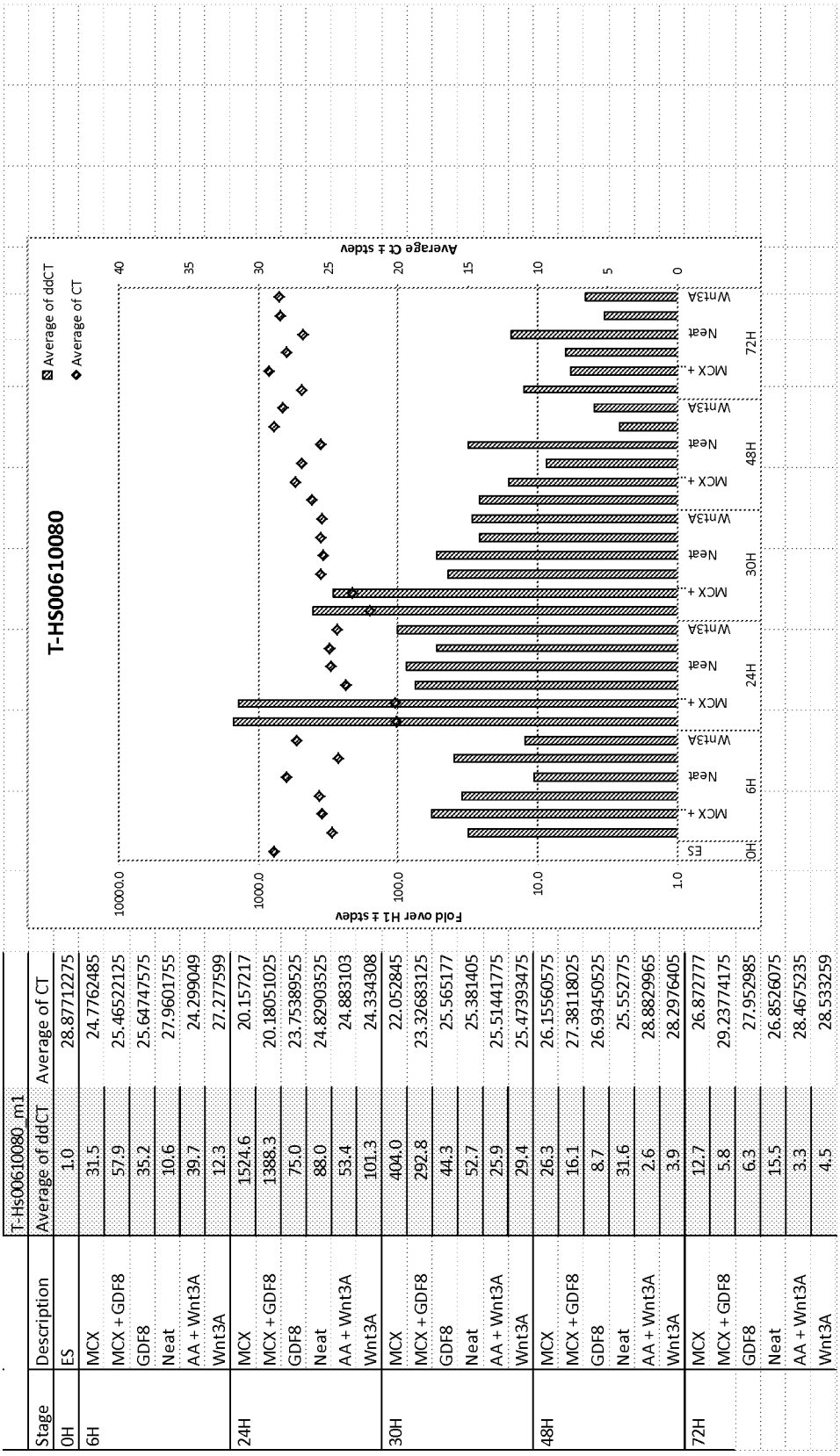
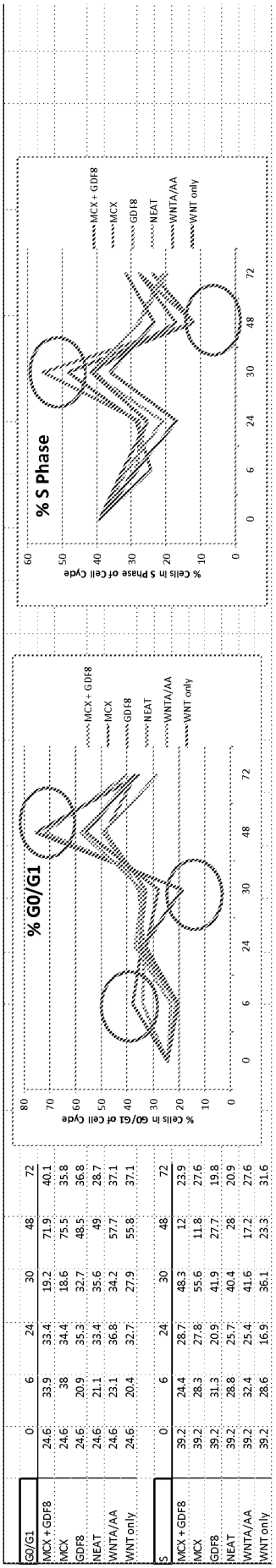


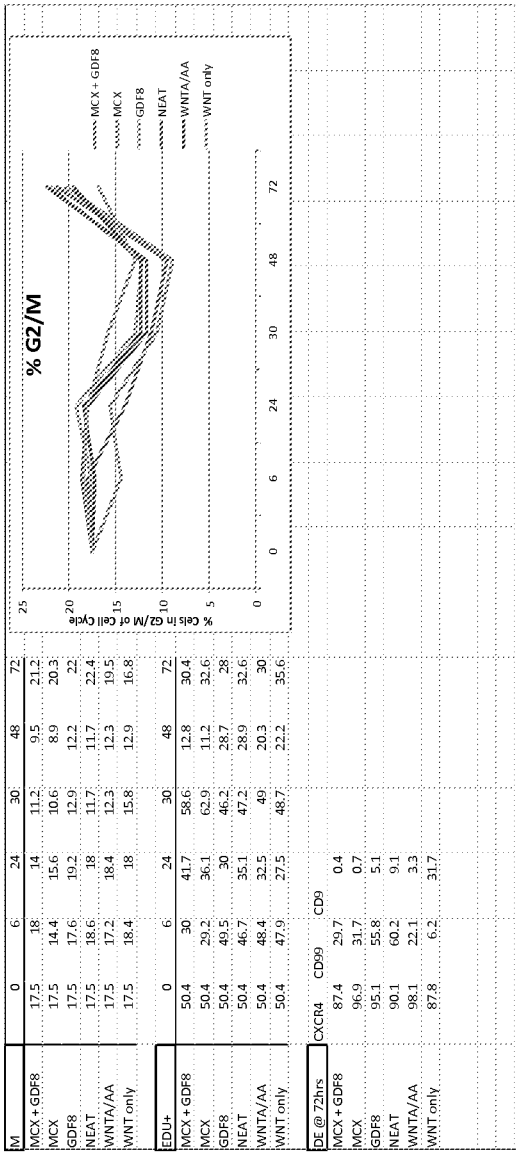
Figure 81



G0/G1	0	6	24	30	48	72
MCX + GDF8	24.6	33.9	33.4	19.2	71.9	40.1
MCX	24.6	38	34.4	18.6	75.5	35.8
GDF8	24.6	20.9	35.3	32.7	48.5	36.8
NEAT	24.6	21.1	33.4	35.6	49	28.7
WNTA/AA	24.6	23.1	36.8	34.2	57.7	37.1
WNT only	24.6	20.4	32.7	27.9	55.8	37.1

S	0	6	24	30	48	72
MCX + GDF8	39.2	24.4	28.7	48.3	12	23.9
MCX	39.2	28.3	27.8	55.6	11.8	27.6
GDF8	39.2	31.3	20.9	41.9	27.7	19.8
NEAT	39.2	28.8	25.7	40.4	28	20.9
WNTA/AA	39.2	32.4	25.4	41.6	17.2	27.6
WNT only	39.2	28.6	16.9	36.1	23.3	31.6

Figure 82



M	0	6	24	30	48	72
MCX + GDF8	17.5	18	14	11.2	9.5	21.2
MCX	17.5	14.4	15.6	10.6	8.9	20.3
GDF8	17.5	17.6	19.2	12.9	12.2	22
NEAT	17.5	18.6	18	11.7	11.7	22.4
WNTA/AA	17.5	17.2	18.4	12.3	12.3	19.5
WNT only	17.5	18.4	18	15.8	12.9	16.8

EDU+	0	6	24	30	48	72
MCX + GDF8	50.4	30	41.7	58.6	12.8	30.4
MCX	50.4	29.2	36.1	62.9	11.2	32.6
GDF8	50.4	49.5	30	46.2	28.7	28
NEAT	50.4	46.7	35.1	47.2	28.9	32.6
WNTA/AA	50.4	48.4	32.5	49	20.3	30
WNT only	50.4	47.9	27.5	48.7	22.2	35.6

DE @ 72hrs	CXCR4	CD99	CD9
MCX + GDF8	87.4	29.7	0.4
MCX	96.9	31.7	0.7
GDF8	95.1	55.8	5.1
NEAT	90.1	60.2	9.1
WNTA/AA	98.1	22.1	3.3
WNT only	87.8	6.2	31.7

Figure 83

Ca++	Osmolalit	Batch ID	O2 Satura	CO2 Satur	HCO3	Gas/Electi	Nutrient/	Nutrient/	Cell Densi	Cell Densi	IgG Flow	IgG Range	Tray Locat	Mixing Ro	Media Typ	Cell IgG Ty	Operator
	342	061311 MB	DE Assay			0.92	3.84	1:01					-		Default		novaservice
1.01	350	061311 ME	100	2.3	39.5	5.46	3.92	1:01					-		Default		novaservice
1.01	356	061311 ME	100	2.7	39.4	5.49	3.92	1:01					-		Default		novaservice
1.01	356	061311 ME	100	2.5	40.7	5.431	3.92	1:01					-		Default		novaservice
1.04	350	061311 ME	100	3.9	44.2	5.541	3.801	1:01					-		Default		novaservice
1		061311 ME	100	1.5	33.3	5.441	3.721	1:01					-		Default		novaservice
1	343	061311 ME	100	2.5	34.1	5.49	3.881	1:01					-		Default		novaservice
0.99		061311 ME	100	1.7	29.6	5.46	3.88	1:01					-		Default		novaservice
1	337	061311 ME	100	1.9	33.4	5.46	3.801	1:01					-		Default		novaservice
1.08		E061311 M	100	2.9	27.9	5.56	3.92	1:01					-		Default		novaservice
1.08		061311 ME	100	2.6	25.3	5.5	3.92	1:01					-		Default		novaservice
1.08		061311 ME	100	3.1	24.8	5.461	3.92	1:01					-		Default		novaservice
1.09		061311 ME	100	3.6	28	5.44	3.88	1:01					-		Default		novaservice
1.09		E061311 M	100	3.7	29.1	5.48	4	1:01					-		Default		novaservice
1.07		E061311 M	100	3.3	13.2	5.46	3.881	1:01					-		Default		novaservice
1.07		E061311 M	100	3.6	13.4	5.44	3.96	1:01					-		Default		novaservice
1.1		E061311 M	100	4.3	27.8	5.44	3.88	1:01					-		Default		novaservice
1.11		E061311 M	100	3.5	30	5.5	3.8	1:01					-		Default		novaservice
1.08		E061311 M	100	3.3	15.6	5.44	3.84	1:01					-		Default		novaservice
1.09		E061311 M	100	3.4	16.2	5.5	3.84	1:01					-		Default		novaservice
1.1		E061311 M	100	3.2	28.3	5.52	3.88	1:01					-		Default		novaservice

Ca++	Osmolalit	Batch ID	O2 Satura	CO2 Satur	HCO3	Gas/Electi	Nutrient/	Nutrient/	Cell Densi	Cell Densi	IgG Flow	IgG Range	Tray Locat	Mixing Ro	Media Typ	Cell IgG Ty	Operator
1.01	350	061311 ME	100	2.3	39.5	5.46	3.92	1:01					-		Default		novaservice
1		061311 ME	100	1.5	33.3	5.441	3.721	1:01					-		Default		novaservice
1.08		E061311 M	100	2.9	27.9	5.56	3.92	1:01					-		Default		novaservice
1.09		E061311 M	100	3.7	29.1	5.48	4	1:01					-		Default		novaservice
1.11		E061311 M	100	3.5	30	5.5	3.8	1:01					-		Default		novaservice
1.01	356	061311 ME	100	2.7	39.4	5.49	3.92	1:01					-		Default		novaservice
1	343	061311 ME	100	2.5	34.1	5.49	3.881	1:01					-		Default		novaservice
1.08		061311 ME	100	2.6	25.3	5.5	3.92	1:01					-		Default		novaservice
1.07		E061311 M	100	3.3	13.2	5.46	3.881	1:01					-		Default		novaservice
1.08		E061311 M	100	3.3	15.6	5.44	3.84	1:01					-		Default		novaservice
1.01	356	061311 ME	100	2.5	40.7	5.431	3.92	1:01					-		Default		novaservice
0.99		061311 ME	100	1.7	29.6	5.46	3.88	1:01					-		Default		novaservice
1.08		061311 ME	100	3.1	24.8	5.461	3.92	1:01					-		Default		novaservice
1.07		E061311 M	100	3.6	13.4	5.44	3.96	1:01					-		Default		novaservice
1.09		E061311 M	100	3.4	16.2	5.5	3.84	1:01					-		Default		novaservice
1.04	350	061311 ME	100	3.9	44.2	5.541	3.801	1:01					-		Default		novaservice
1	337	061311 ME	100	1.9	33.4	5.46	3.801	1:01					-		Default		novaservice
1.09		061311 ME	100	3.6	28	5.44	3.88	1:01					-		Default		novaservice
1.1		E061311 M	100	4.3	27.8	5.44	3.88	1:01					-		Default		novaservice
1.1		E061311 M	100	3.2	28.3	5.52	3.88	1:01					-		Default		novaservice

WO 2014/106141 PCT/US2013/078191

Figure 84

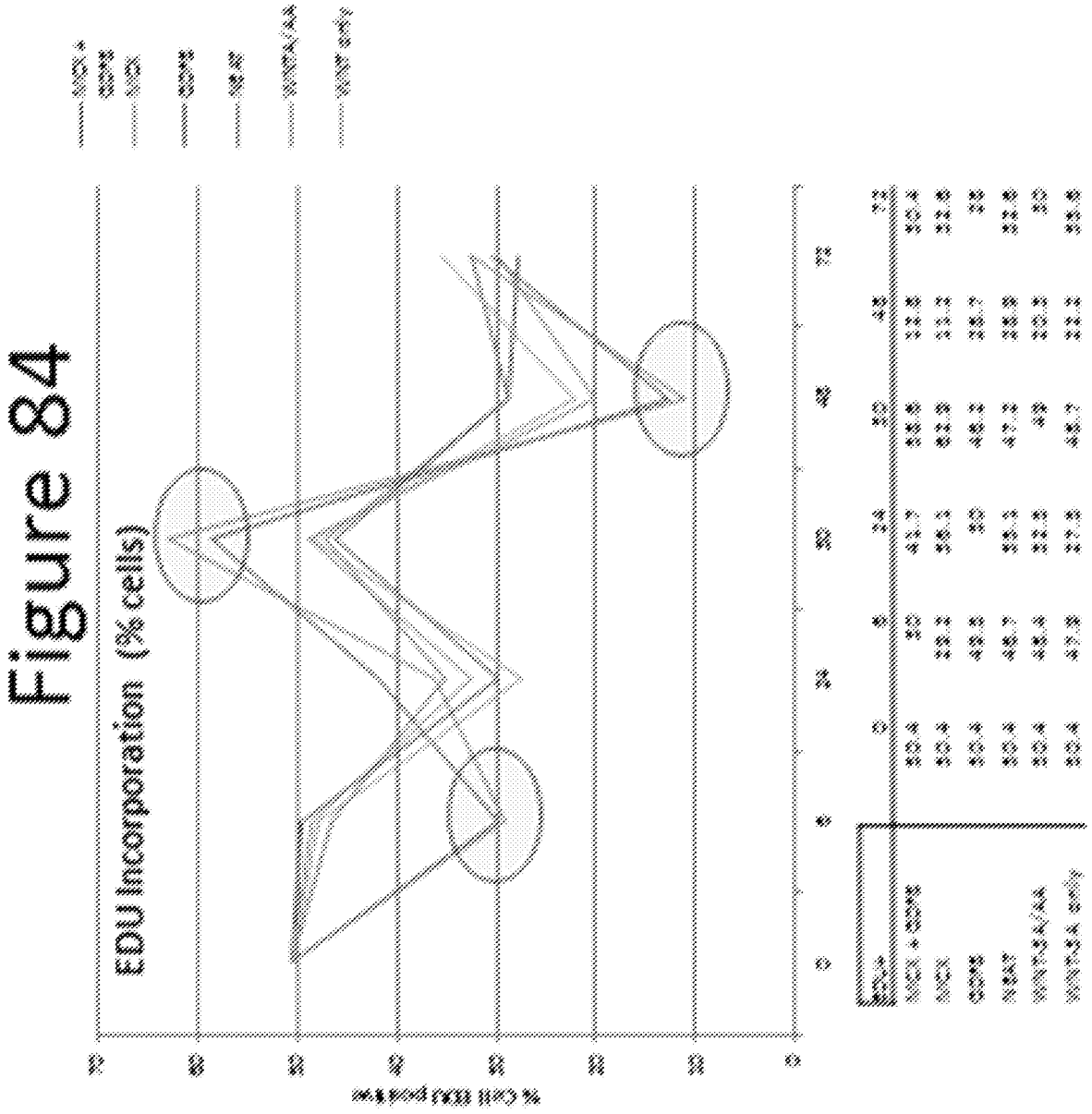

EDU Incorporation (% cells)
% cell incorporation
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20
40
60
80
100
0
6
12
24
30
48
72
EdU
EdU + CDN
CDN
DMSO
MMTPA/AA
MMTPA only

Figure 85

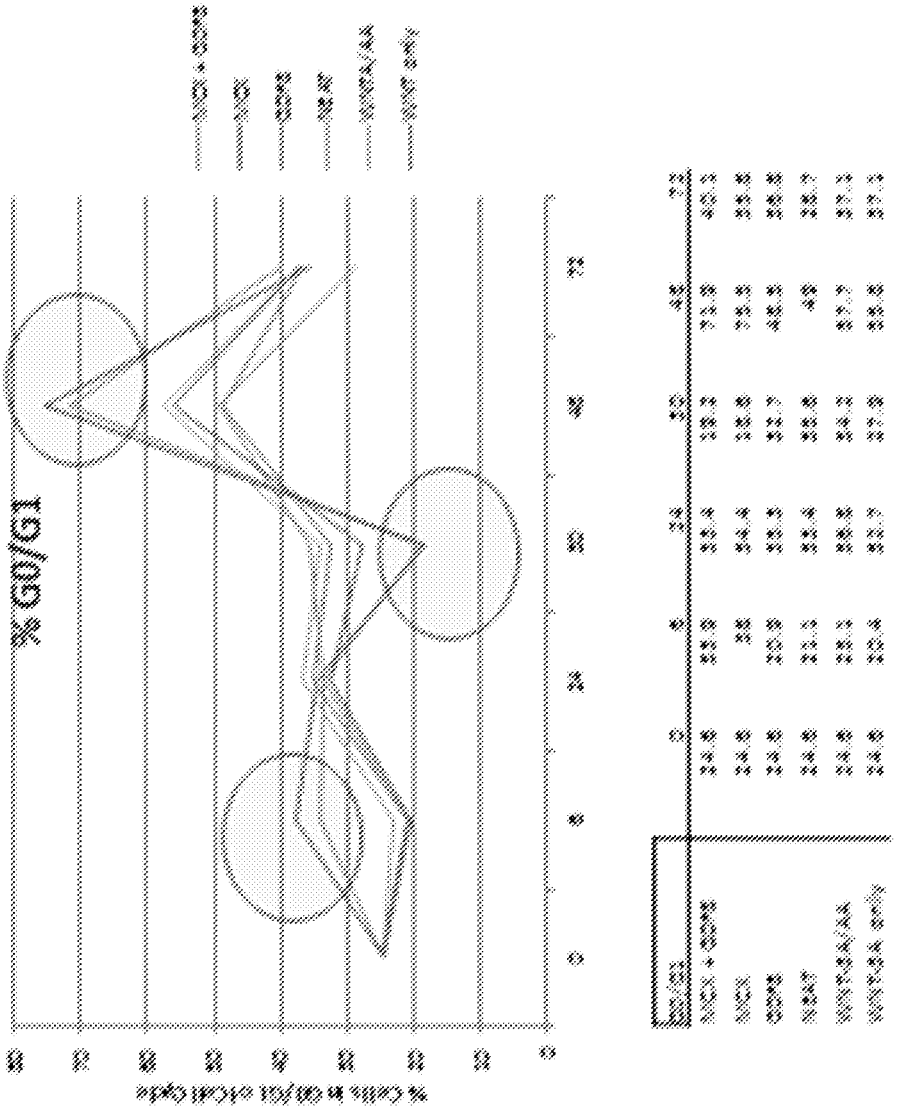


Figure 86

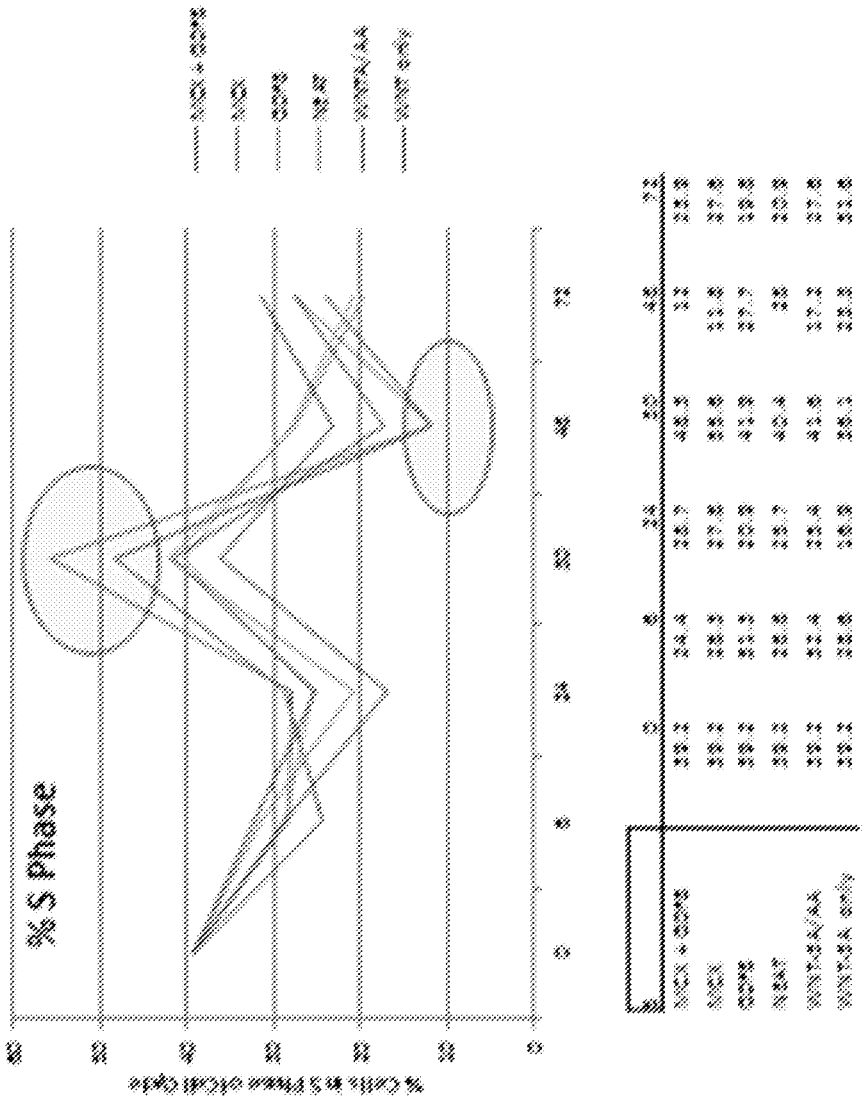


Figure 87

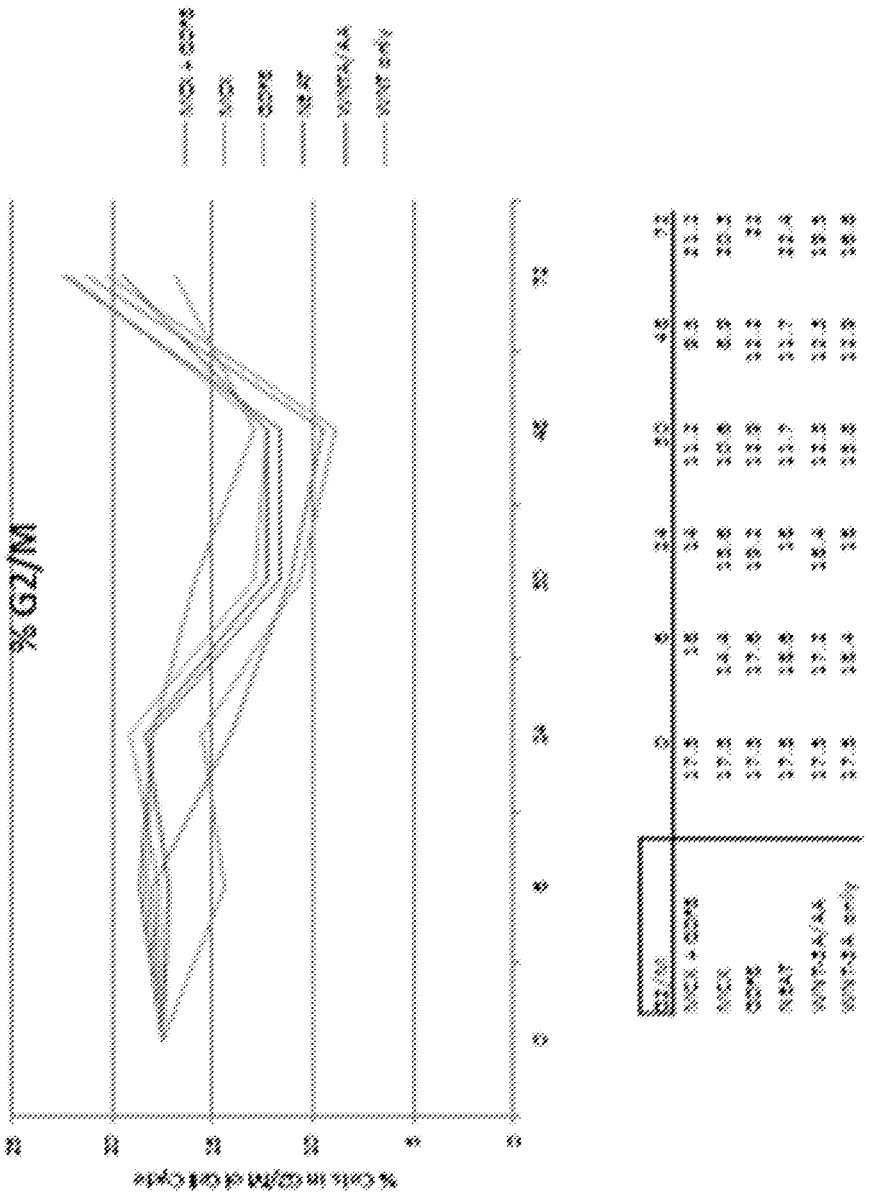


Figure 88 a

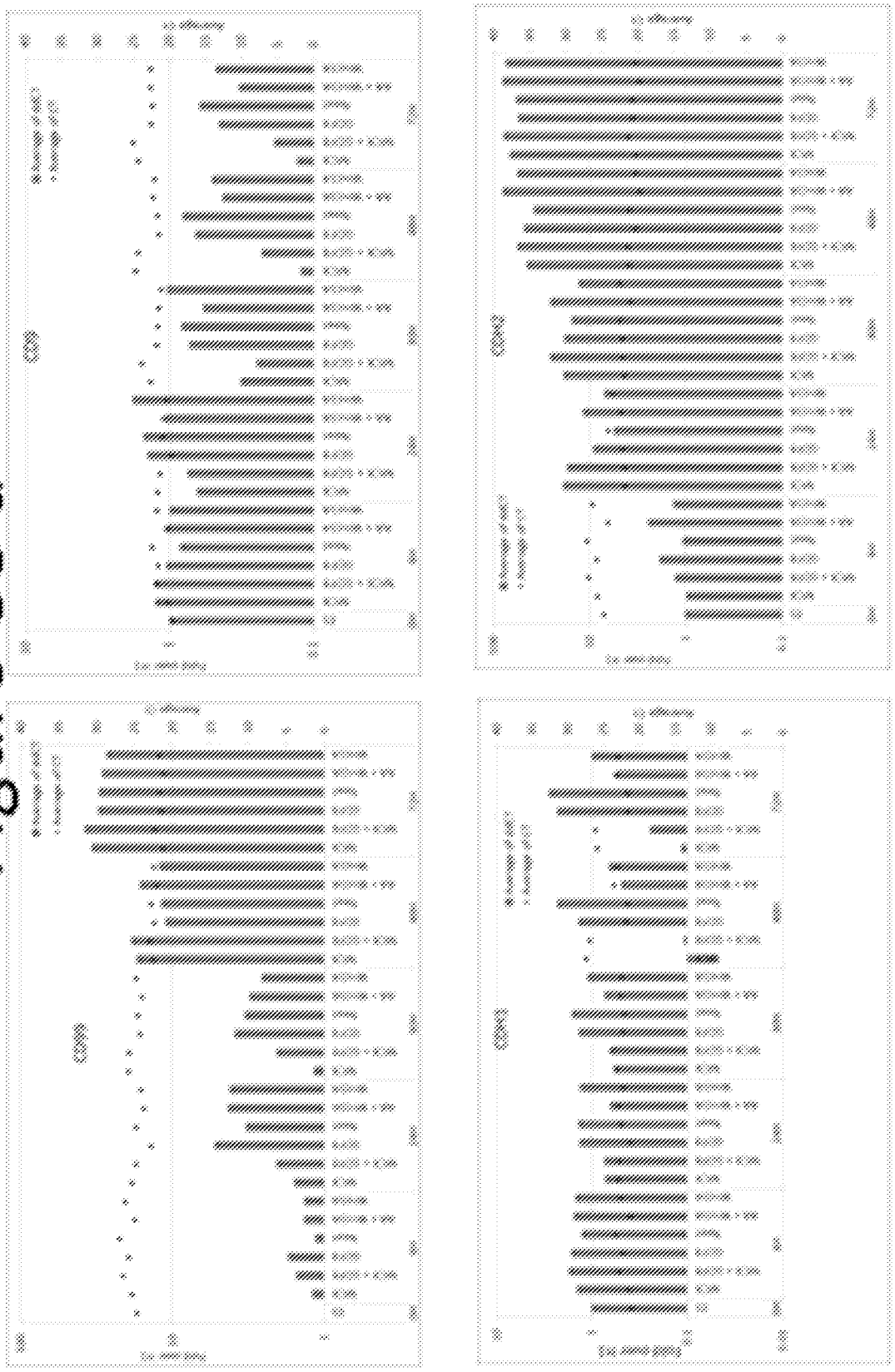


Figure 88 b

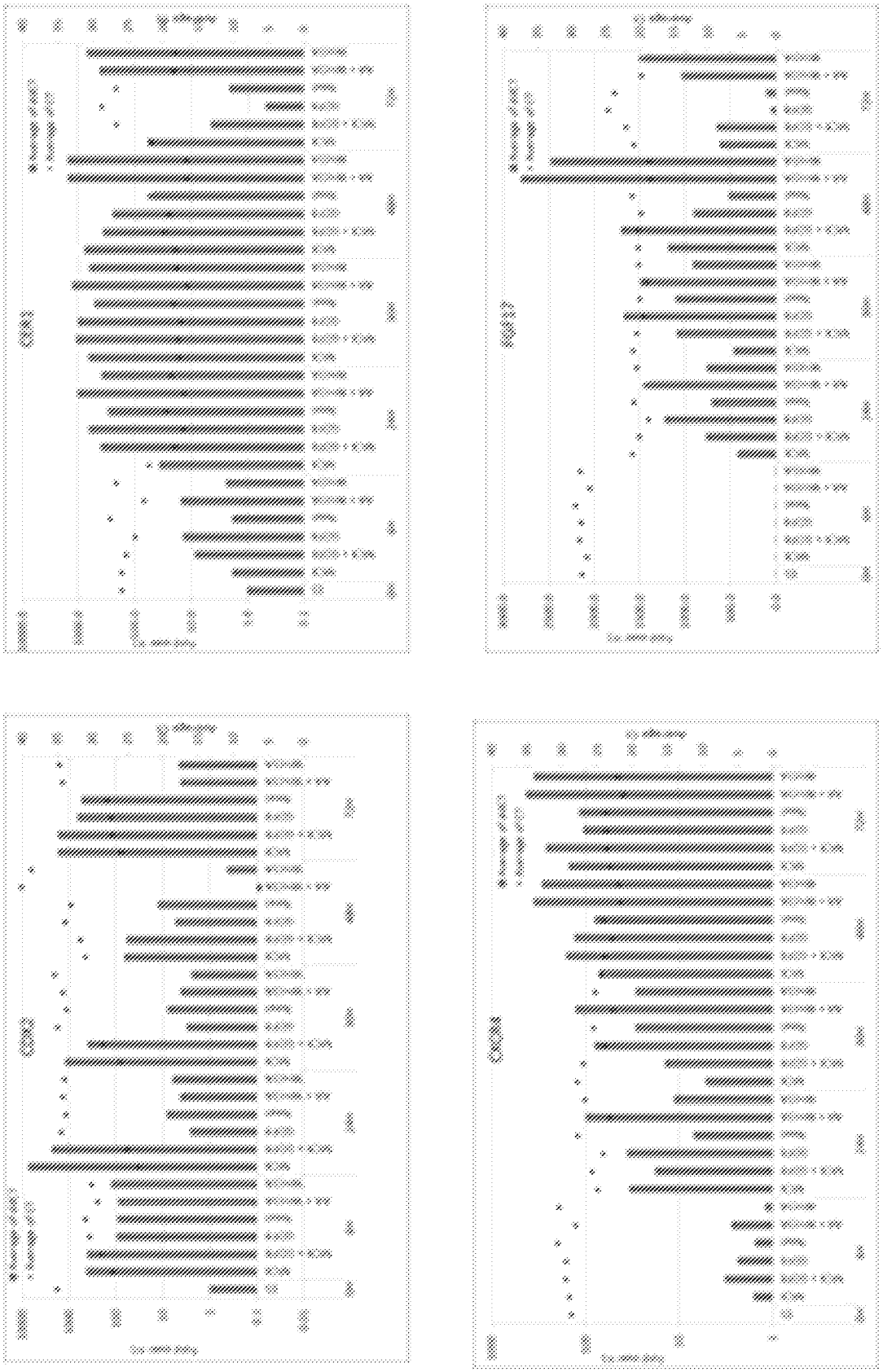


Figure 88 c

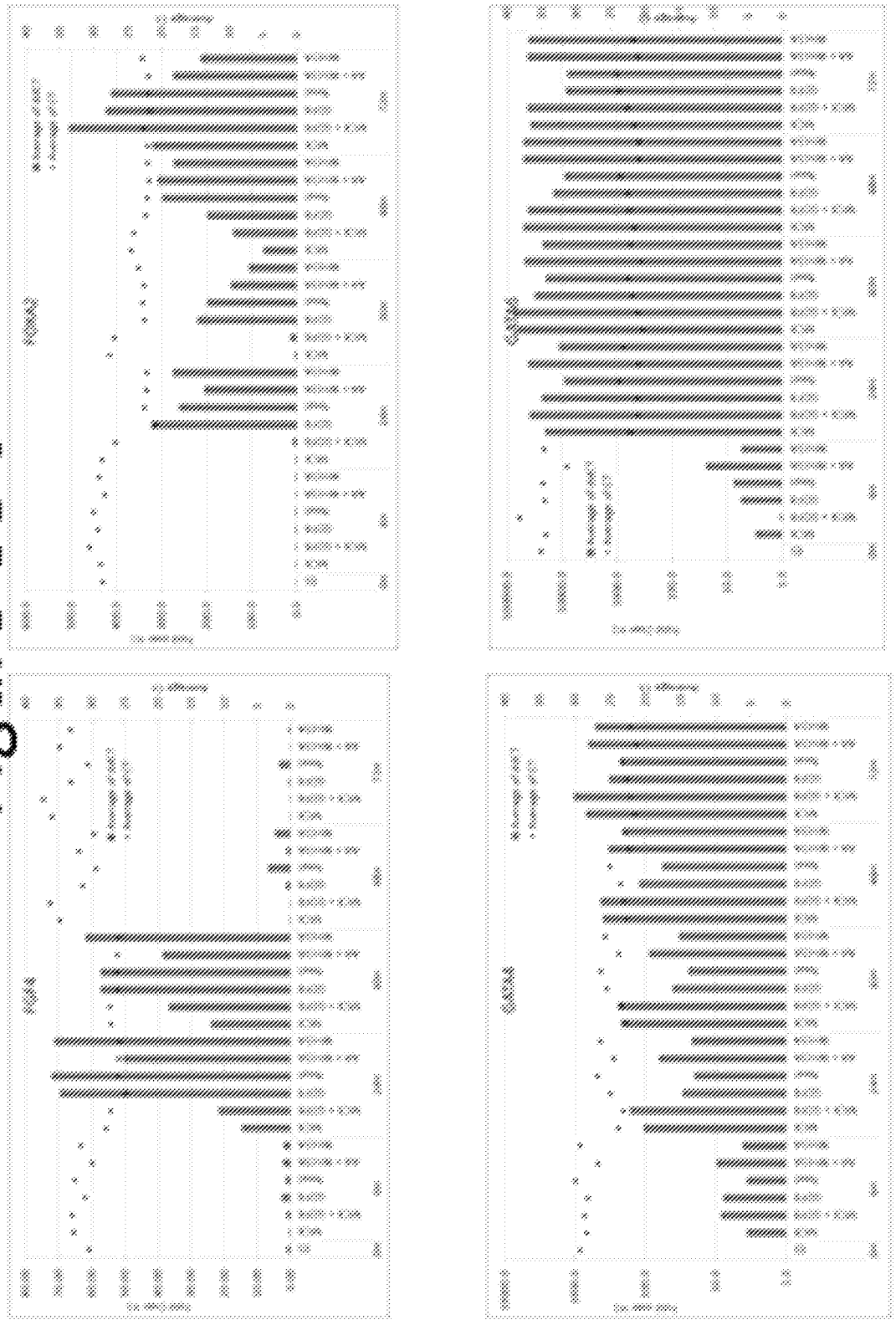


Figure 88 d

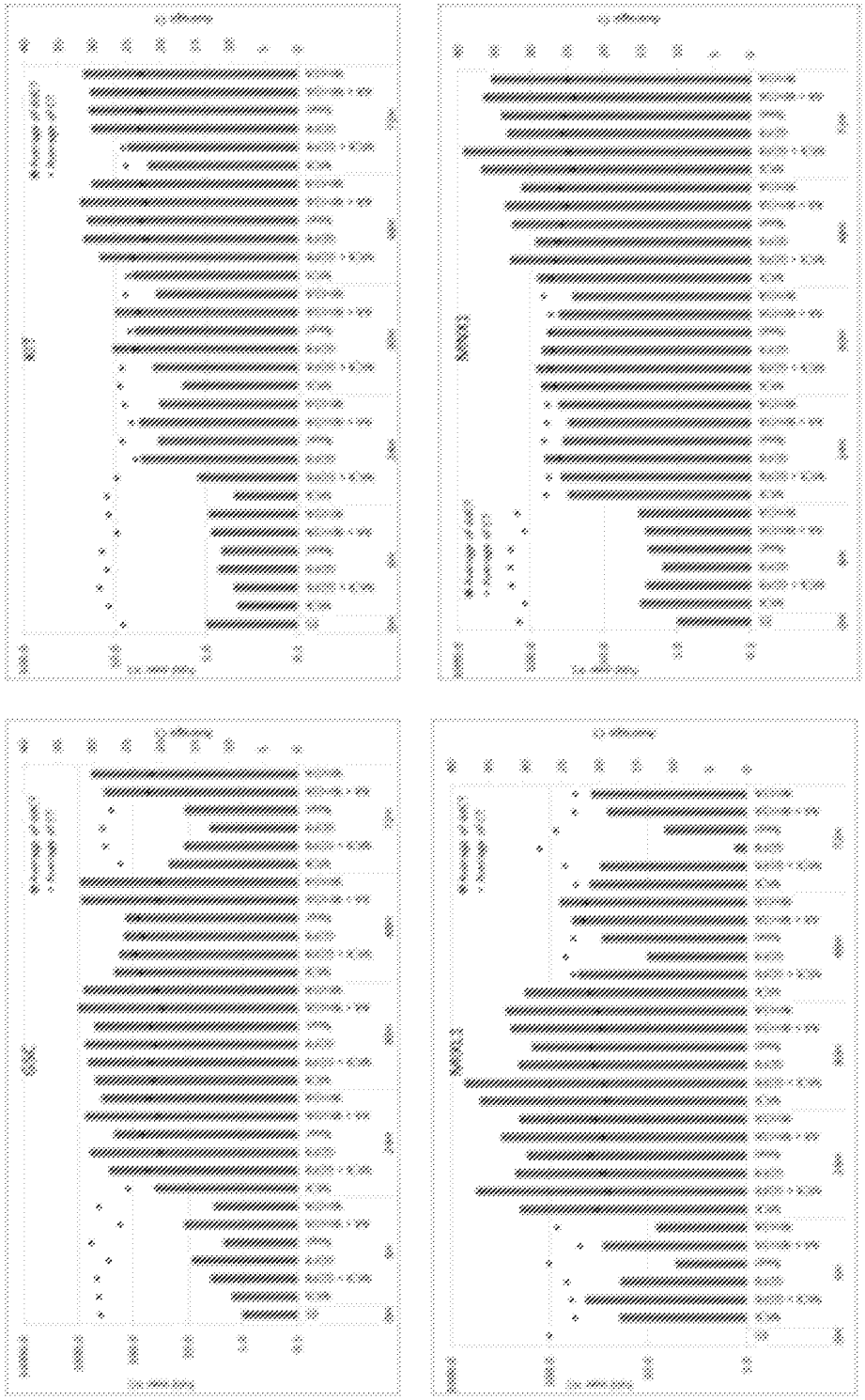


Figure 88e

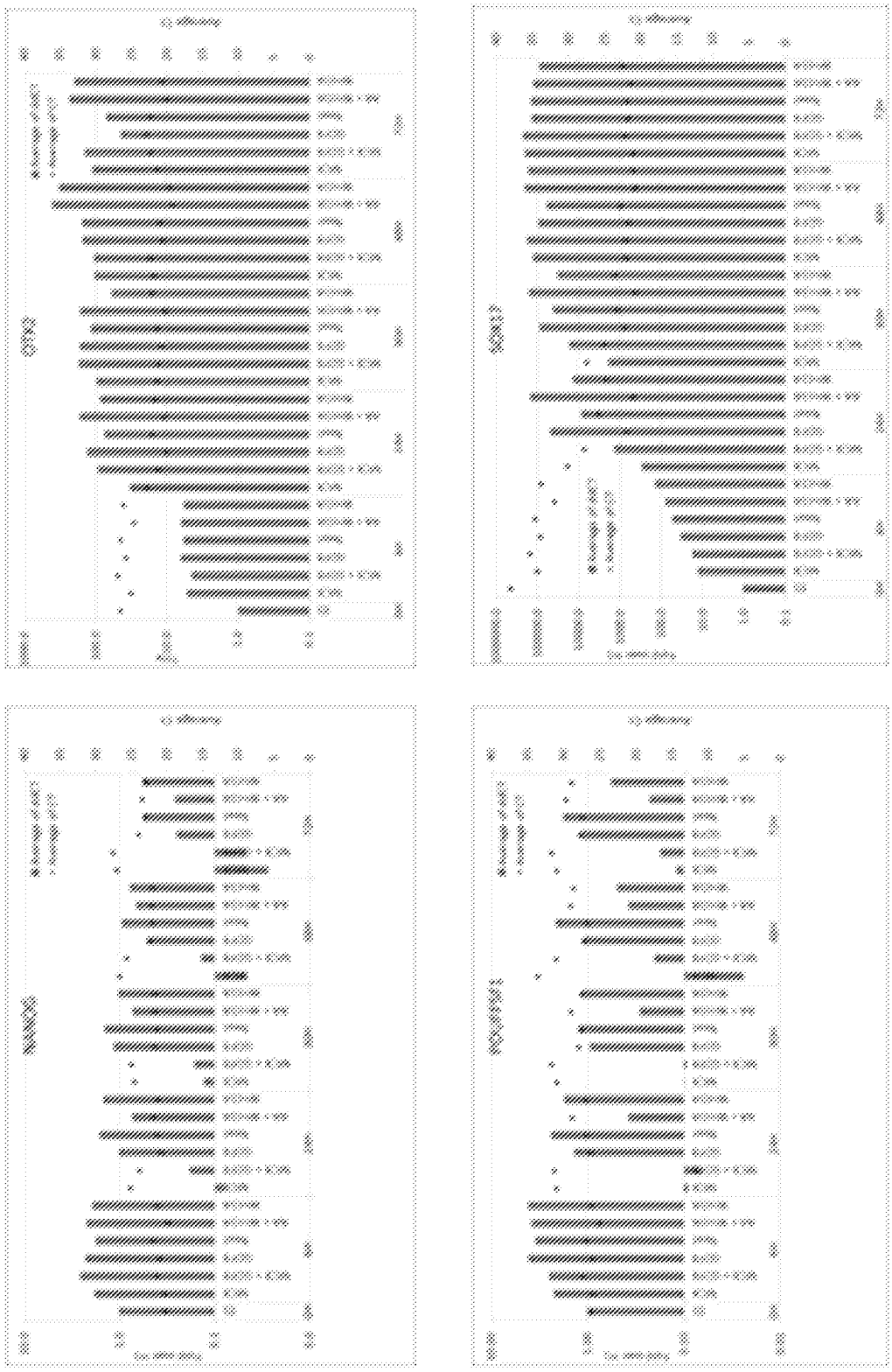


Figure 88f

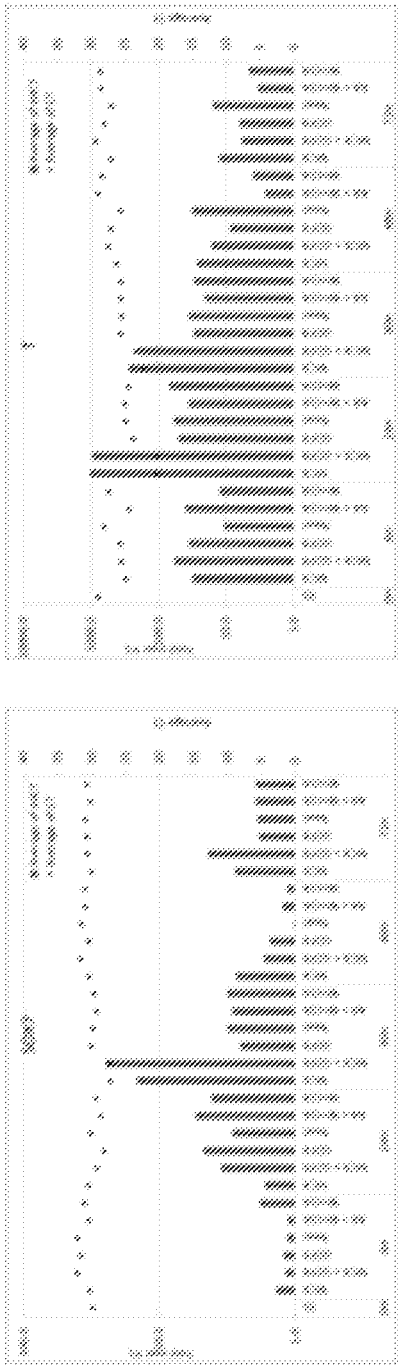


Figure 89

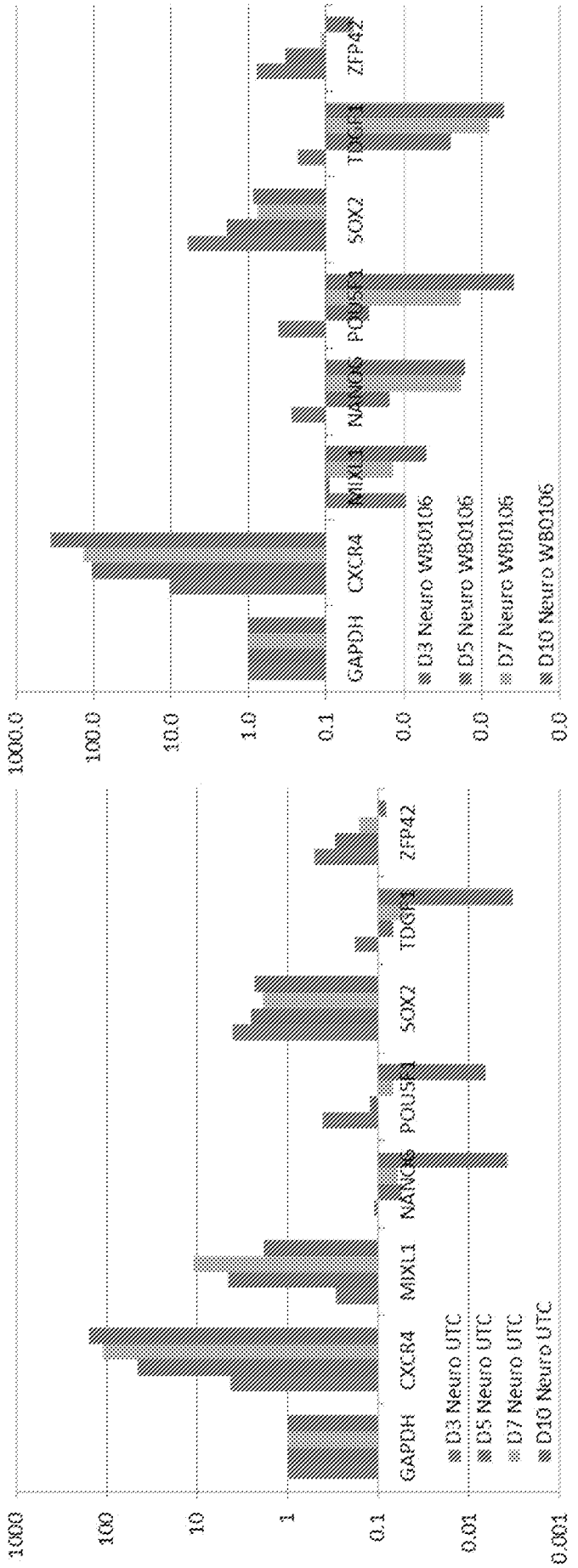

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1.0
0.1
0.0
0.0
0.0
GAPDH
CXCR4
MIXL1
NANOG
POU5F1
SOX2
TDGF1
ZFP42
D3 Neuro WB0106
D5 Neuro WB0106
D7 Neuro WB0106
D10 Neuro WB0106
1000
100
10
1
0.1
0.01
0.001
GAPDH
CXCR4
MIXL1
NANOG
POU5F1
SOX2
TDGF1
ZFP42
D3 Neuro UTC
D5 Neuro UTC
D7 Neuro UTC
D10 Neuro UTC

Figure 90

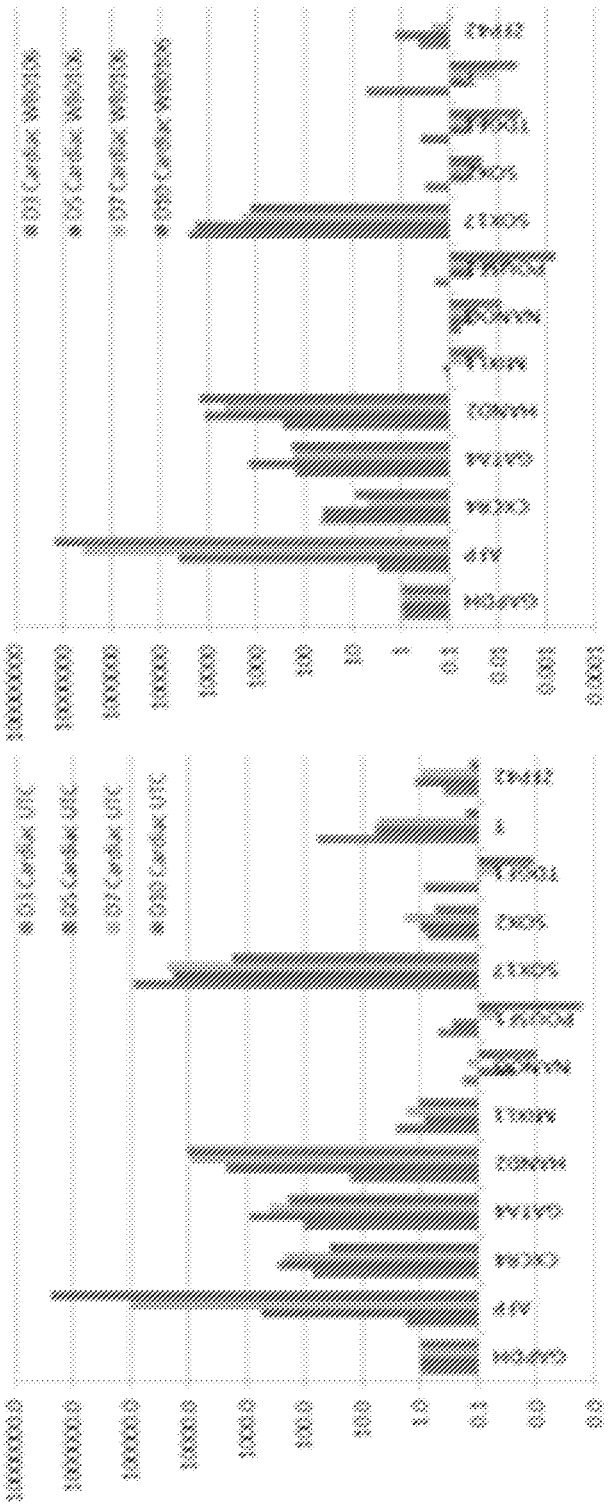

Cardiac UDC
Cardiac UDC
Cardiac UDC
Cardiac UDC
Cardiac Viability
Cardiac Viability
Cardiac Viability
Cardiac Viability

Figure 91

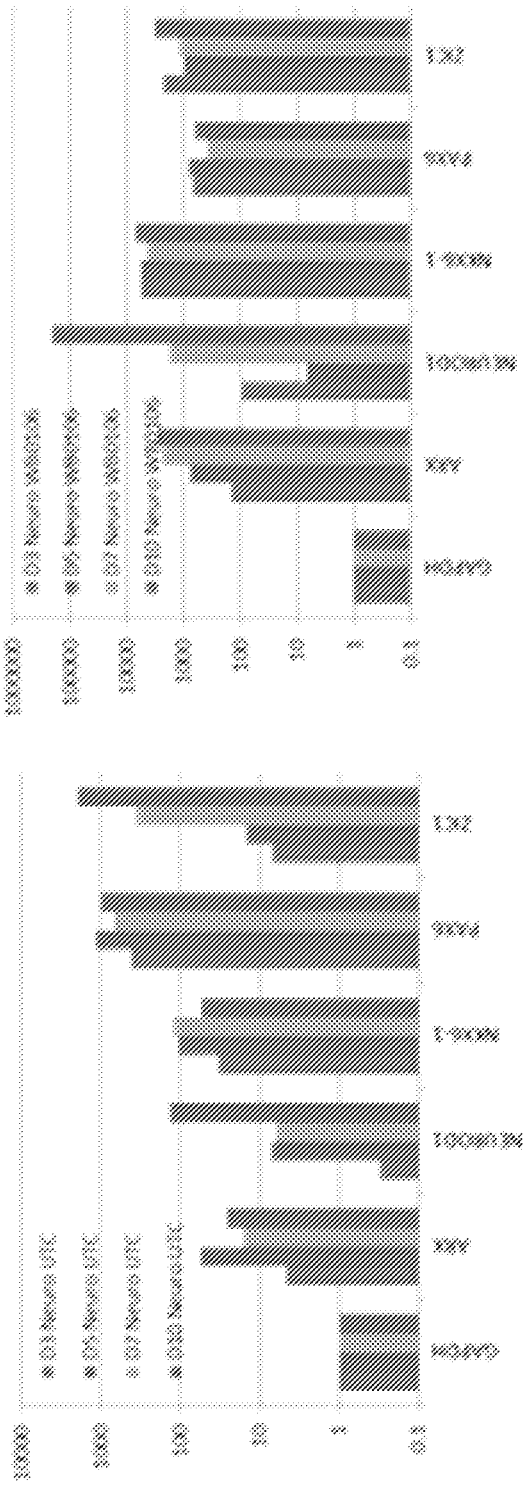


Figure 92

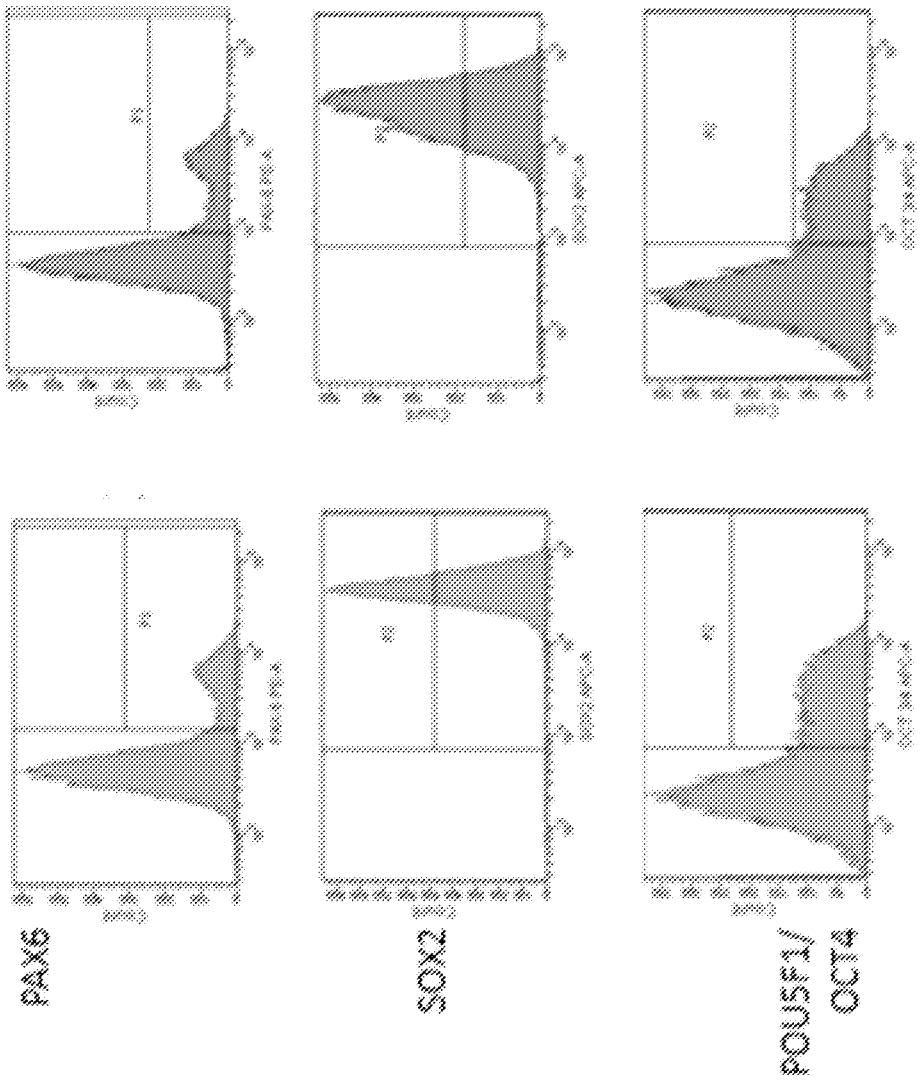

Day3, UTC iPS
Neural Differentiation
Day3, WB0105 hES
Neural Differentiation
PAX6
SOX2
POU5F1/
OCT4

Figure 93

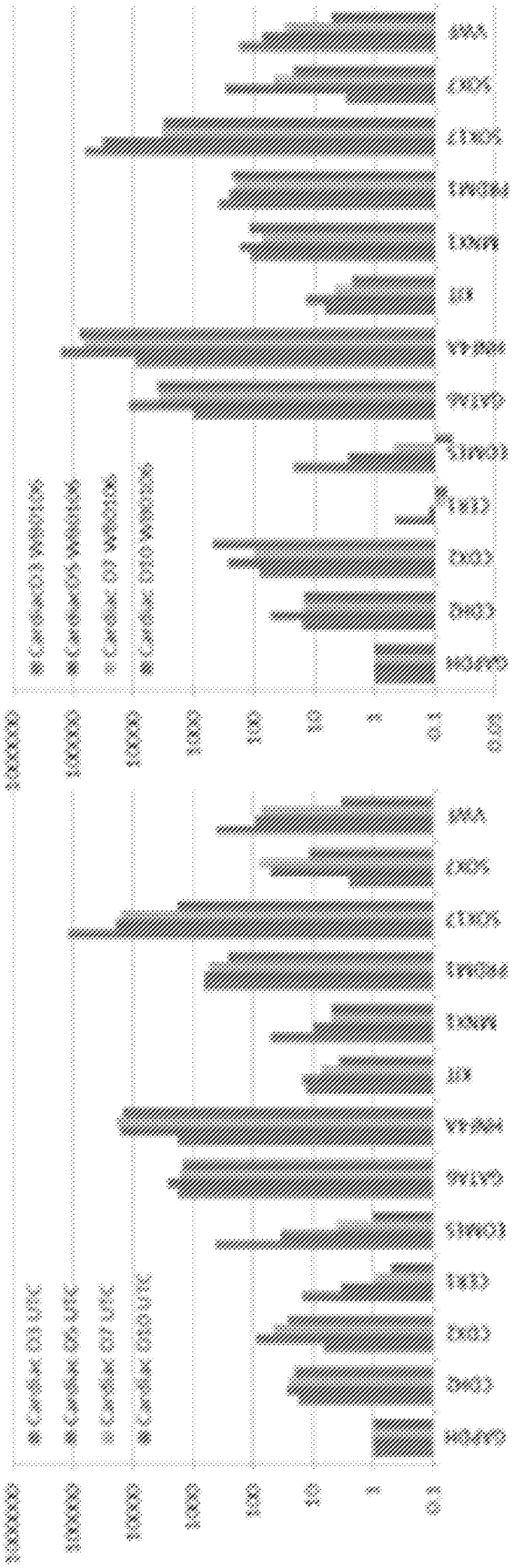

Cardiac EC50 UIC
Cardiac EF UIC
Cardiac EC50 UIC
Cardiac EC50 Widefield
Cardiac EF Widefield
Cardiac EC50 Widefield
100000
10000
1000
100
10
1
0.1
0.01
RGAPD
DMD
DUX4
TEAD
DMD1
TWIST
MYOD
MYOG
ID
TCF4
TWIST1
ZEB1
ZEB2
SNAI2

Figure 94

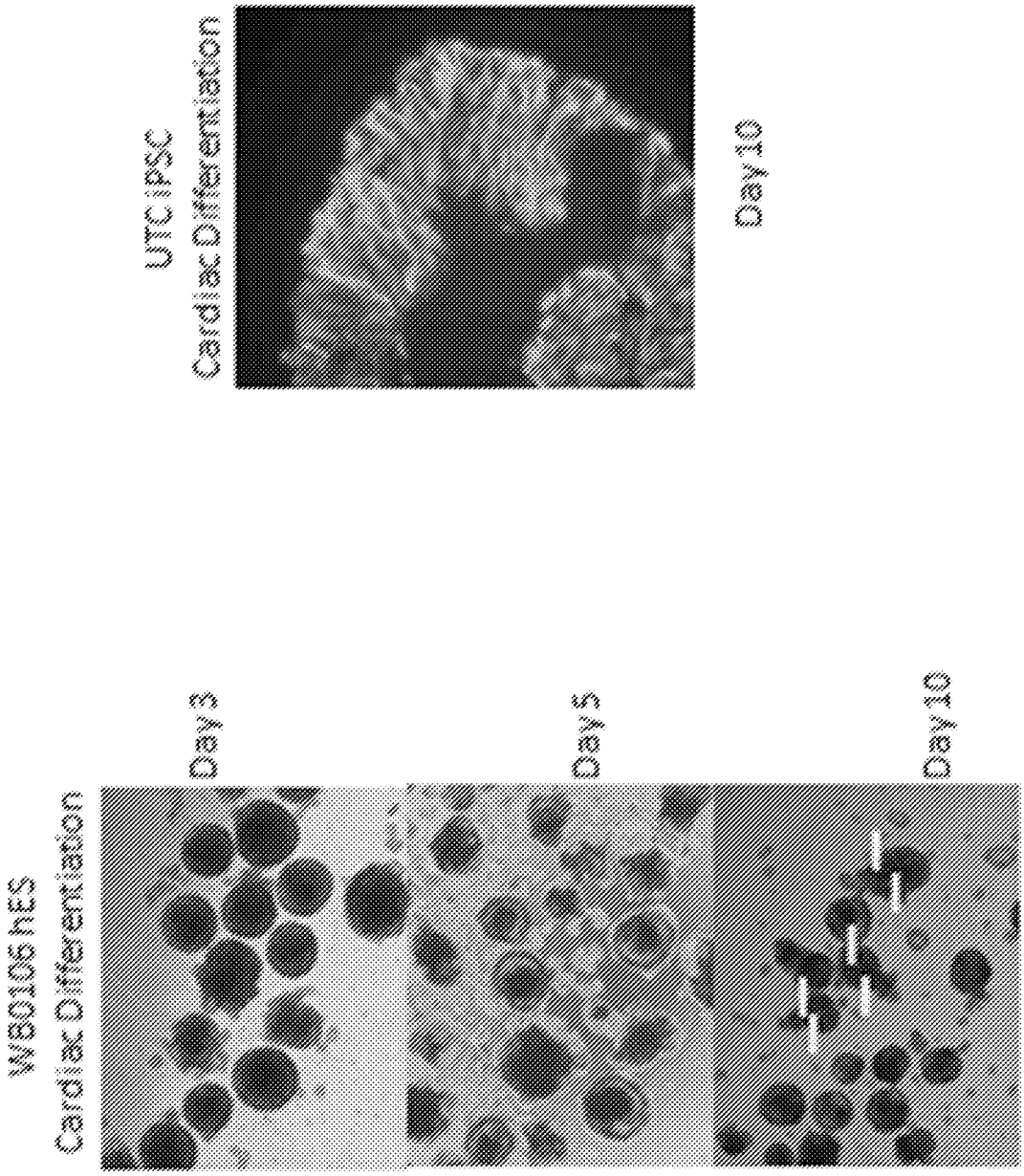
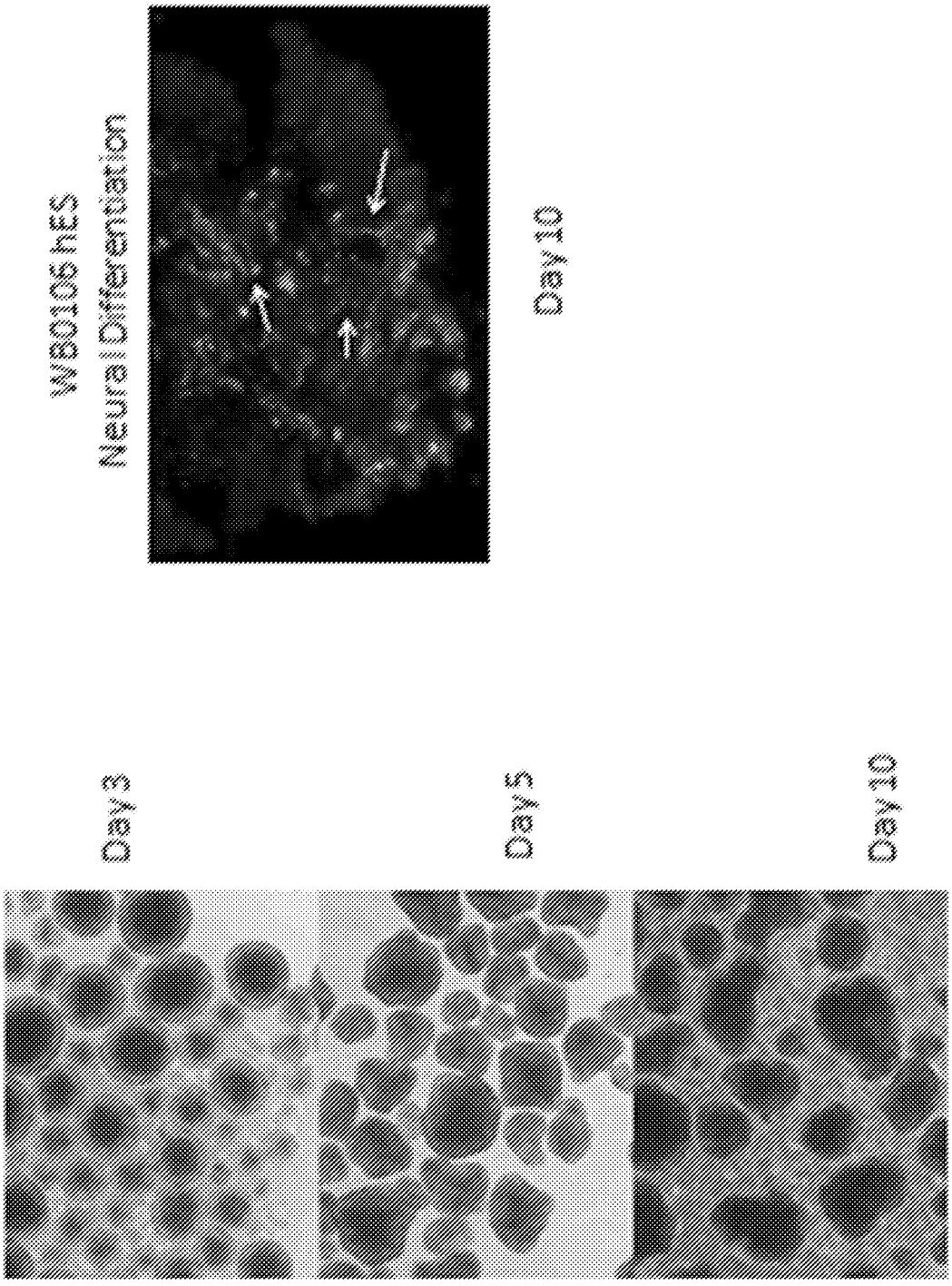

WB0105 hES
Cardiac Differentiation
Day 3
Day 5
Day 10
UTC iPSC
Cardiac Differentiation
Day 10

Figure 95


UTC iPS
Neural Differentiation
Day 3
Day 5
Day 10
WA0105 hES
Neural Differentiation
Day 10