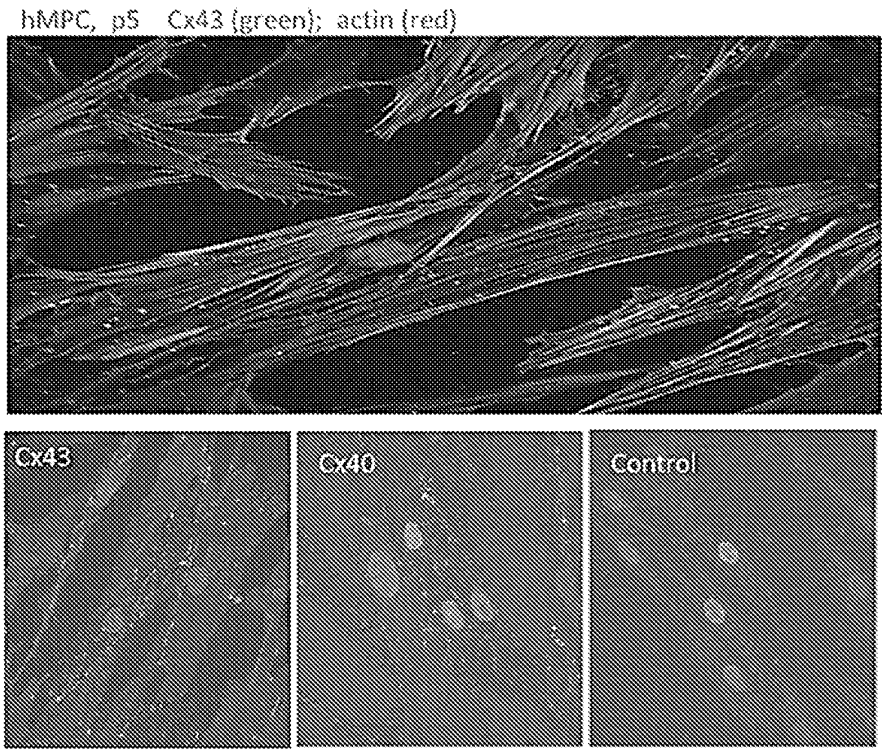


FIGURE 1A

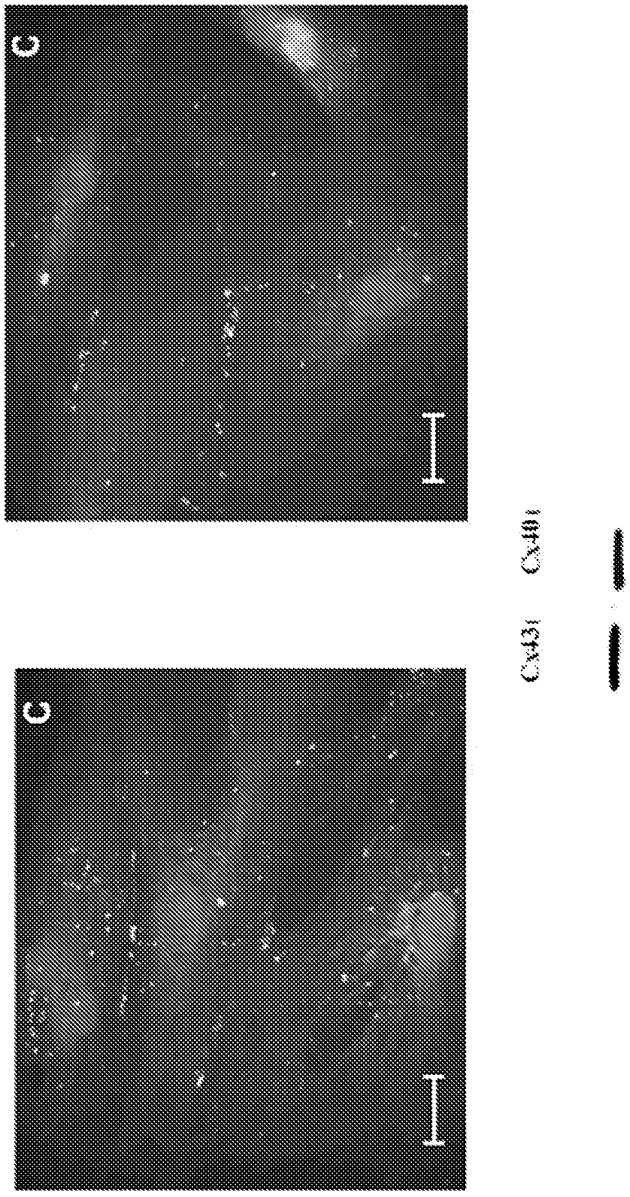


FIGURE 1B

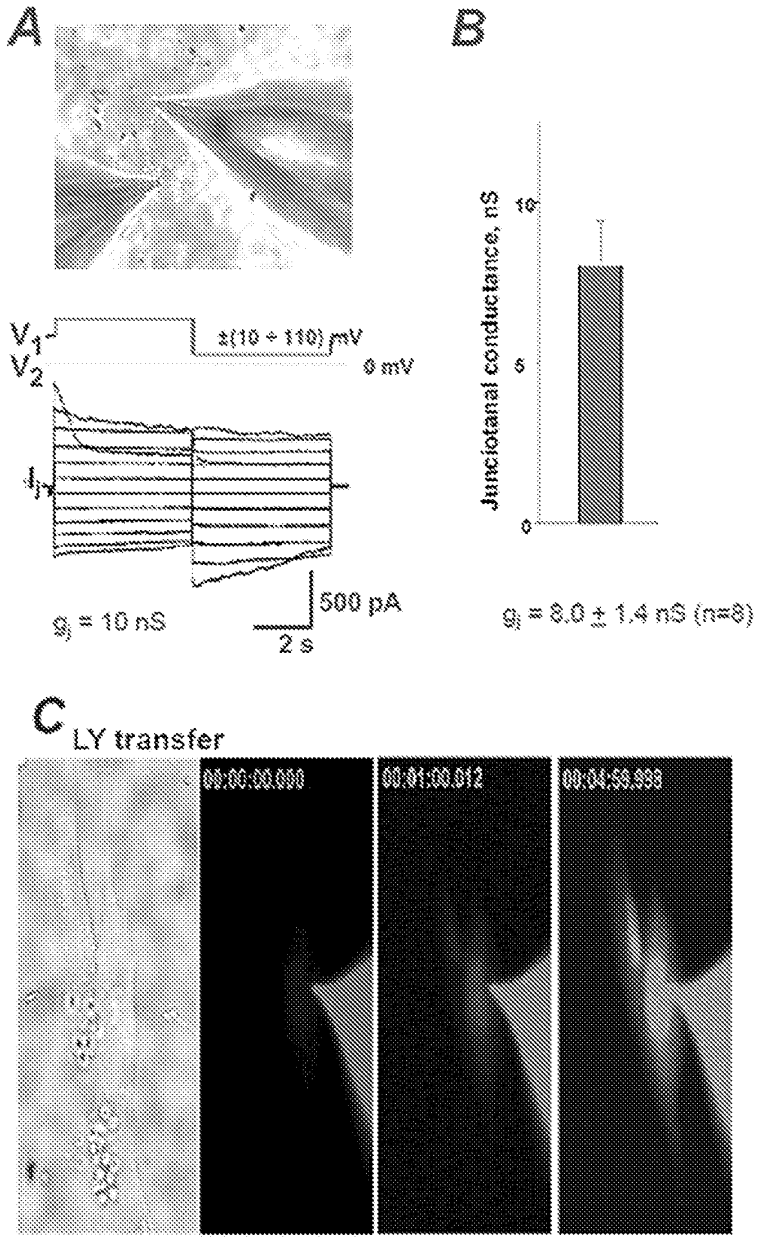

A
B
V1
V2
±(10 ÷ 110) mV
0 mV
Junctional conductance, nS
10
5
0
500 pA
2 s
gj = 10 nS
gj = 8.0 ± 1.4 nS (n=8)
C
LY transfer
00:00:00.000
00:01:00.012
00:04:59.933

FIGURE 2

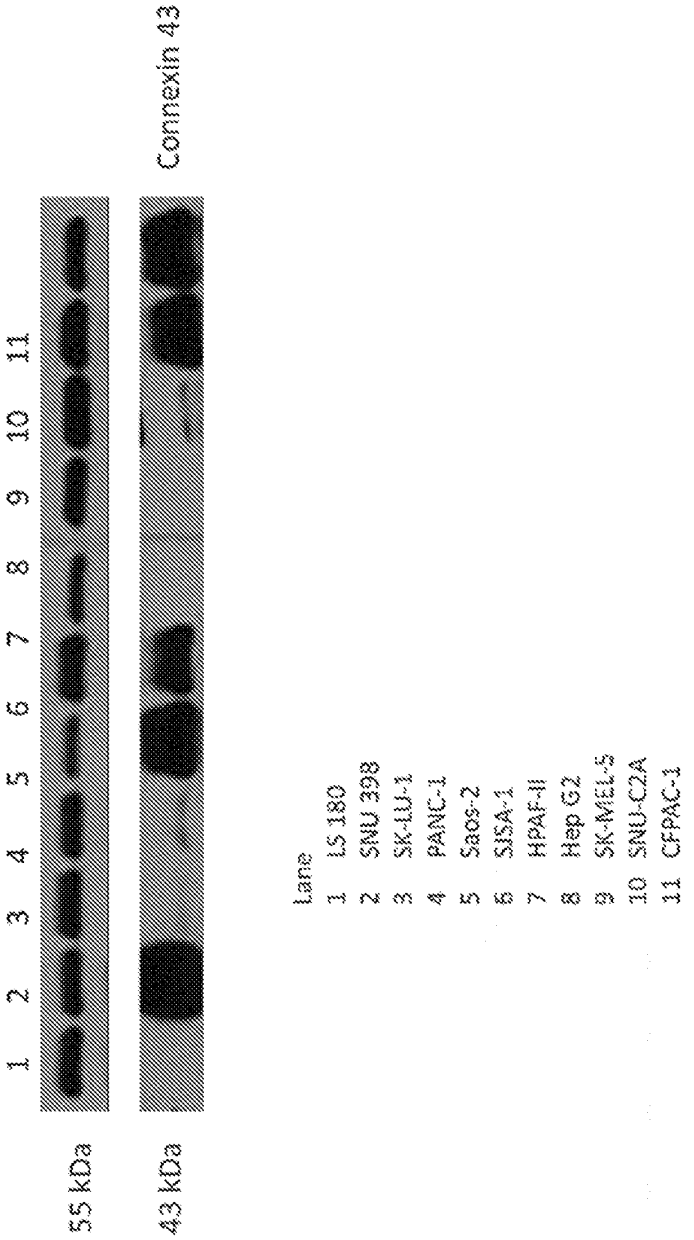

Connexin 43
1 2 3 4 5 6 7 8 9 10 11
55 kDa
43 kDa
Lane
1 LS 180
2 SNU 398
3 SK-LU-1
4 PANC-1
5 Saos-2
6 SISA-1
7 HPAF-II
8 Hep G2
9 SK-MEL-5
10 SNU-C2A
11 CFPAC-1

FIGURE 3-1

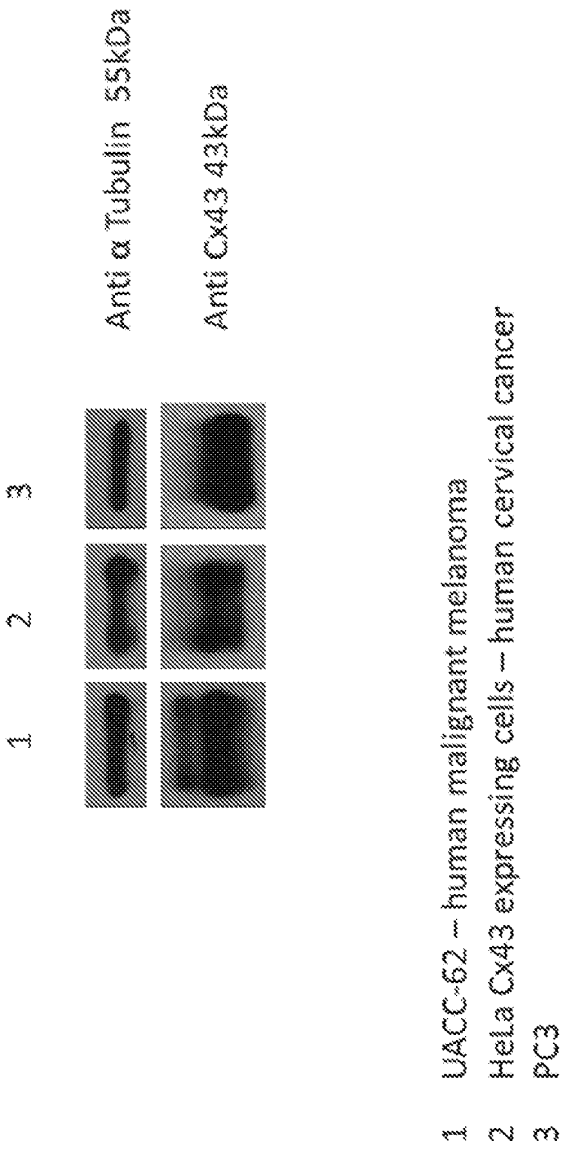

Anti α Tubulin 55kDa
Anti Cx43 43kDa
1 2 3
1 UACC-62 – human malignant melanoma
2 HeLa Cx43 expressing cells – human cervical cancer
3 PC3

FIGURE 3-2

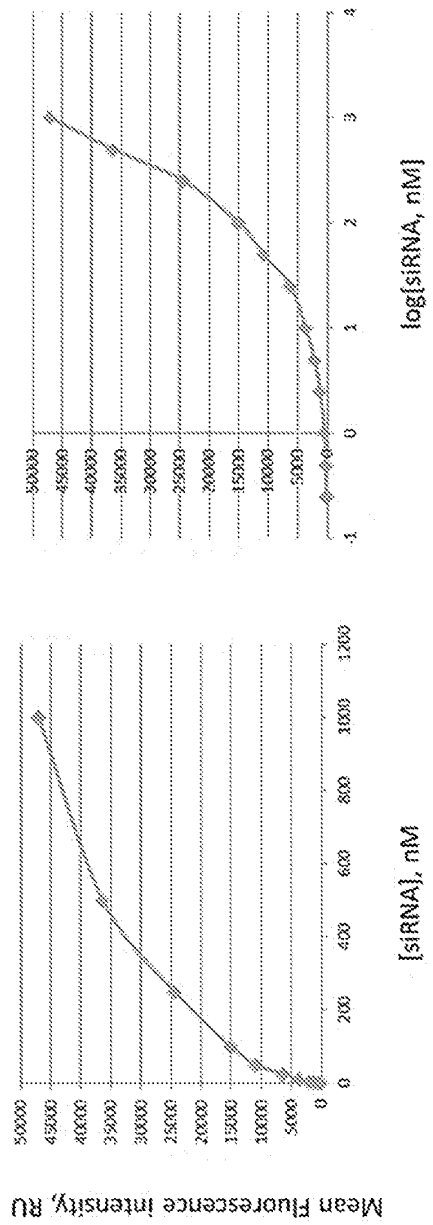

Mean Fluorescence intensity, RU
50000
45000
40000
35000
30000
25000
20000
15000
10000
5000
0
200
400
600
800
1000
1200
[siRNA], nM
50000
45000
40000
35000
30000
25000
20000
15000
10000
5000
-1
0
1
2
3
4
log[siRNA, nM]

FIGURE 4

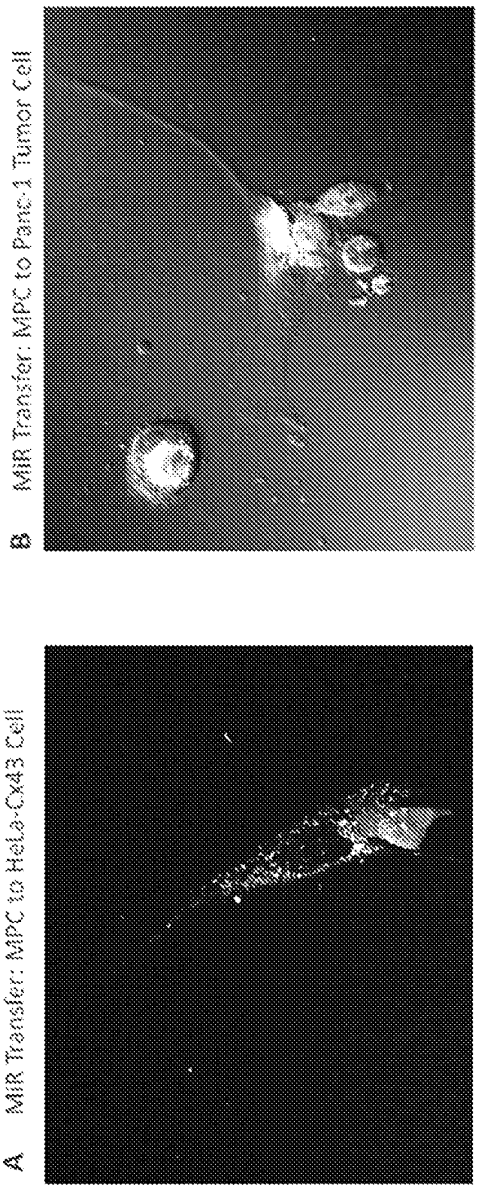

B MiR Transfer: MPC to Panc-1 Tumor Cell
A MiR Transfer: MPC to HeLa-Cx43 Cell

FIGURE 5(i)

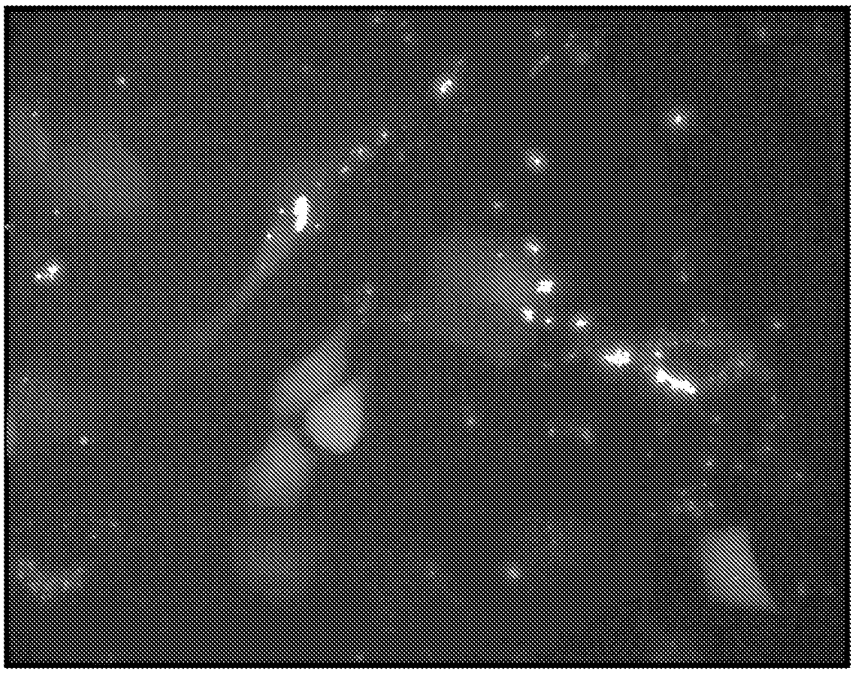


FIGURE 5(ii)

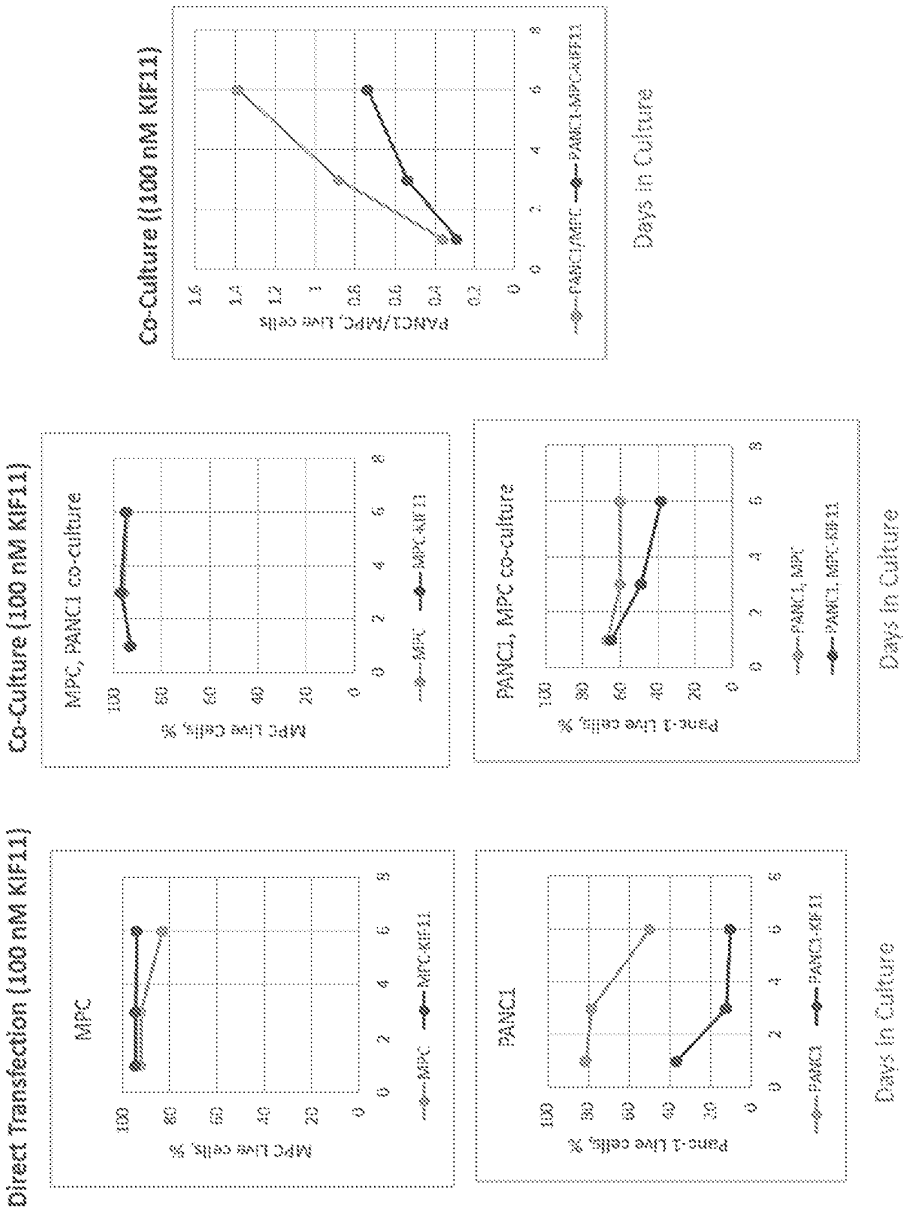

Direct Transfection (100 nM KIF11)
MPC
MPC Live cells, %
MPC
MPC-KIF11
PANC1
Panc-1 Live cells, %
PANC1
PANC1-KIF11
Days in Culture
Co-Culture (100 nM KIF11)
MPC, PANC1 co-culture
MPC Live Cells, %
MPC
MPC-KIF11
PANC1, MPC co-culture
Panc-1 Live cells, %
PANC1, MPC
PANC1, MPC-KIF11
Days in Culture
Co-Culture (100 nM KIF11)
PANC1/MPC, live cells
PANC1/MPC
PANC1/MPC-KIF11
Days in Culture

FIGURE 6(A)

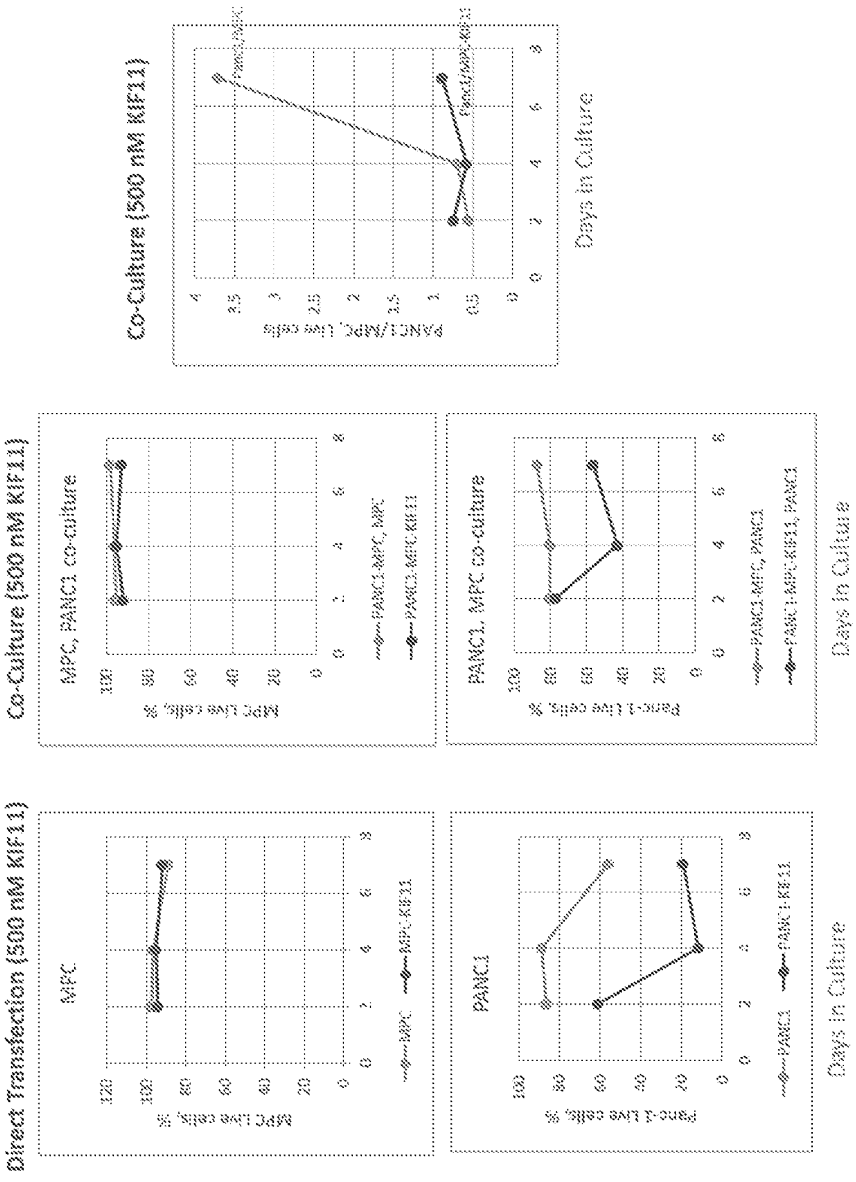

Co-Culture (500 nM KIF11)
PANC1/MPC, Live cells
Days in Culture
Co-Culture (500 nM KIF11)
MPC, PANC1 co-culture
MPC Live cells, %
PANC1, MPC co-culture
Panc-1 Live cells, %
Days in Culture
Direct Transfection (500 nM KIF11)
MPC
PANC1
Days in Culture

FIGURE 6(B)

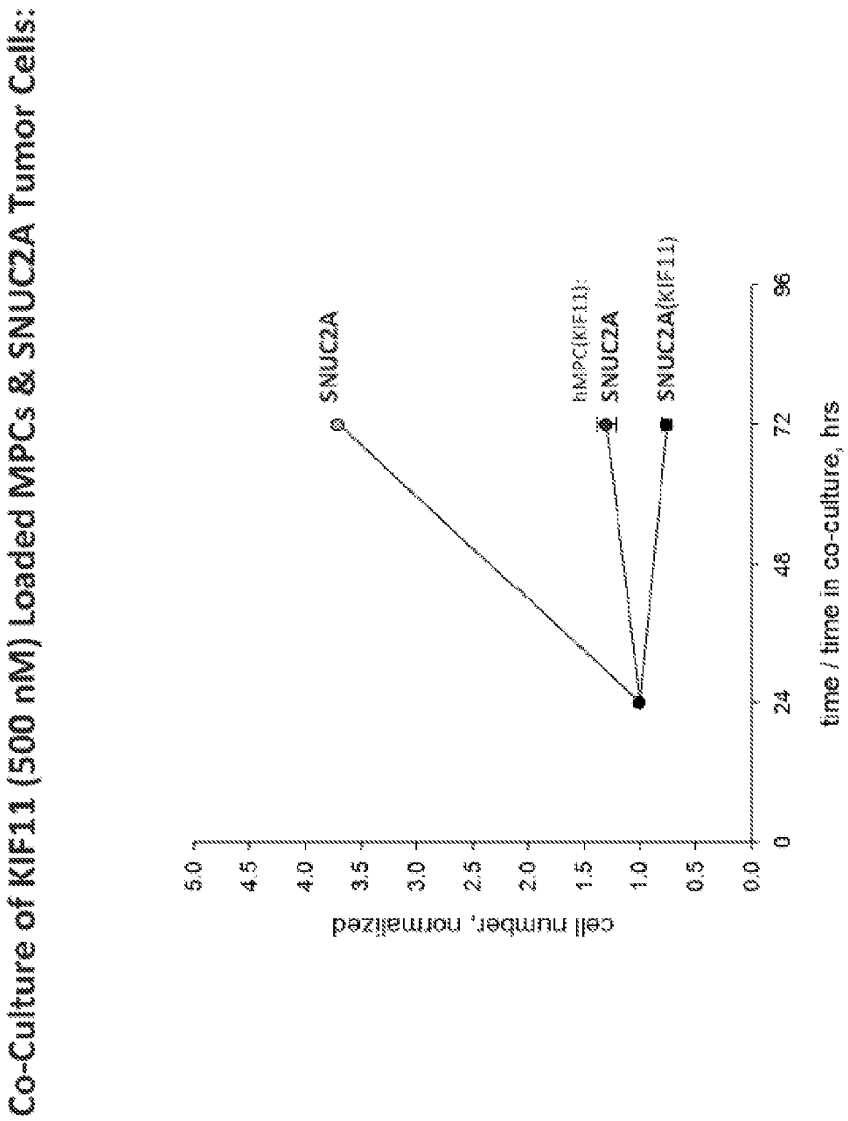

Co-Culture of KIF11 (500 nM) Loaded MPCs & SNUC2A Tumor Cells:
cell number, normalized
5.0
4.5
4.0
3.5
3.0
2.5
2.0
1.5
1.0
0.5
0.0
0
24
48
72
96
time / time in co-culture, hrs
SNUC2A
hMPC(KIF11)
SNUC2A
SNUC2A(KIF11)

FIGURE 7

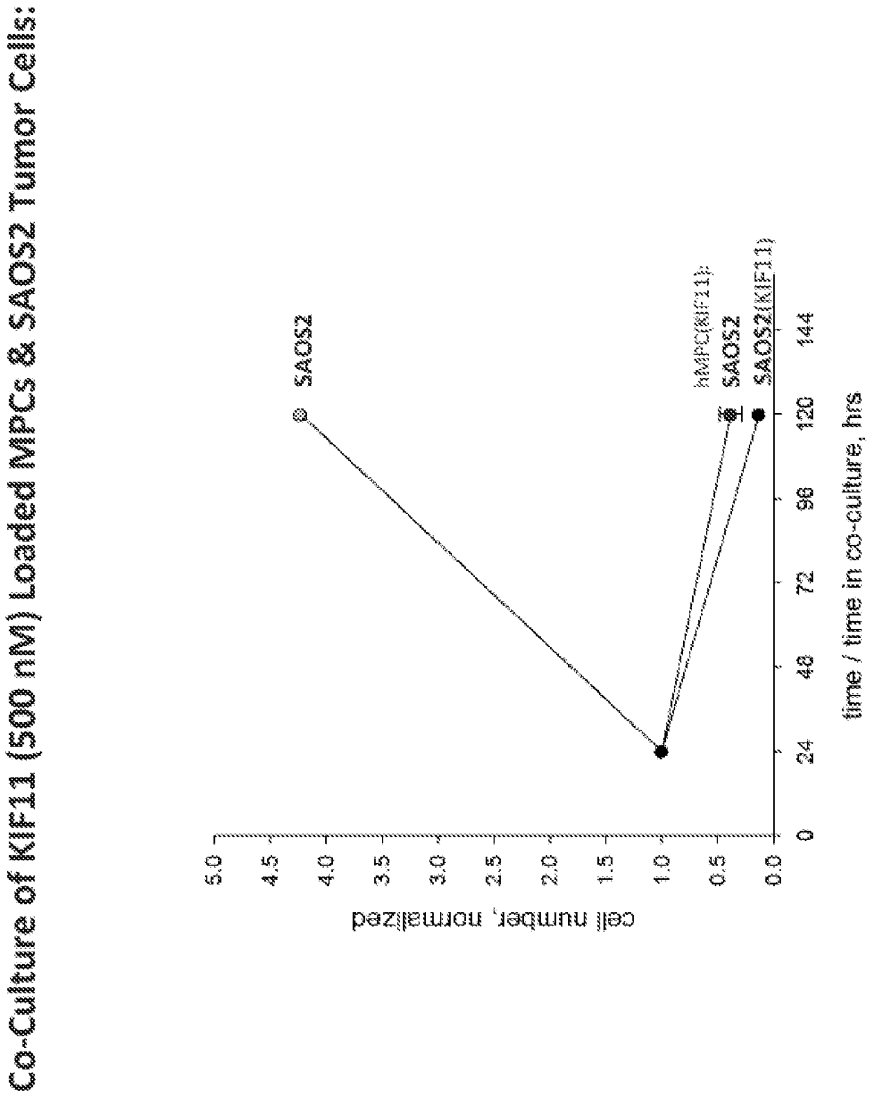

Co-Culture of KIF11 (500 nM) Loaded MPCs & SAOS2 Tumor Cells:
cell number, normalized
5.0
4.5
4.0
3.5
3.0
2.5
2.0
1.5
1.0
0.5
0.0
0
24
48
72
96
120
144
time / time in co-culture, hrs
SAOS2
hMPC(KIF11);
SAOS2
SAOS2(KIF11)

FIGURE 8(A)

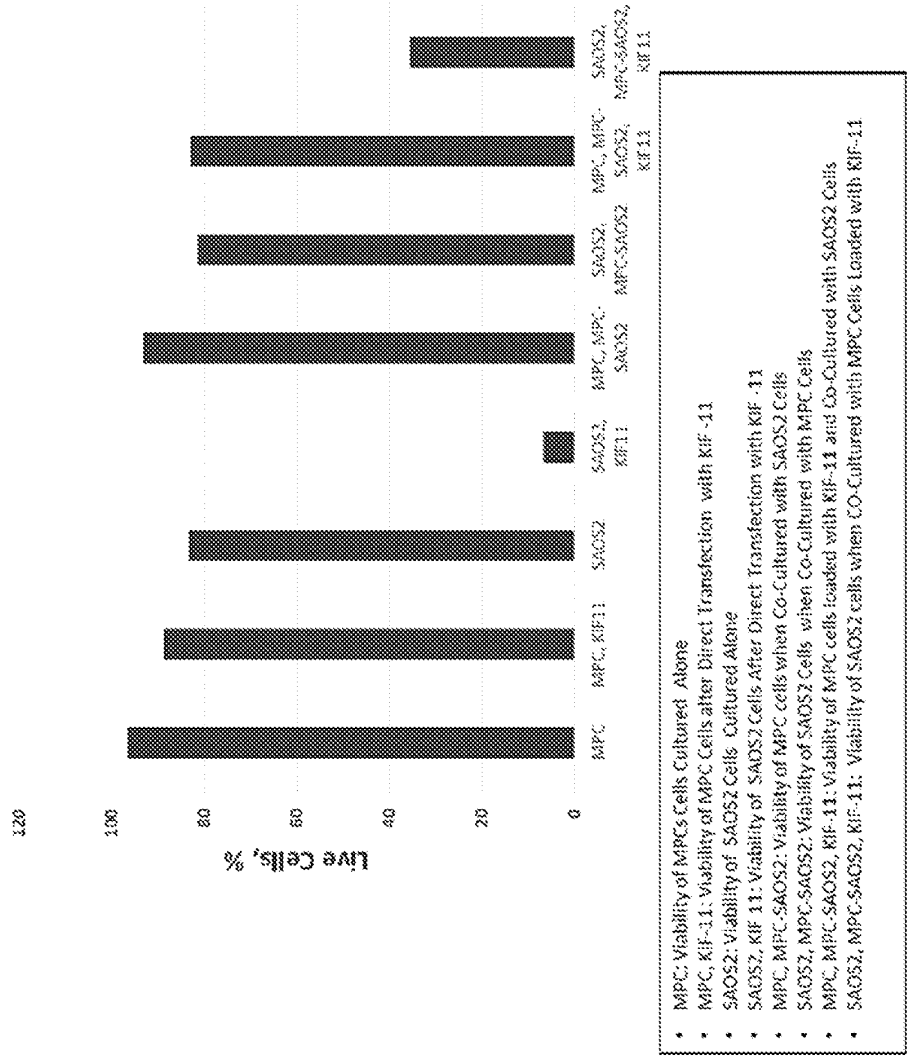

Live Cells, %
120
100
80
60
40
20
0
MPC
MPC, KIF11
SAOS2
SAOS2, KIF11
MPC, MPC-SAOS2
SAOS2, MPC-SAOS2
MPC, MPC-SAOS2; KIF11
SAOS2, MPC-SAOS2, KIF11
MPC, Viability of MPCs Cells Cultured Alone
MPC, KIF-11: Viability of MPC Cells after Direct Transfection with KIF-11
SAOS2: Viability of SAOS2 Cells Cultured Alone
SAOS2, KIF 11: Viability of SAOS2 Cells After Direct Transfection with KIF-11
MPC, MPC-SAOS2: Viability of MPC cells when Co-Cultured with SAOS2 Cells
SAOS2, MPC-SAOS2: Viability of SAOS2 Cells when Co-Cultured with MPC Cells
MPC, MPC-SAOS2, KIF-11: Viability of MPC cells loaded with KIF-11 and Co-Cultured with SAOS2 Cells
SAOS2, MPC-SAOS2, KIF-11: Viability of SAOS2 cells when CO-Cultured with MPC Cells Loaded with KIF-11

FIGURE 8(B)

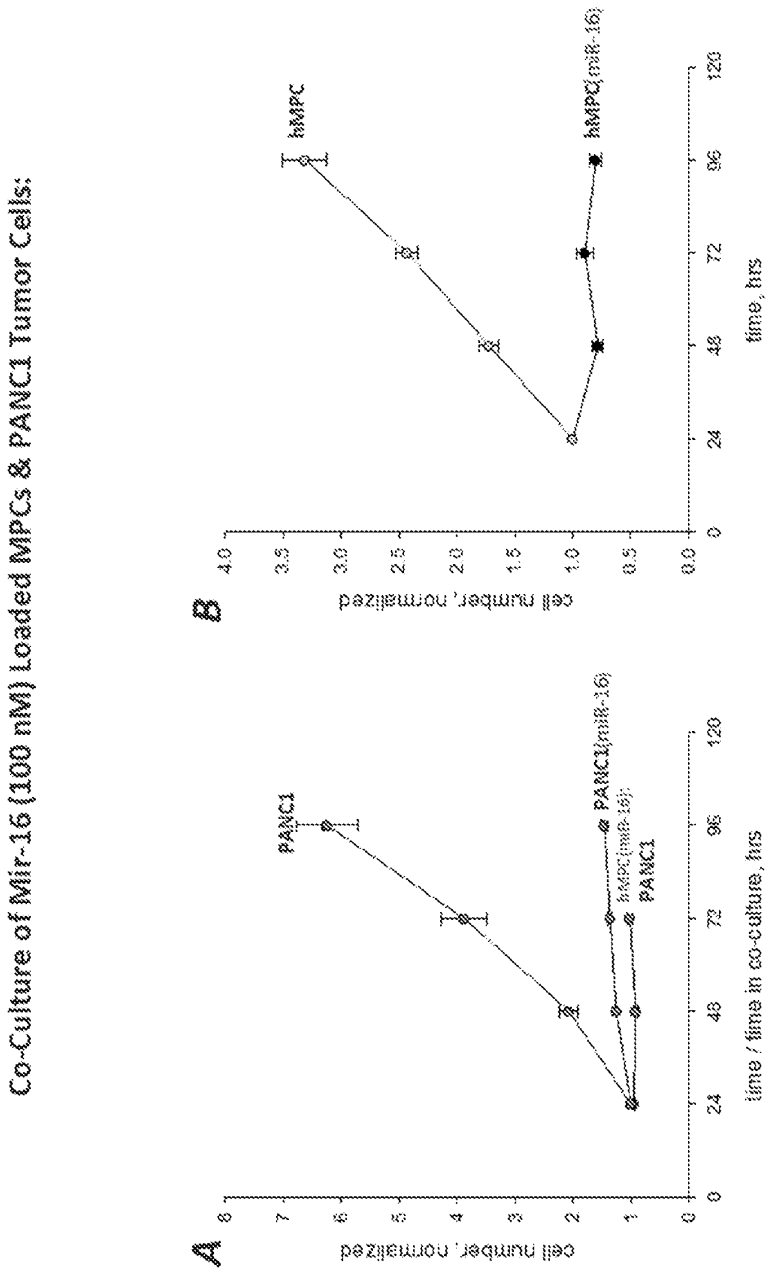

Co-Culture of Mir-16 (100 nM) Loaded MPCs & PANC1 Tumor Cells:
A
cell number, normalized
time / time in co-culture, hrs
PANC1
PANC1(mir-16)
hMPC(mir-16)
PANC1
B
cell number, normalized
time, hrs
hMPC
hMPC(mir-16)

FIGURE 9

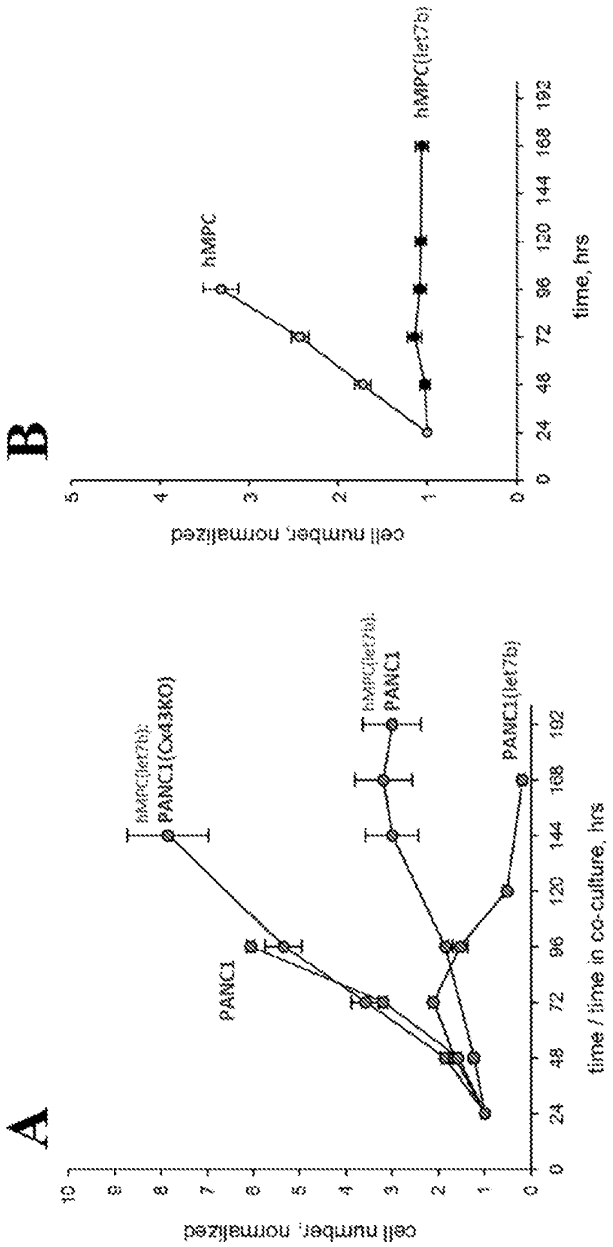

A
cell number, normalized
time / time in co-culture, hrs
PANC1
hMPC(let7b); PANC1(Cx43KO)
hMPC(let7b); PANC1
PANC1(let7b)
B
cell number, normalized
time, hrs
hMPC
hMPC(let7b)

FIGURE 10

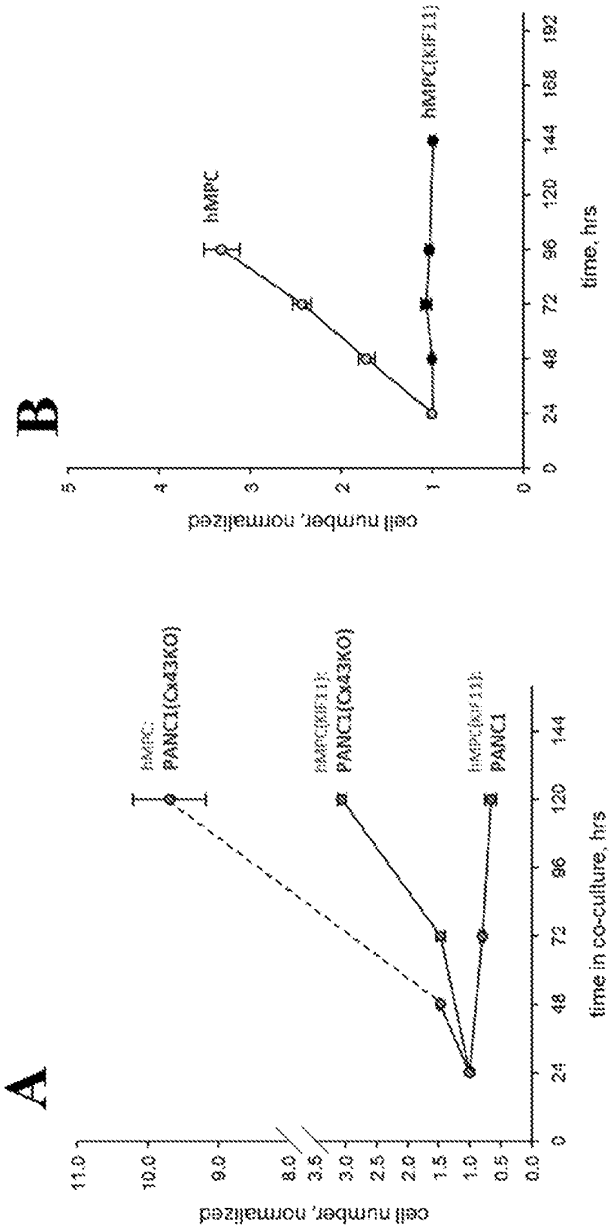

A
B
cell number, normalized
time in co-culture, hrs
time, hrs
hMPC
hMPC(KrasG12D)
PANC1(Cx43KO)
PANC1

FIGURE 11

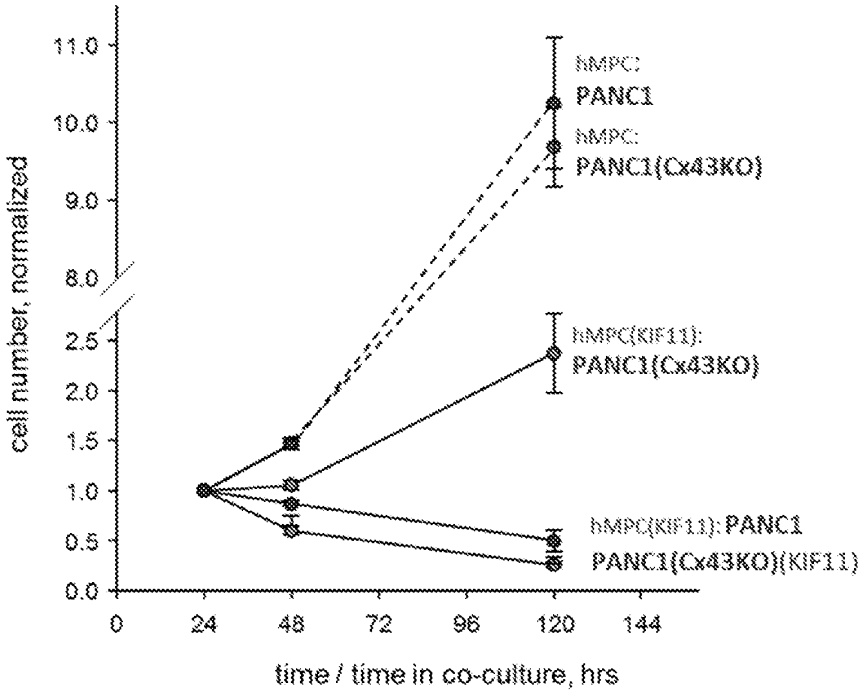

11.0
10.0
9.0
8.0
2.5
2.0
1.5
1.0
0.5
0.0
cell number, normalized
0
24
48
72
96
120
144
time / time in co-culture, hrs
hMPC:
PANC1
hMPC:
PANC1(Cx43KO)
hMPC(KIF11):
PANC1(Cx43KO)
hMPC(KIF11): PANC1
PANC1(Cx43KO)(KIF11)

FIGURE 12

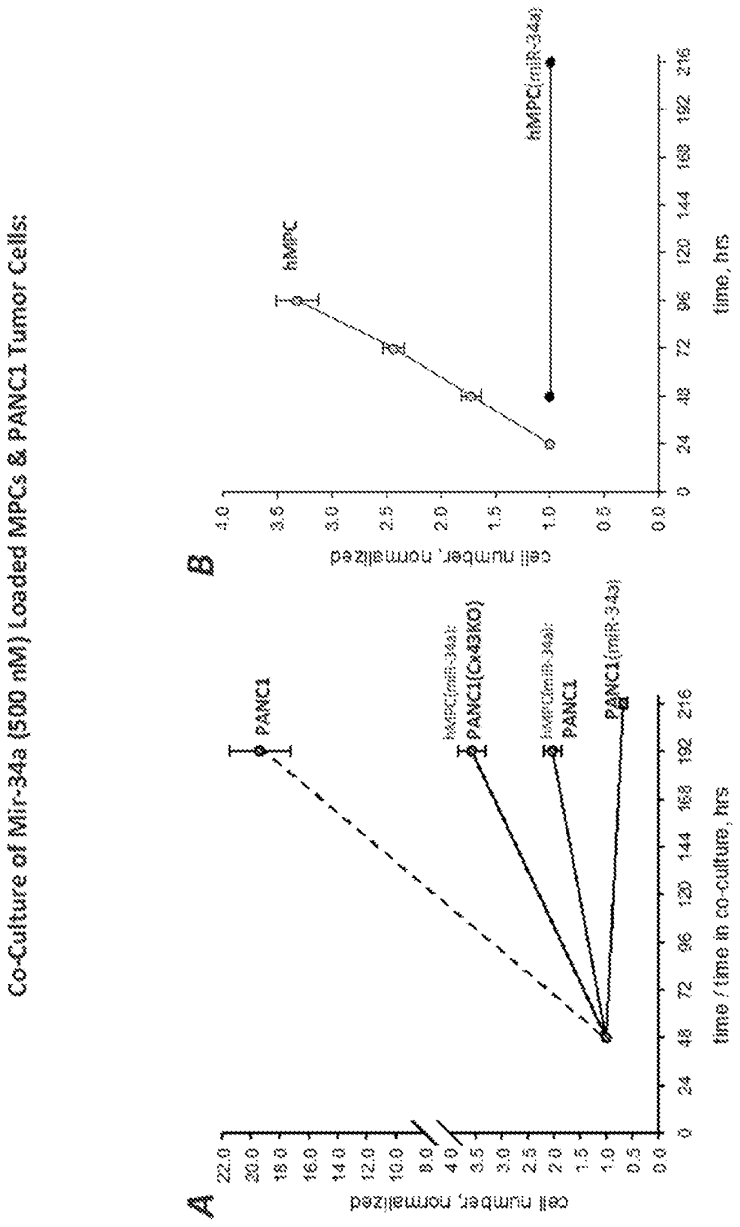

Co-Culture of Mir-34a (500 nM) Loaded MPCs & PANC1 Tumor Cells:
A
cell number, normalized
time / time in co-culture, hrs
PANC1
hMPC(miR-34a)
PANC1(Cx43KO)
hMPC(miR-34a)
PANC1
PANC1(miR-34a)
B
cell number, normalized
time, hrs
hMPC
hMPC(miR-34a)

FIGURE 13

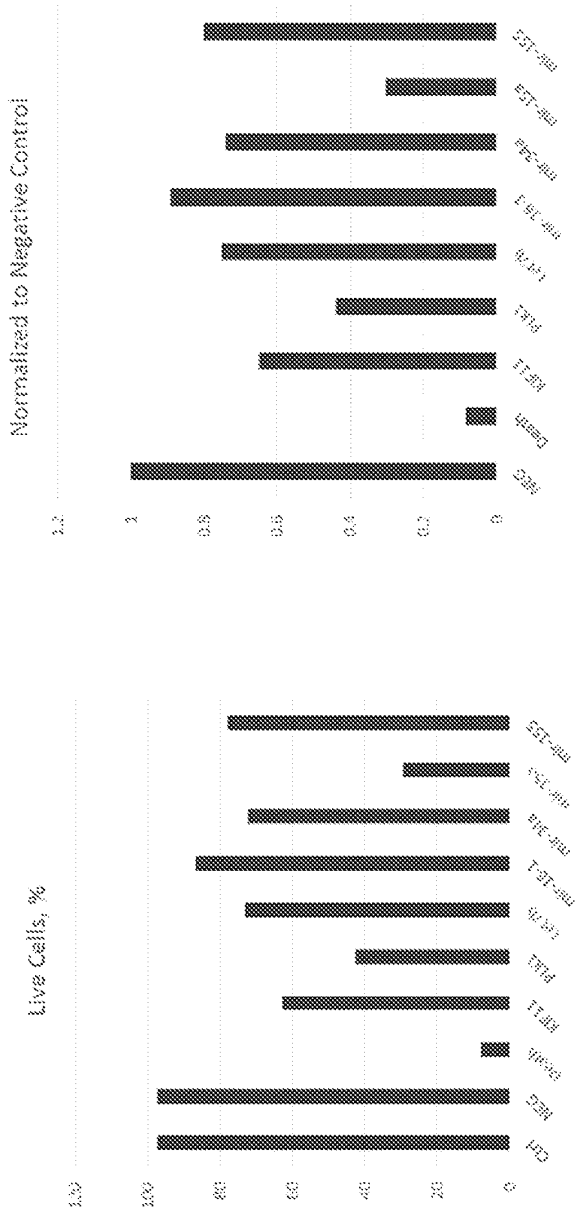
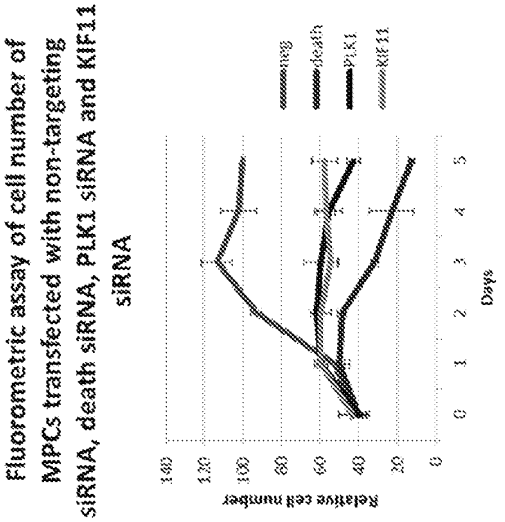
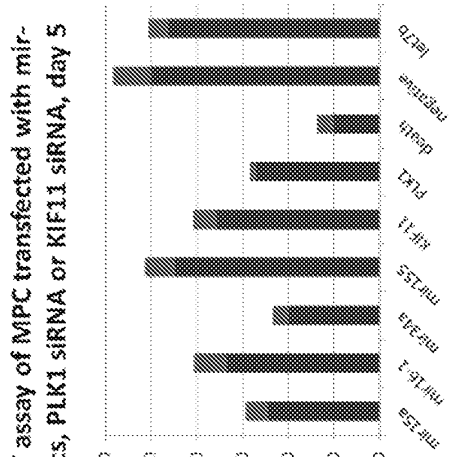


FIGURE 14(A)





	exp1	exp2	exp3		mean	STD
none	0.39	0.44	0.45	none	0.41	0.04
mir15a	0.27	0.35	0.31	mir15a	0.31	0.06
mir16-1	0.36	0.48	0.36	mir16-1	0.42	0.09
mir34a	0.22	0.28	0.21	mir34a	0.25	0.04
mir155	0.62	0.50	0.63	mir155	0.58	0.09
KIF11	0.49	0.40	0.64	KIF11	0.45	0.07
PLK1	0.33	0.35	0.39	PLK1	0.34	0.02
death	0.16	0.09	0.15	death	0.13	0.05
negative	0.70	0.55	0.84	negative	0.63	0.10
let7b	0.54	0.52	0.61	let7b	0.58	0.05

	mean	STD
none	45.94	3.65
mir15a	49.02	9.77
mir16-1	67.06	14.22
mir34a	39.84	5.63
mir155	89.34	13.56
KIF11	7102	1043
PLK1	53.59	2.75
death	20.05	7.27
negative	100.01	16.63
let7b	92.37	8.88

FIGURE 14(B)

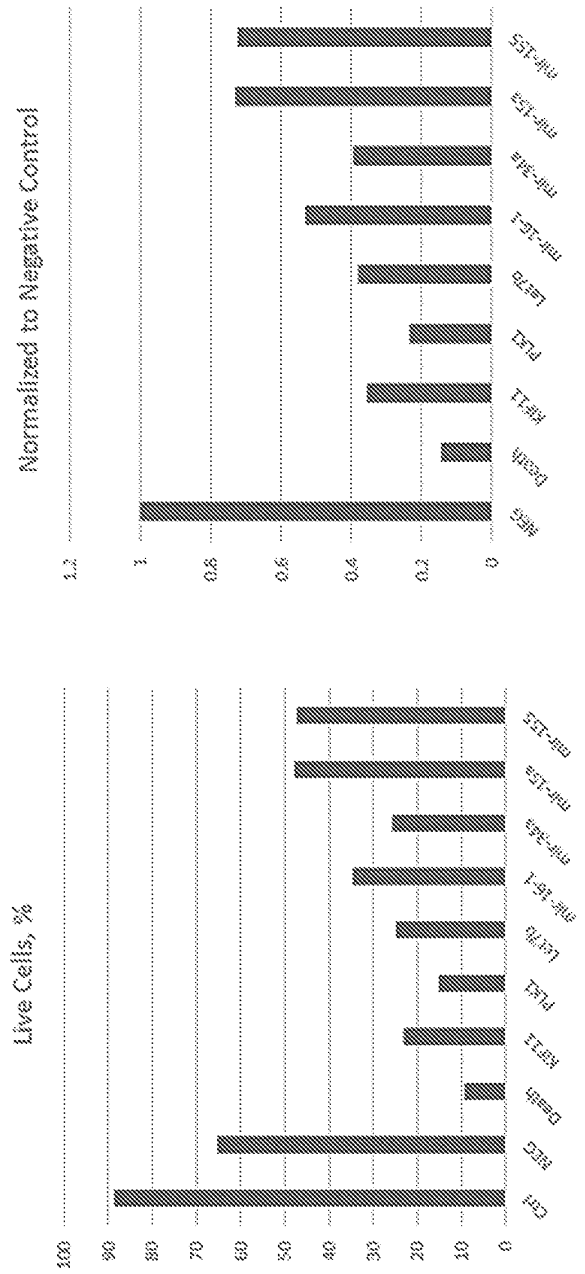
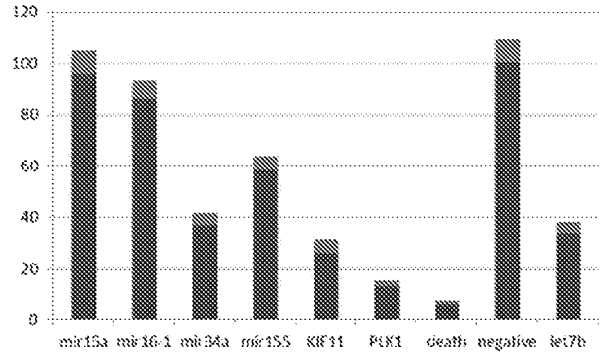

Normalized to Negative Control
1.2
1
0.8
0.6
0.4
0.2
0
Live Cells, %
100
90
80
70
60
50
40
30
20
10
0

FIGURE 15(A)

WST assay of PANC1 transfected with mir-mimics, PLK1 siRNA or KIF11 siRNA, day 5



	exp1	exp2	exp3		mean	STD		mean	STD
none	1.69	1.65	1.70	none	1.66	0.03	none	128.59	2.17
mir15a	1.29	1.35	1.11	mir15a	1.25	0.12	mir15a	95.74	9.27
mir16-1	1.06	1.23	1.09	mir16-1	1.12	0.09	mir16-1	86.08	7.04
mir34a	0.42	0.47	0.54	mir34a	0.48	0.06	mir34a	36.67	4.79
mir155	0.69	0.82	0.77	mir155	0.76	0.07	mir155	58.43	5.13
KIF11	0.26	0.37	0.39	KIF11	0.34	0.07	KIF11	25.91	5.50
PLK1	0.15	0.15	0.20	PLK1	0.17	0.03	PLK1	12.96	2.22
death	0.09	0.06	0.09	death	0.08	0.02	death	5.93	1.34
negative	1.17	1.36	1.39	negative	1.31	0.12	negative	100.00	9.17
let7b	0.38	0.49	0.45	let7b	0.44	0.06	let7b	33.54	4.38

FIGURE 15(B)

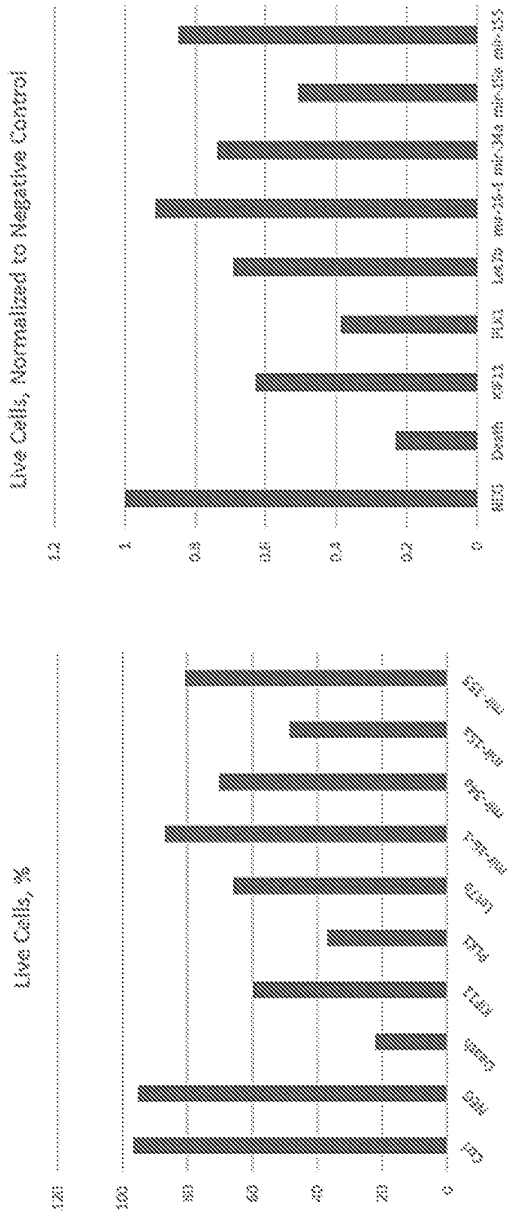
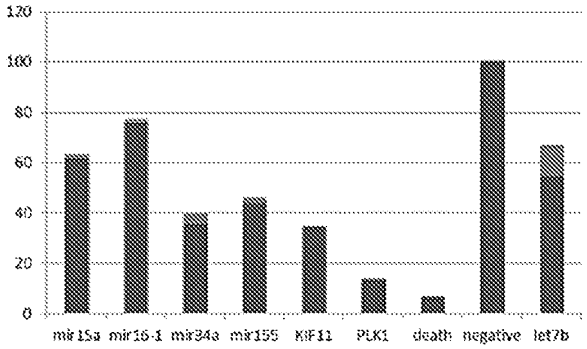

Live Cells, Normalized to Negative Control
1.2
1
0.8
0.6
0.4
0.2
0
NEG
Dox
KP13
PAX
Lat2b
mir-34a
mir-34a mir-155
mir-155
Live Cells, %
120
100
80
60
40
20
0

FIGURE 16(A)

WST assay of PC3 cells transfected with mir-mimics, PLK1 siRNA or KIF11 siRNA, day 5



	exp1	exp2	exp3		mean	STD		mean	STD
								101.2	
none	1.89	1.90	1.82	none	1.87	0.05	none	1	2.54
mir15a	1.16	1.11	0.76	mir15a	1.14	0.03	mir15a	61.57	1.83
mir16-1	1.42	1.38	1.07	mir16-1	1.40	0.03	mir16-1	75.66	1.61
mir34a	0.71	0.60	0.69	mir34a	0.65	0.07	mir34a	35.49	4.06
mir155	0.79	0.84	0.61	mir155	0.81	0.04	mir155	44.12	1.95
KIF11	0.64	0.63	0.50	KIF11	0.64	0.01	KIF11	34.55	0.29
PLK1	0.24	0.25	0.17	PLK1	0.25	0.01	PLK1	13.30	0.48
death	0.12	0.11	0.03	death	0.11	0.01	death	6.17	0.35
								100.0	
negative	1.86	1.83	1.75	negative	1.85	0.02	negative	2	0.87
let7b	0.85	1.17	0.62	let7b	1.01	0.22	let7b	54.69	12.07

FIGURE 16(B)

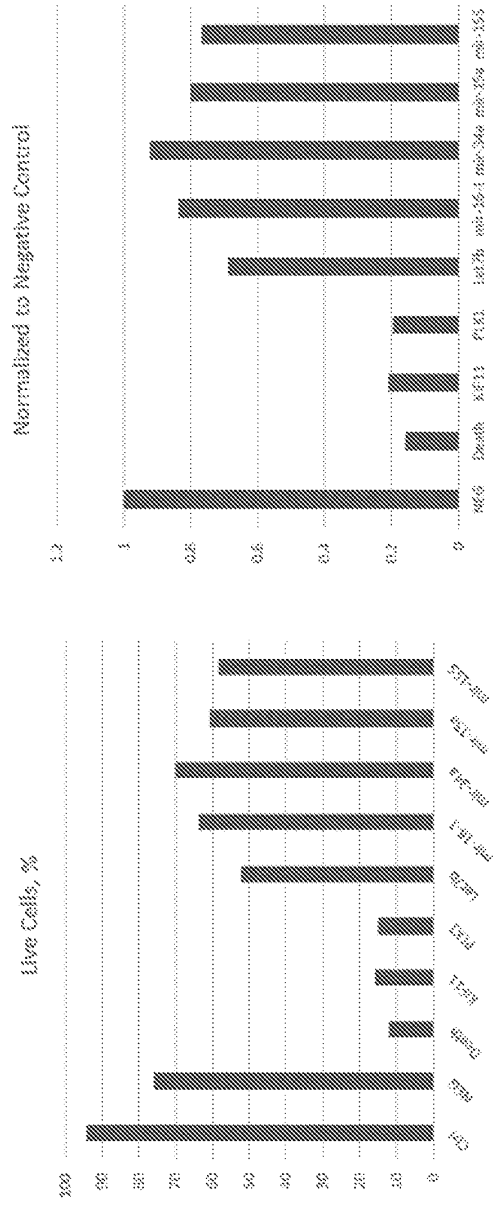
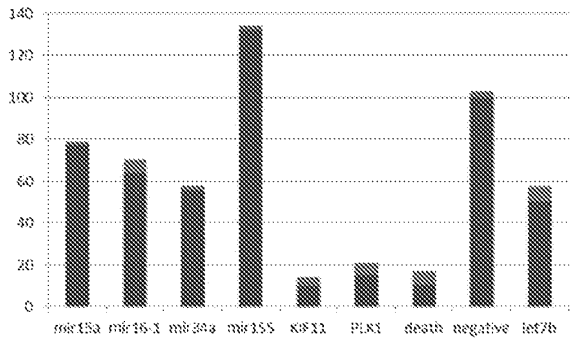

Normalized to Negative Control
1.2
1
0.8
0.6
0.4
0.2
0
NC
Death
KRT1
CK1
let-7b
miR-34a
miR-15a
miR-155
Live Cells, %
100
90
80
70
60
50
40
30
20
10
0
CTRL
KRT1
CK1
let-7b
miR-34a
miR-15a
miR-155

FIGURE 17(A)

WST assay of SAOS2 cells transfected with mir-mimics, PLK1 siRNA or KIF11 siRNA, day 5



	exp1	exp2	exp3		mean	STD		mean	STD
none	1.20	1.19	0.98	none	1.19	0.01	none	129.00	1.26
mir15a	0.72	0.71	0.46	mir15a	0.72	0.01	mir15a	77.35	1.02
mir16-1	0.55	0.63	0.47	mir16-1	0.59	0.06	mir16-1	63.59	6.51
mir34a	0.50	0.53	0.53	mir34a	0.52	0.02	mir34a	55.64	1.99
mir155	1.21	1.24	0.96	mir155	1.22	0.02	mir155	132.08	1.98
KIF11	0.12	0.07	0.14	KIF11	0.09	0.04	KIF11	9.94	4.00
PLK1	0.18	0.11	0.10	PLK1	0.14	0.05	PLK1	15.20	5.49
death	0.14	0.06	0.07	death	0.10	0.06	death	10.60	6.58
negative	0.94	0.91	0.80	negative	0.93	0.02	negative	100.01	2.48
let7b	0.42	0.51	0.27	let7b	0.47	0.07	let7b	50.42	7.04

FIGURE 17(B)

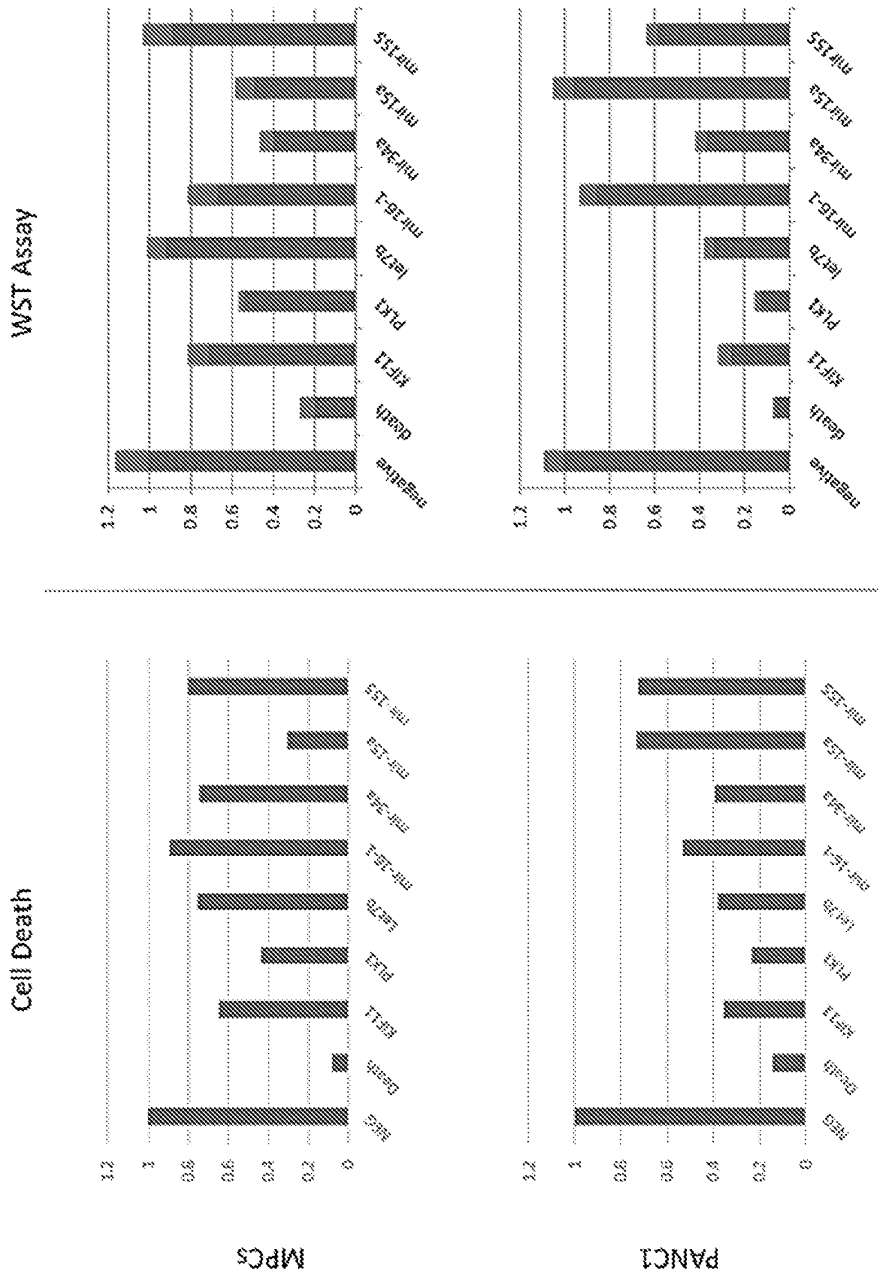

WST Assay
Cell Death
PANC1
MPCs
Resistive
Death
KIF11
PLK1
IER3
miR-26-1
miR-34a
miR-15a
miR-155
1.2
1
0.8
0.6
0.4
0.2
0

FIGURE 18

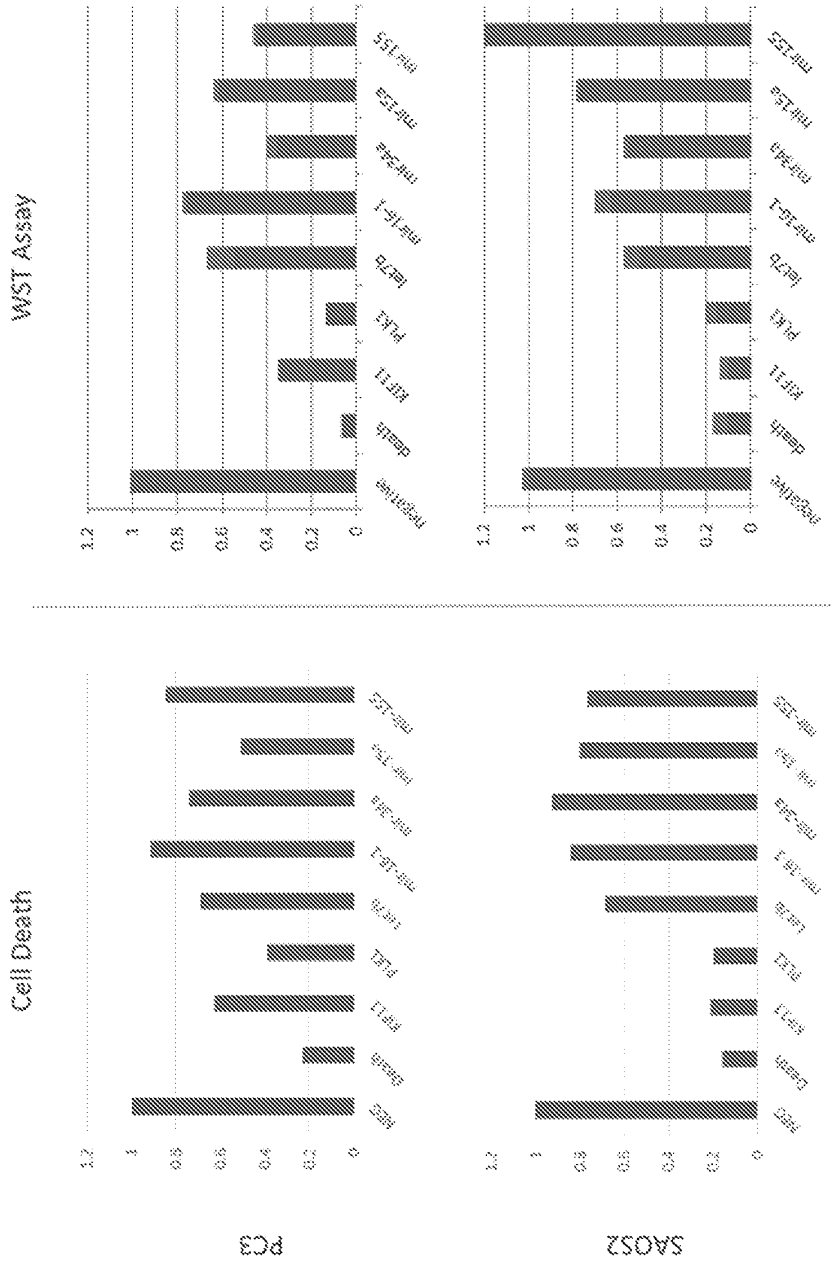


FIGURE 19

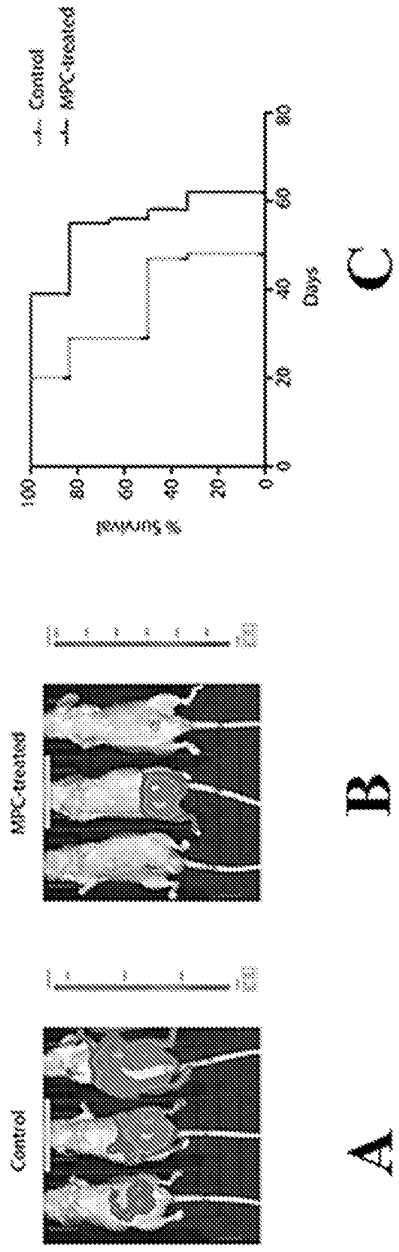


FIGURE 20

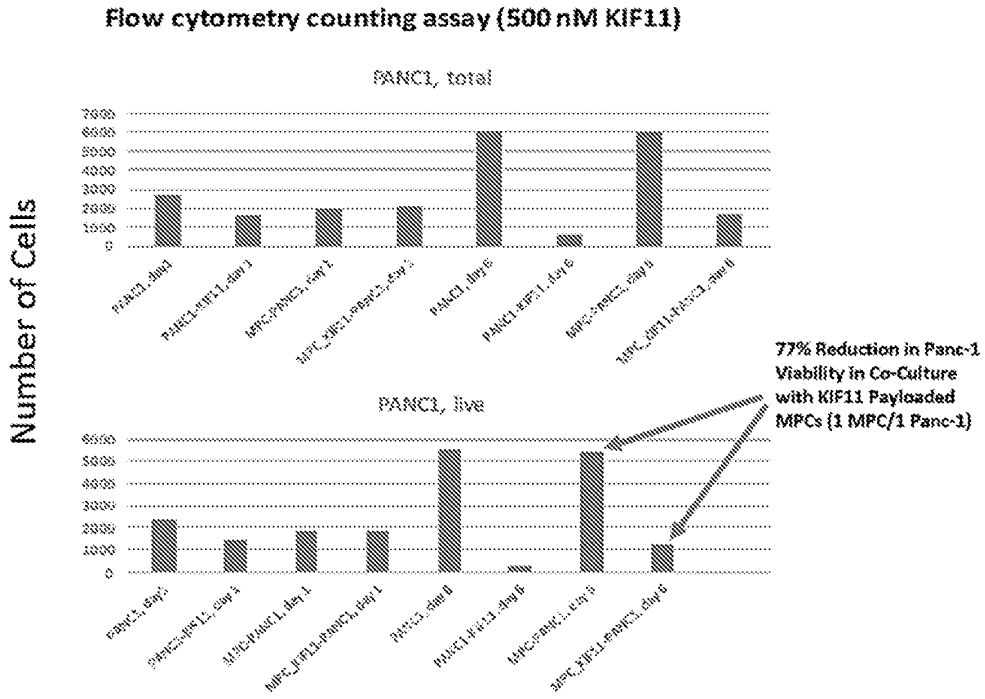

Flow cytometry counting assay (500 nM KIF11)
PANC1, total
Number of Cells
PANC1, live
77% Reduction in Panc-1 Viability in Co-Culture with KIF11 Payloaded MPCs (1 MPC/1 Panc-1)

FIGURE 21

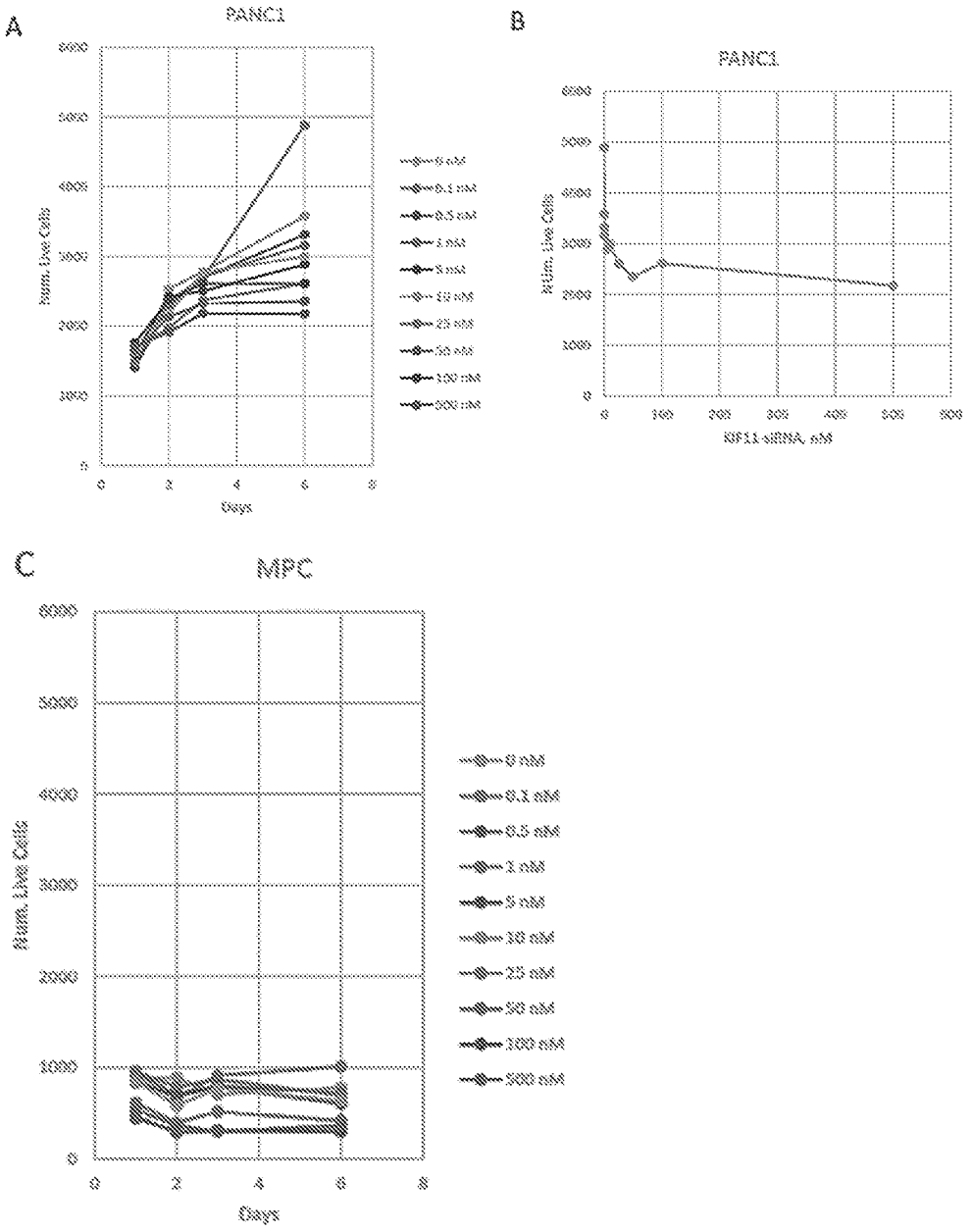

A
PANC1
Norm. Live Cells
Days
B
PANC1
Norm. Live Cells
IGF1 siRNA, nM
C
MPC
Norm. Live Cells
Days
0 nM
0.1 nM
0.5 nM
1 nM
5 nM
10 nM
25 nM
50 nM
100 nM
500 nM

FIGURE 22

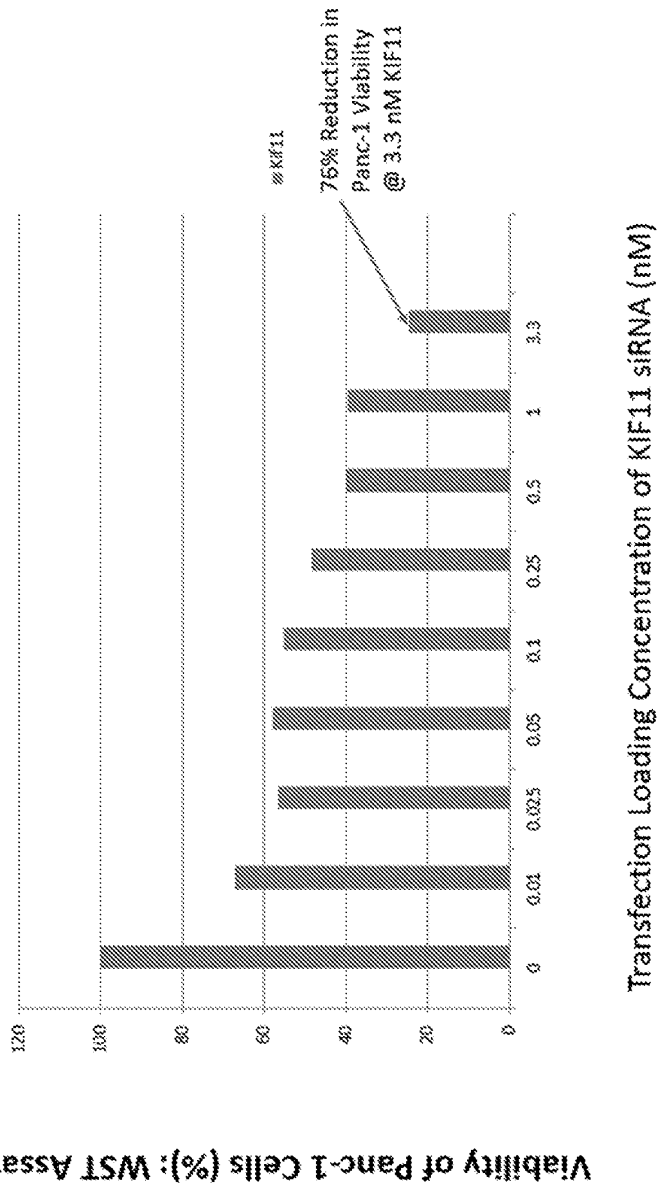

Viability of Panc-1 Cells (%): WST Assay
120
100
80
60
40
20
0
Transfection Loading Concentration of KIF11 siRNA (nM)
0
0.01
0.025
0.05
0.1
0.25
0.5
1
3.3
KIF11
76% Reduction in Panc-1 Viability @ 3.3 nM KIF11

FIGURE 23

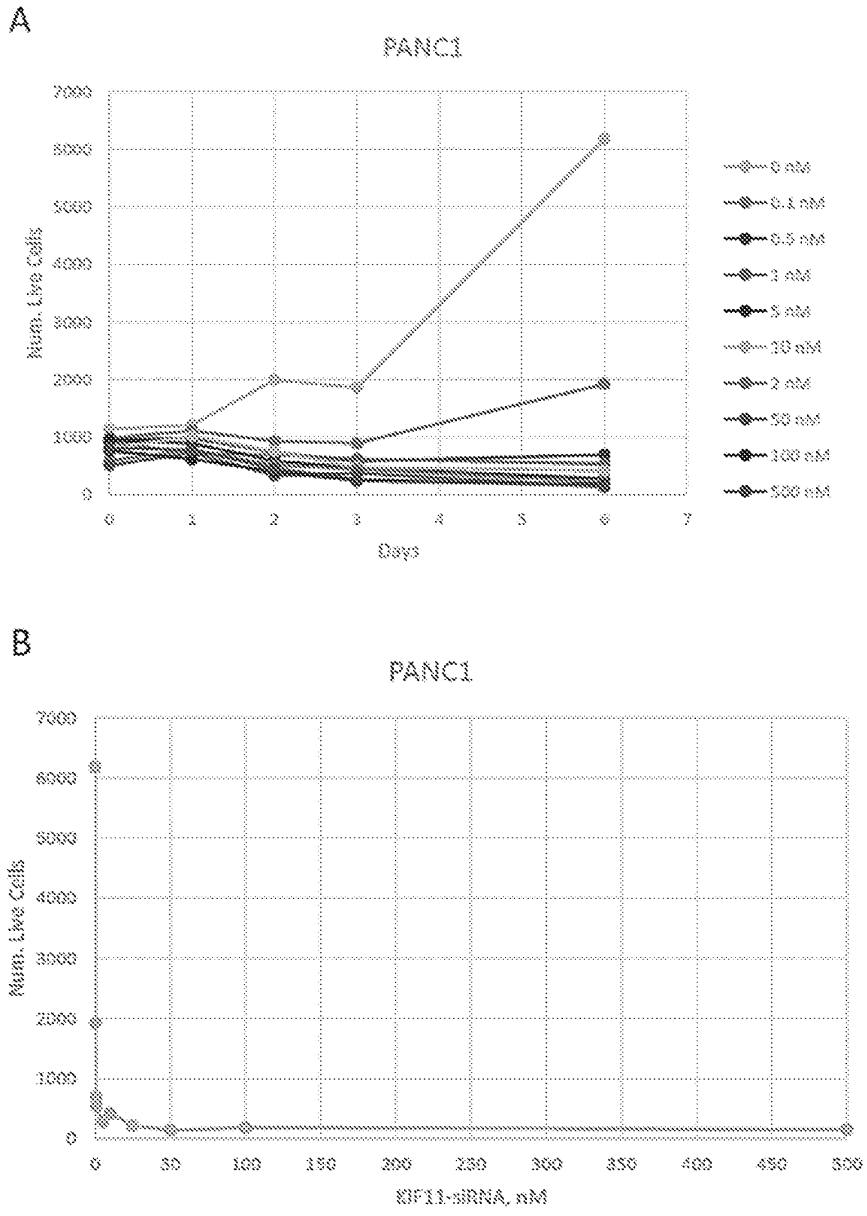

A
PANC1
Num. Live Cells
Days
0 nM
0.1 nM
0.5 nM
1 nM
5 nM
10 nM
20 nM
50 nM
100 nM
500 nM
B
PANC1
Num. Live Cells
EIF11-siRNA, nM

FIGURE 24

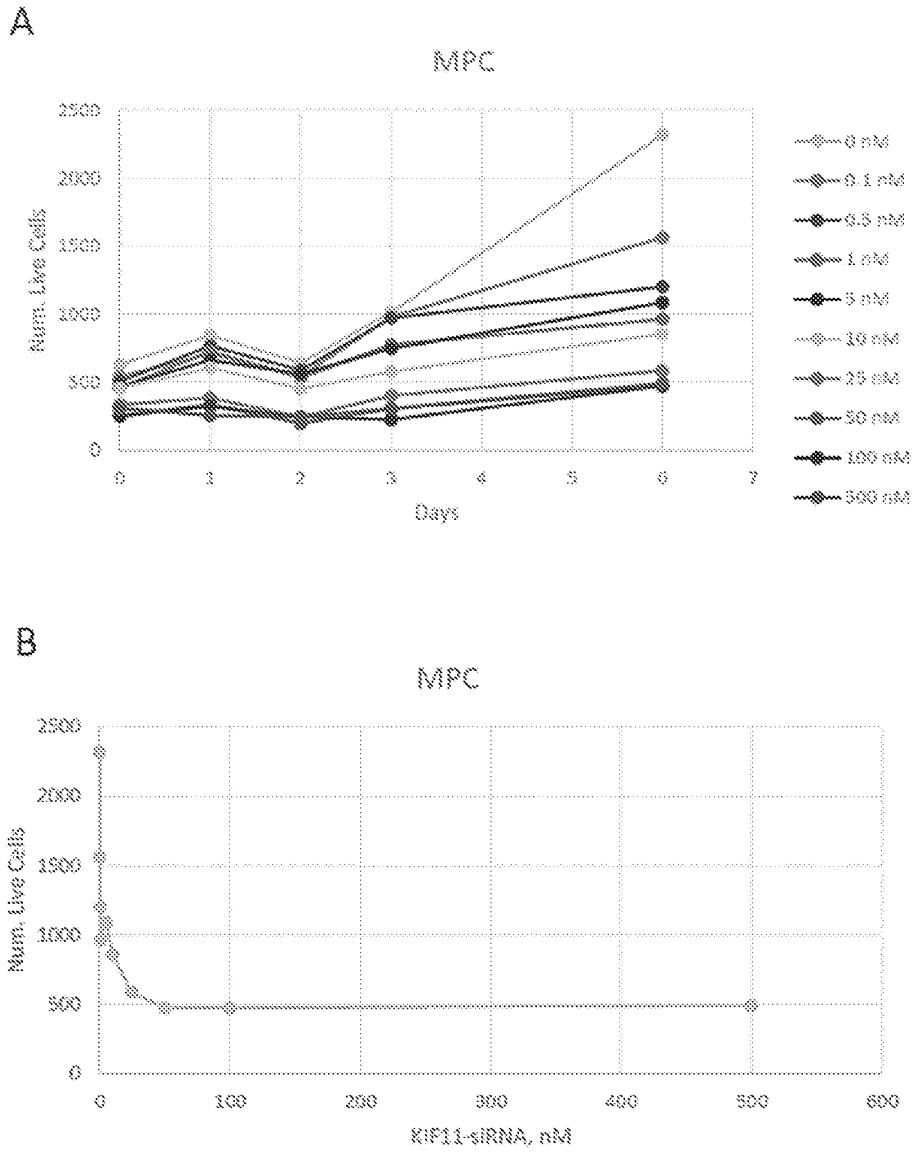

A
MPC
Num. Live Cells
2500
2000
1500
1000
500
0
0
1
2
3
4
5
6
7
Days
0 nM
0.1 nM
0.5 nM
1 nM
5 nM
10 nM
25 nM
50 nM
100 nM
500 nM
B
MPC
Num. Live Cells
2500
2000
1500
1000
500
0
0
100
200
300
400
500
600
KIF11-siRNA, nM

FIGURE 25

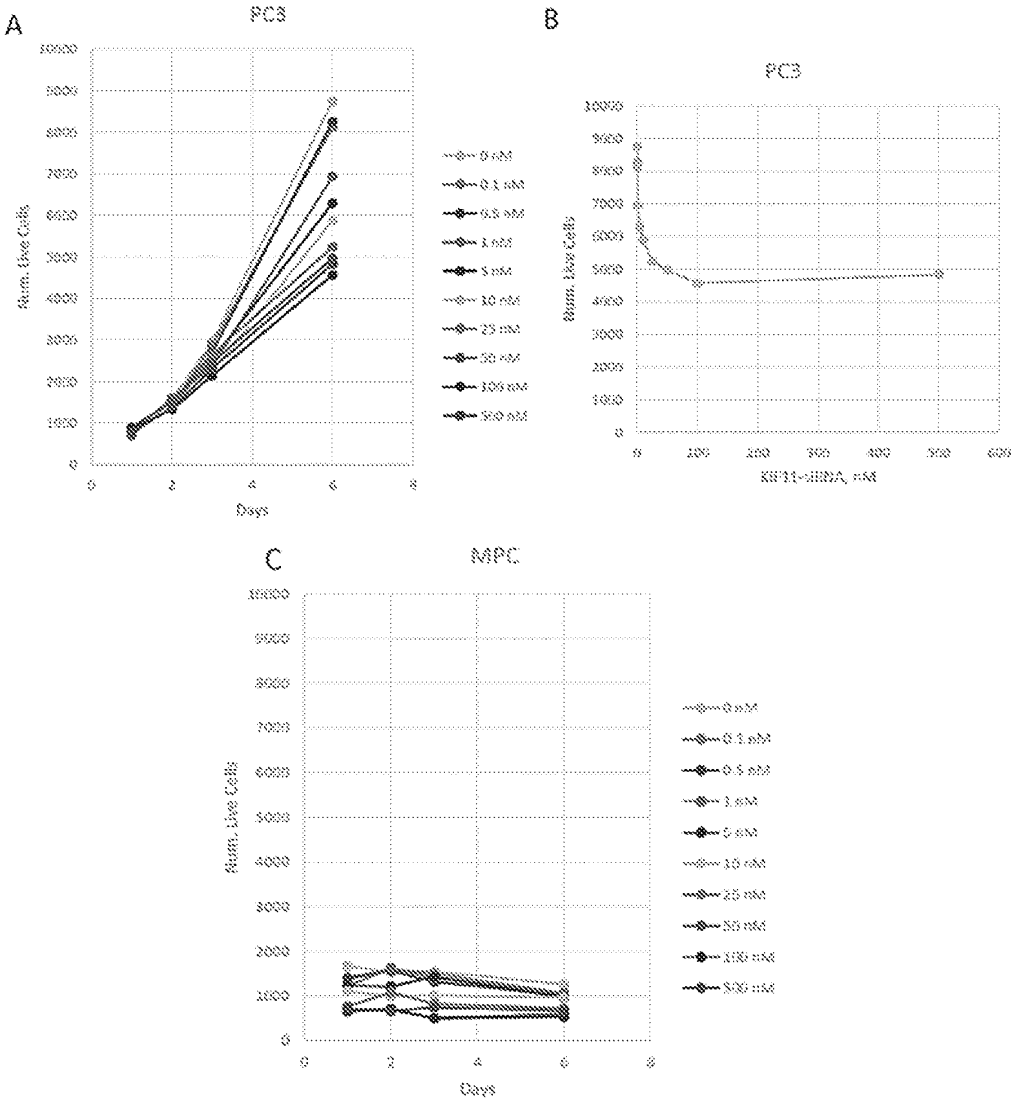

A
PC3
Num. Live Cells
Days
0 nM
0.1 nM
0.5 nM
1 nM
5 nM
10 nM
25 nM
50 nM
100 nM
500 nM
B
PC3
Num. Live Cells
C
MPC
Num. Live Cells
Days

FIGURE 26

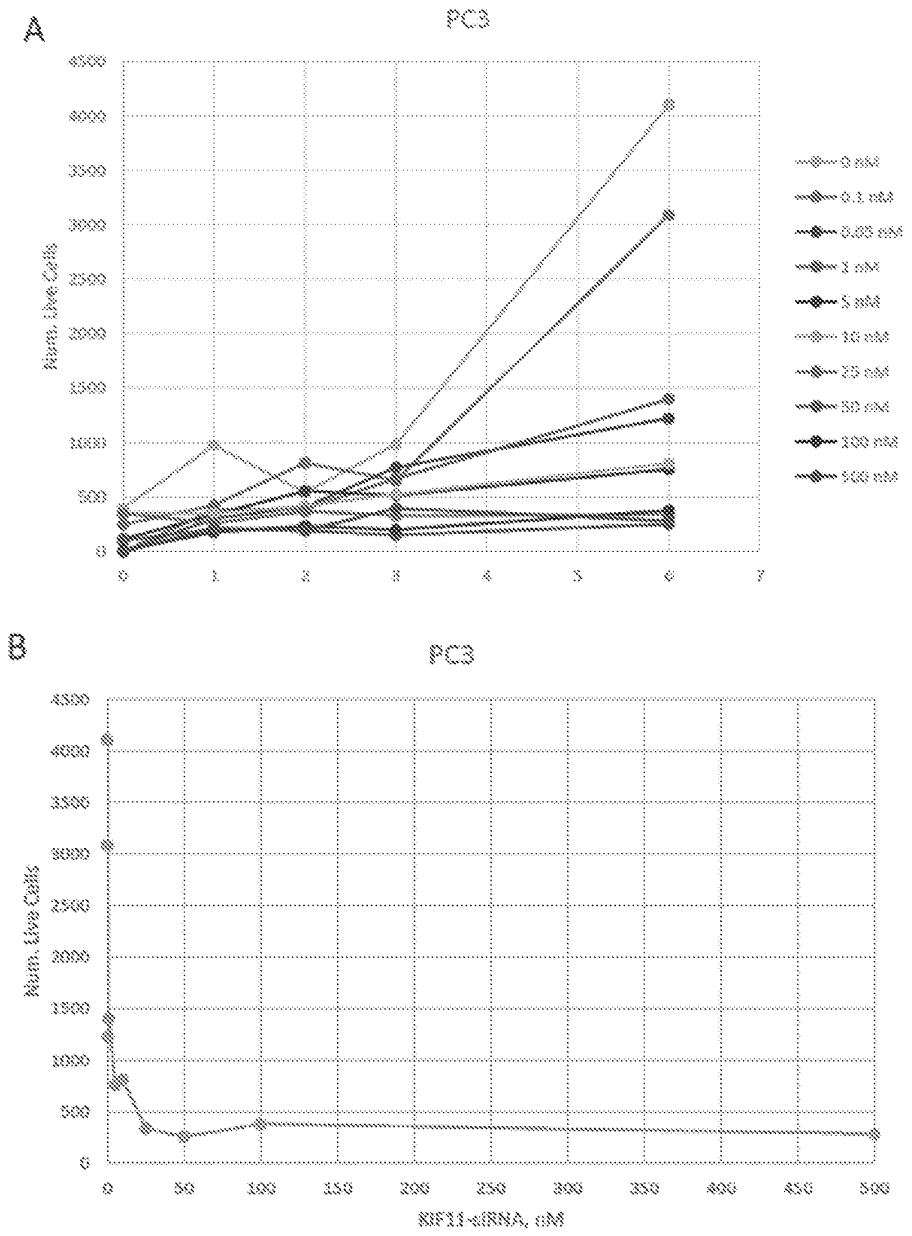
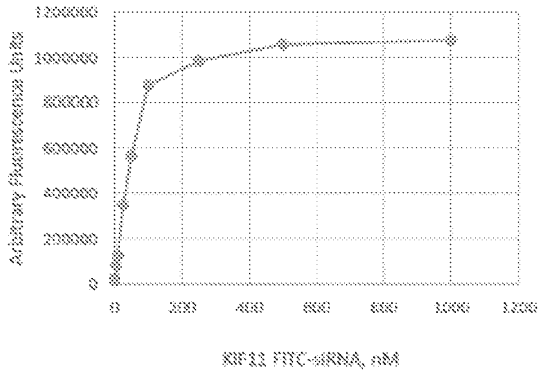
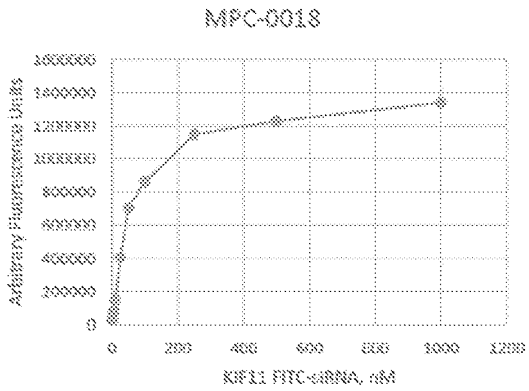

A
PC3
Num. Live Cells
0
500
1000
1500
2000
2500
3000
3500
4000
4500
0
1
2
3
4
5
6
7
0 nM
0.1 nM
0.25 nM
1 nM
5 nM
10 nM
25 nM
50 nM
100 nM
500 nM
B
PC3
Num. Live Cells
0
500
1000
1500
2000
2500
3000
3500
4000
4500
0
50
100
150
200
250
300
350
400
450
500
RIF11-siRNA, nM

FIGURE 27

A



B



C

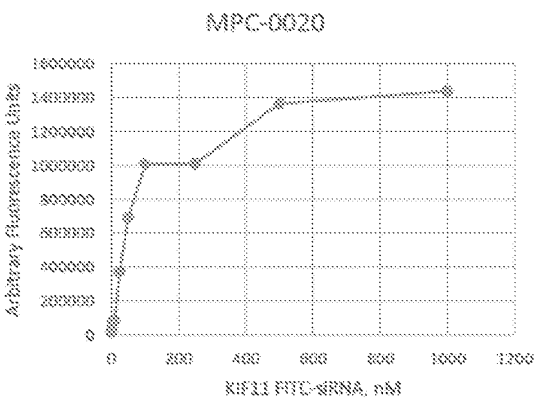


FIGURE 28

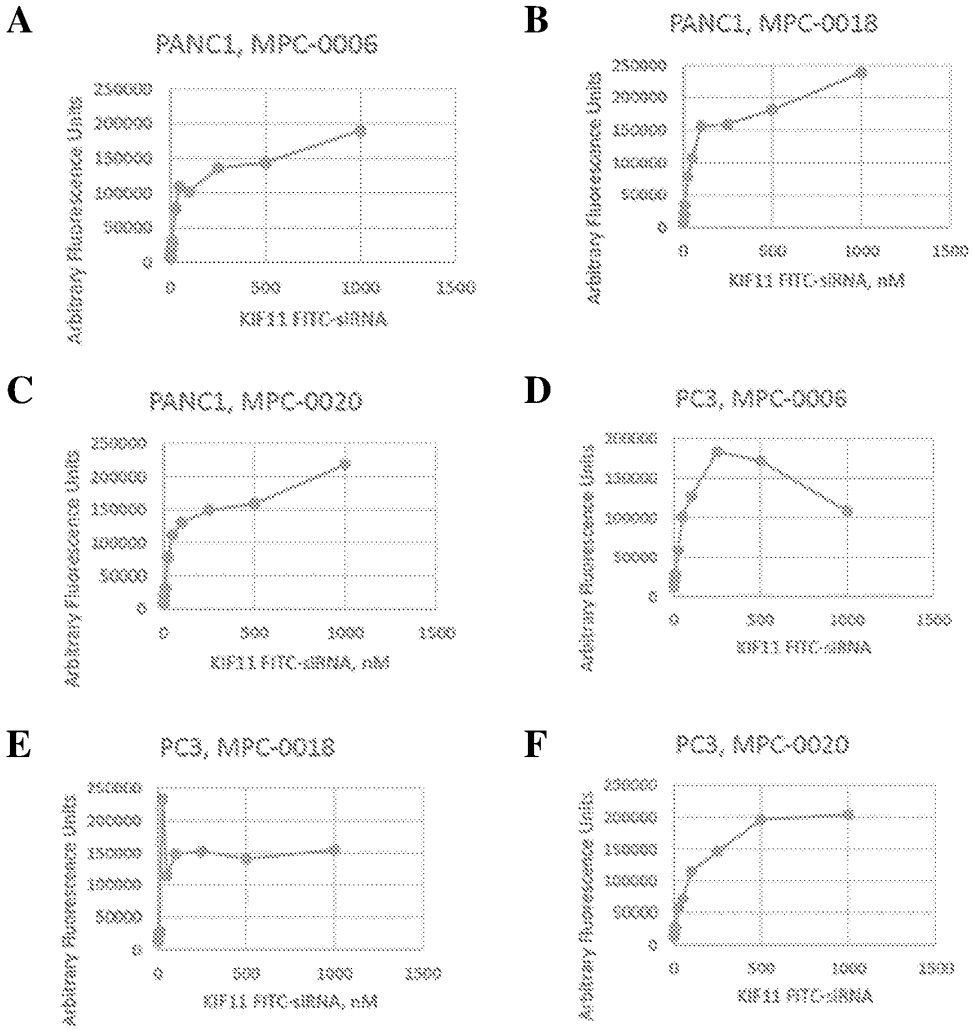

A
PANC1, MPC-0006
Arbitrary Fluorescence Units
KIF11 FITC-siRNA
B
PANC1, MPC-0018
Arbitrary Fluorescence Units
KIF11 FITC-siRNA, nM
C
PANC1, MPC-0020
Arbitrary Fluorescence Units
KIF11 FITC-siRNA, nM
D
PC3, MPC-0006
Arbitrary Fluorescence Units
KIF11 FITC-siRNA
E
PC3, MPC-0018
Arbitrary Fluorescence Units
KIF11 FITC-siRNA, nM
F
PC3, MPC-0020
Arbitrary Fluorescence Units
KIF11 FITC-siRNA

FIGURE 29

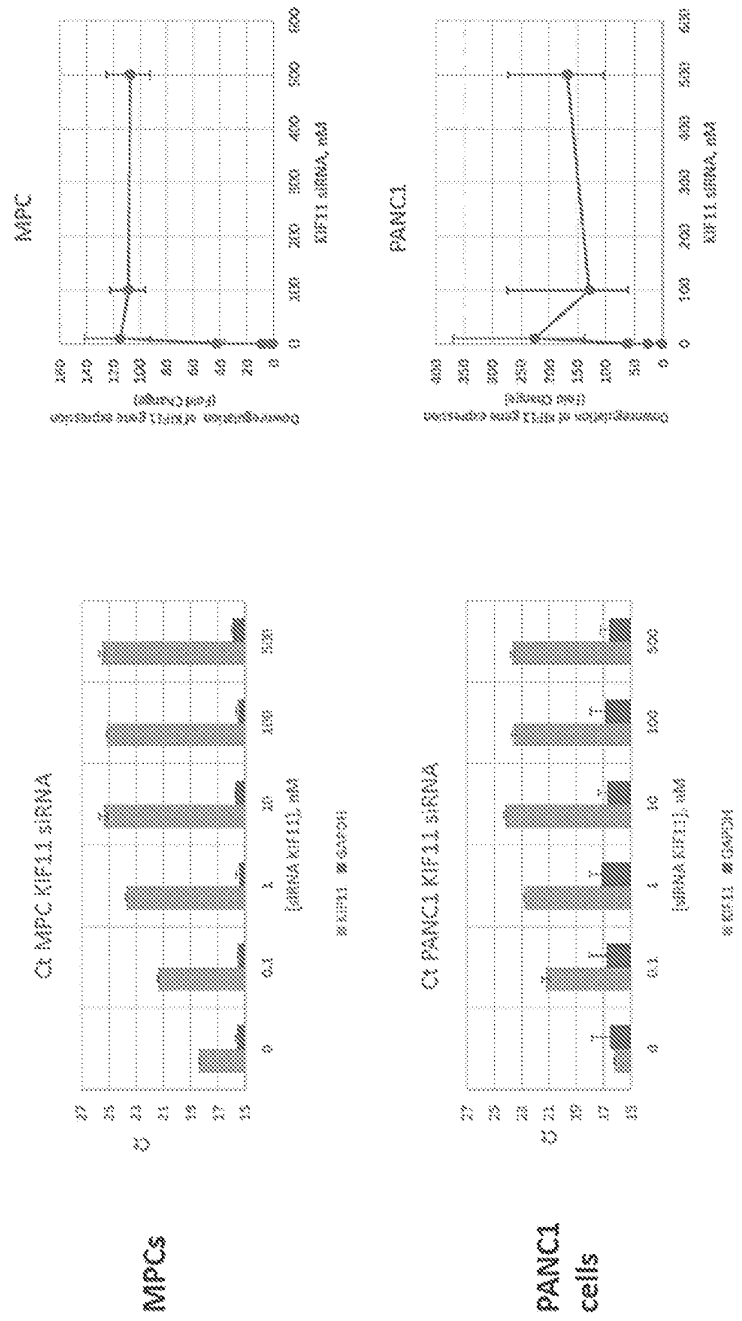

MPC
PANC1
Ct MPC KIF11 siRNA
Ct PANC1 KIF11 siRNA
[siRNA KIF11], nM
KIF11
GAPDH
MPCs
PANC1
cells

FIGURE 30

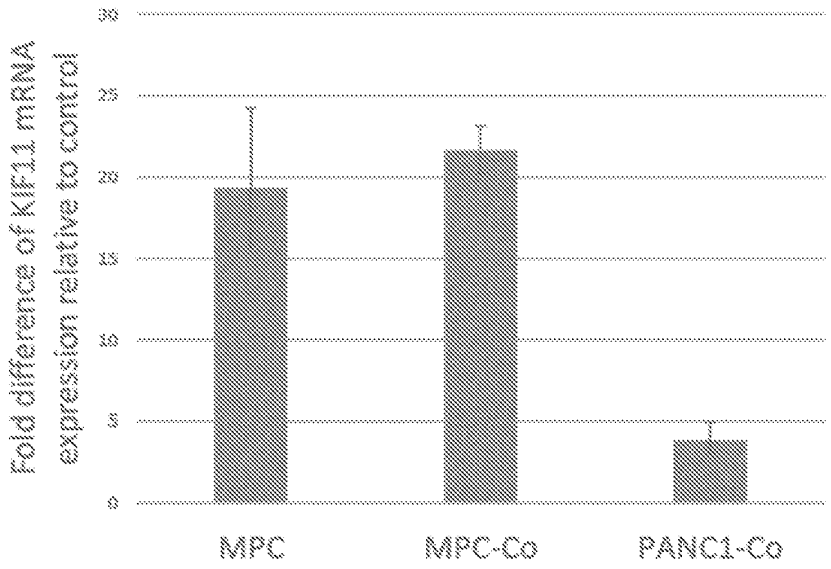

Fold difference of KIF11 mRNA expression relative to control
0
5
10
15
20
25
30
MPC
MPC-Co
PANC1-Co

FIGURE 31

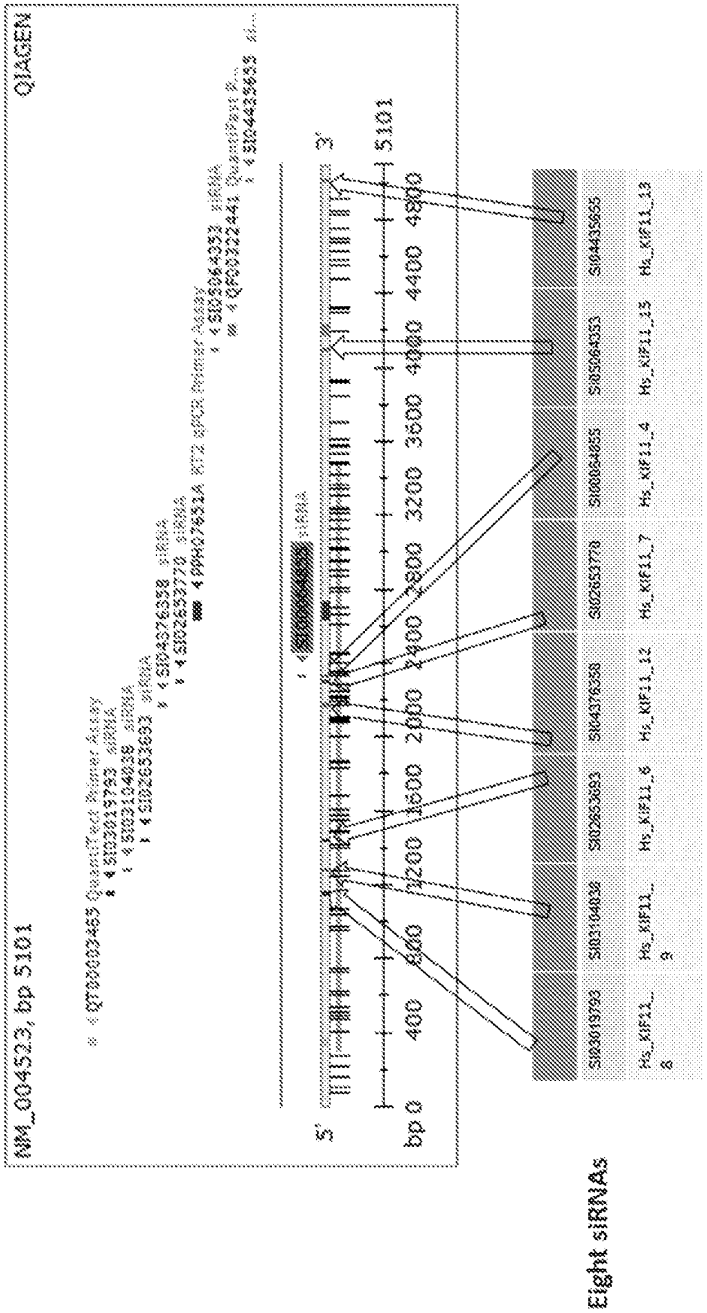

QIAGEN
NM_004523, bp 5101
5'
3'
bp 0
400
800
1200
1600
2000
2400
2800
3200
3600
4000
4400
4800
5101
Eight siRNAs

FIGURE 32

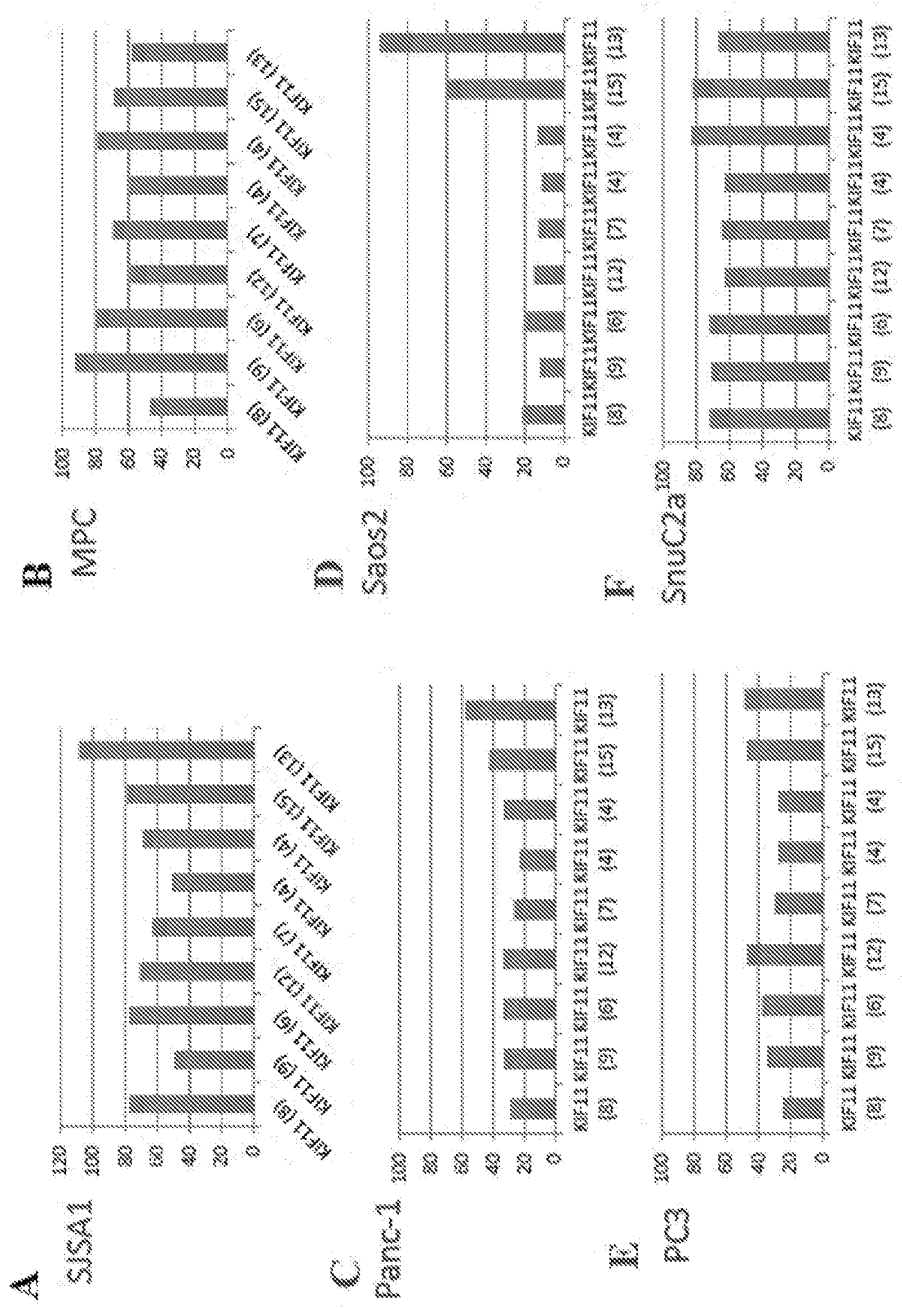


FIGURE 33

Top 10 down regulated genes in MPCs

ID	Trans Avg (log2)	Ctrl Avg (log2)	Trans Expressed	Ctrl Expressed	Fold Change	P-val	FDR P-val	Gene Symbol	Description
TCONS_00008471.hg.1	5.92	10.13	1	1	-16.47	3.77E-09	8.69E-05	KIF11	kinesin family member 11
TCONS_00013245.hg.1	13.24	14.93	1	1	-3.22	8.42E-06	0.0215	FSTL1, MIR185	follistatin like 1, microRNA 185
TCONS_00016260.hg.1	8.98	10.6	1	1	-3.07	0.0002	0.1311	ALDH6A1	aldehyde dehydrogenase 6 family, member A1
TCONS_00006635.hg.1	9.68	11.28	1	1	-3.02	1.66E-06	0.0111	EVI5	ecotropic viral integration site 5, GAP accessory protein 45
TCONS_00012860.hg.1	8.48	9.87	1	1	-2.63	6.56E-07	0.0047	SYPL1	synaptophysin like 1
TCONS_00007036.hg.1	5.83	7.2	1	1	-2.58	0.0047	0.276	GINS1	GINS complex subunit 1 (PSF1 homolog)
TCONS_00007937.hg.1	5.11	6.49	1	1	-2.58	0.0458	0.4747	DSP2	dystrophin related protein 2
TCONS_00010444.hg.1	6.32	8.55	1	1	-2.34	2.12E-05	0.0868	CARNMT1	carnosine N-methyltransferase 1
TCONS_00010264.hg.1	6.74	7.82	1	1	-2.27	0.0007	0.1858	MFSD5	major facilitator superfamily domain containing 5
TCONS_00013432.hg.1	8.4	10.51	1	1	-2.17	4.37E-06	0.0188	HMGB2	high mobility group box 2

Top 10 down regulated genes in MSCs

ID	Trans Avg (log2)	Ctrl Avg (log2)	Trans Expressed	Ctrl Expressed	Fold Change	P-val	FDR P-val	Gene Symbol	Description
TCONS_00008471.hg.1	5.19	9.51	1	1	-20.07	5.24E-08	0.0011	KIF11	kinesin family member 11
TCONS_00013245.hg.1	13.34	15.22	1	1	-3.71	7.11E-05	0.1106	FSTL1, MIR185	follistatin like 1, microRNA 185
TCONS_00013101.hg.1	5.52	7.28	1	1	-3.39	1.06E-05	0.0147	PLPPR4	phospholipid phosphatase related 4
TCONS_00011080.hg.1	8.13	9.96	1	1	-3.32	6.47E-05	0.1366	SYPL1	synaptophysin like 1
TCONS_00006635.hg.1	9.11	10.84	1	1	-3.11	6.46E-06	0.0146	EVI5	EVI5, ETS domain protein (GAP accessory protein 2)
TCONS_00016132.hg.1	9.1	10.93	1	1	-2.83	0.0002	0.1399	TAPT1	transmembrane anterior posterior transformation 1
TCONS_00016260.hg.1	9.59	10.96	1	1	-2.55	1.42E-06	0.0147	ALDH6A1	aldehyde dehydrogenase 6 family, member A1
TCONS_00008166.hg.1	5.45	6.73	1	1	-2.45	0.0009	0.5538	SLC25A27	solute carrier family 25, member 27
TCONS_00011121.hg.1	11.38	12.5	1	1	-2.34	0.0001	0.1366	TCP11	t-complex of 69032.1
TCONS_00008838.hg.1	10.68	11.89	1	1	-2.31	0.0192	0.4823	GSG1	Gsg1 cation-coil protein

FIGURE 34