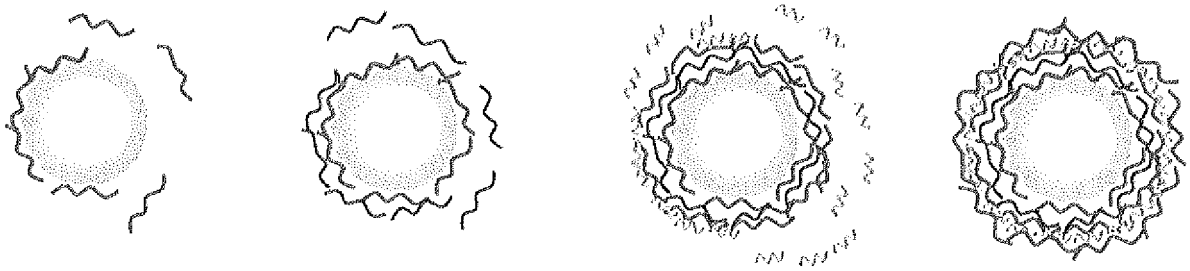
Figure 1

A.



Coating of first polyelectrolyte on HA nanoparticle

Coating of second polyelectrolyte

Coating of siGLO Green

siGLO Green encapsulated within polyelectrolyte multilayer

B.

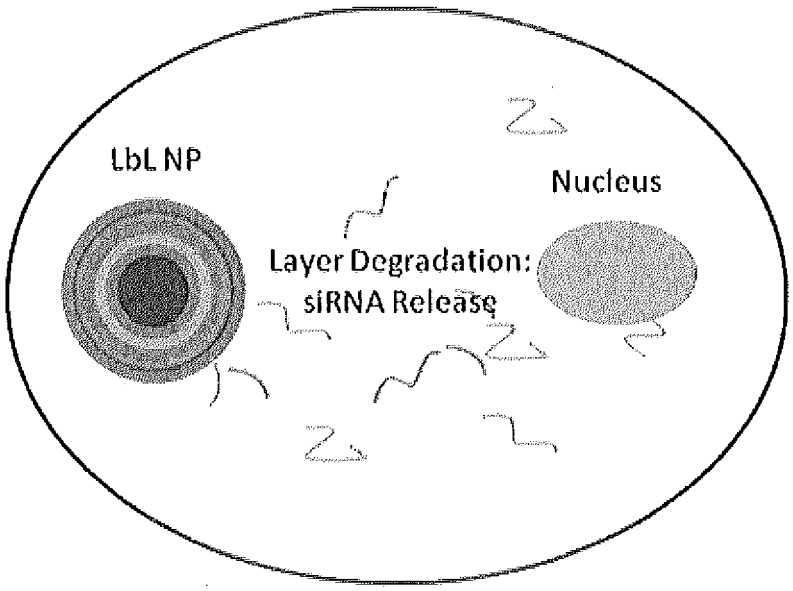


Figure 2

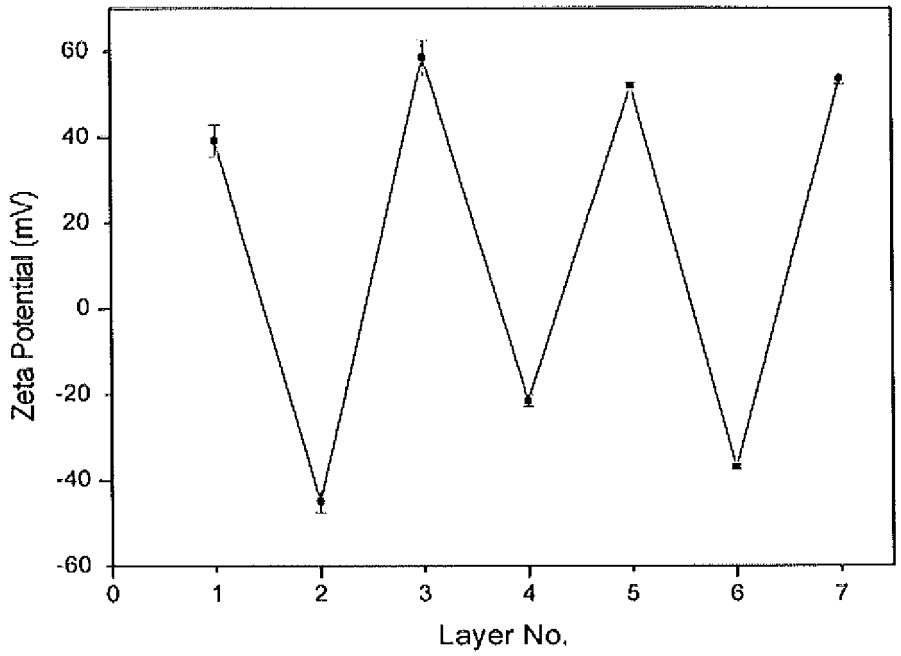


Figure 3

Layer-*by*-Layer nanoparticles	Mean particle size (nm)	Dispersity ± SD	Zeta potential (mV ± SD)
HA	121 ± 5	0.23 ± 0.01	-22 ± 1
HA/ARG/	230 ± 54	0.2 ± 0.04	57.5 ± 8.3
HA/ARG/DXS/	245 ± 20	0.2 ± 0.08	-63.3 ± 10.7
HA/ARG/DXS/ARG /	347 ± 44	0.3 ± 0.09	43.1 ± 13.5
HA/ARG/DXS/ARG /SPARC/	375 ± 107	0.3 ± 0.07	-35.6 ± 8.1
HA/ARG/DXS/ARG /SPARC/ARG/	350 ± 94	0.3 ± 0.23	43.9 ± 9.8

Figure 4.

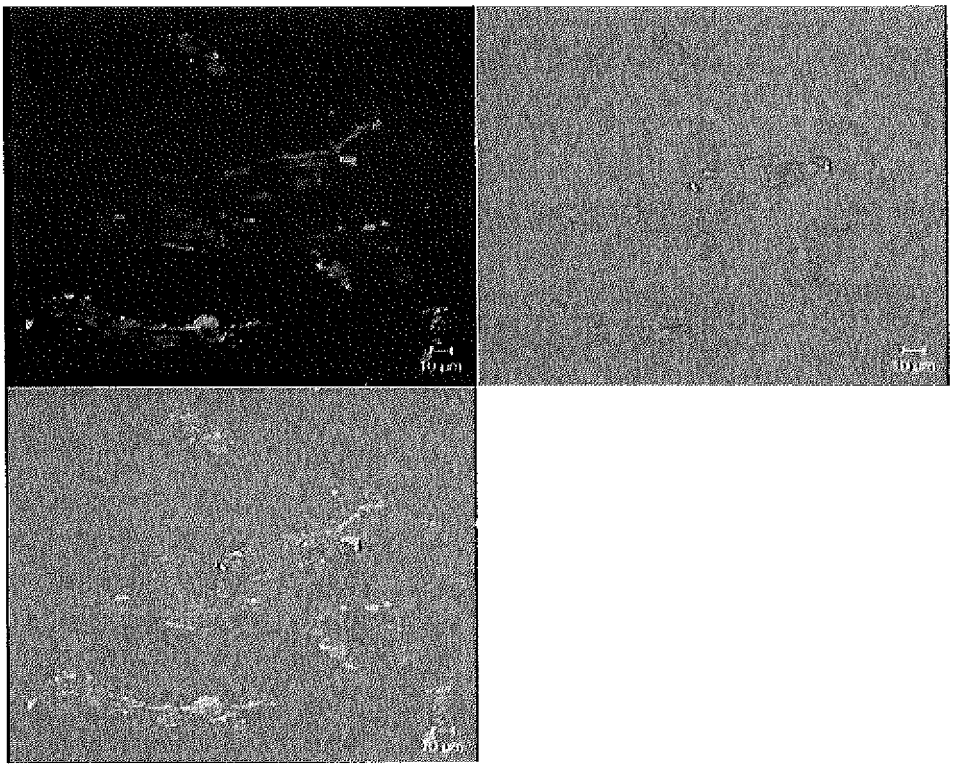


Figure 5

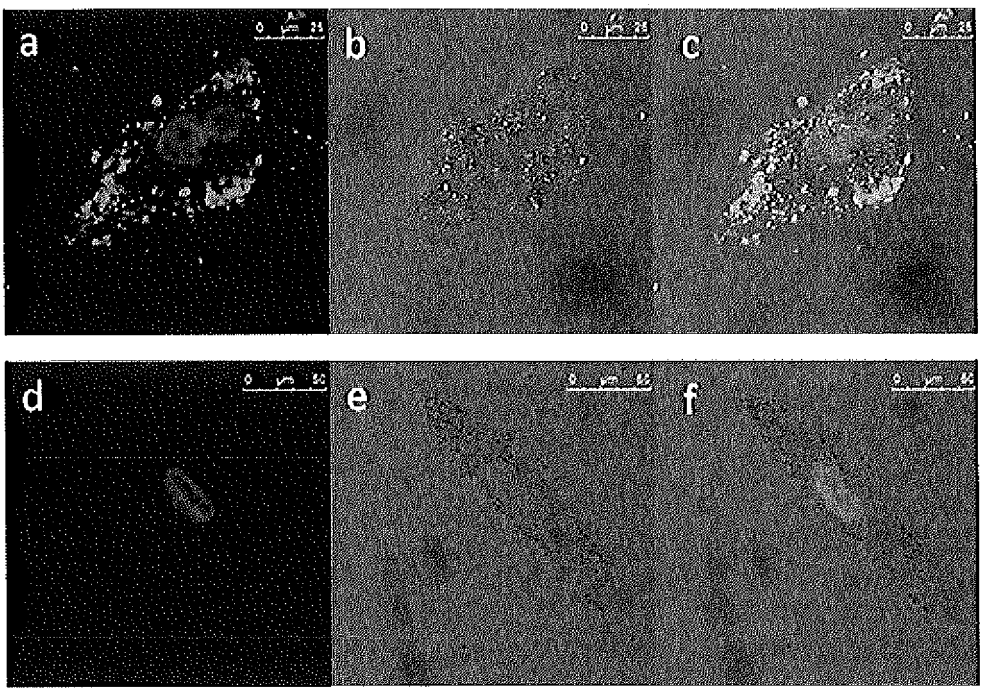


Figure 6

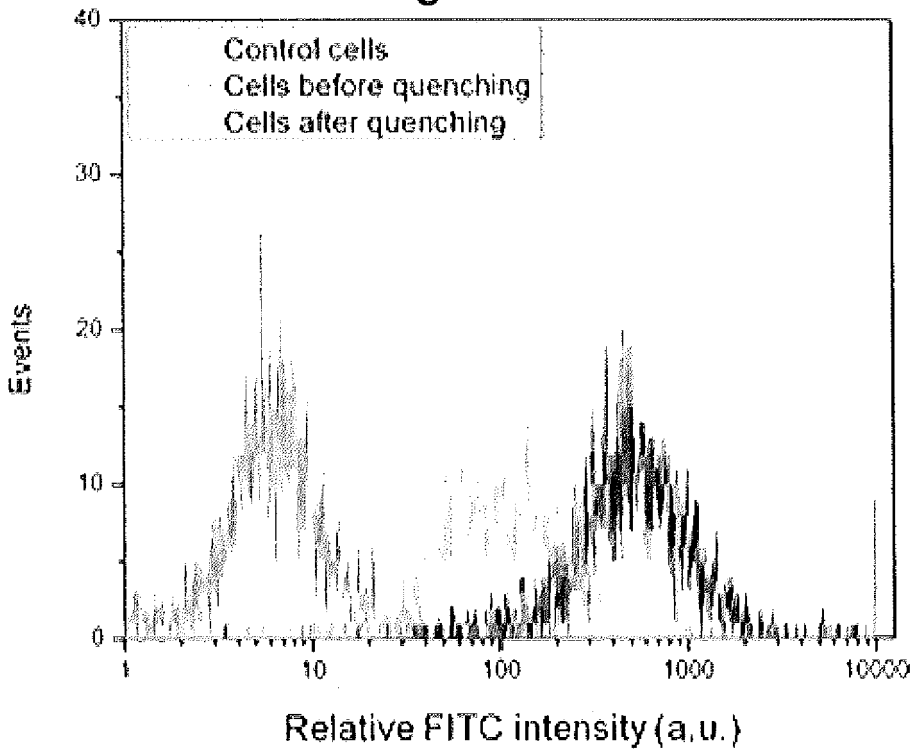


Figure 7

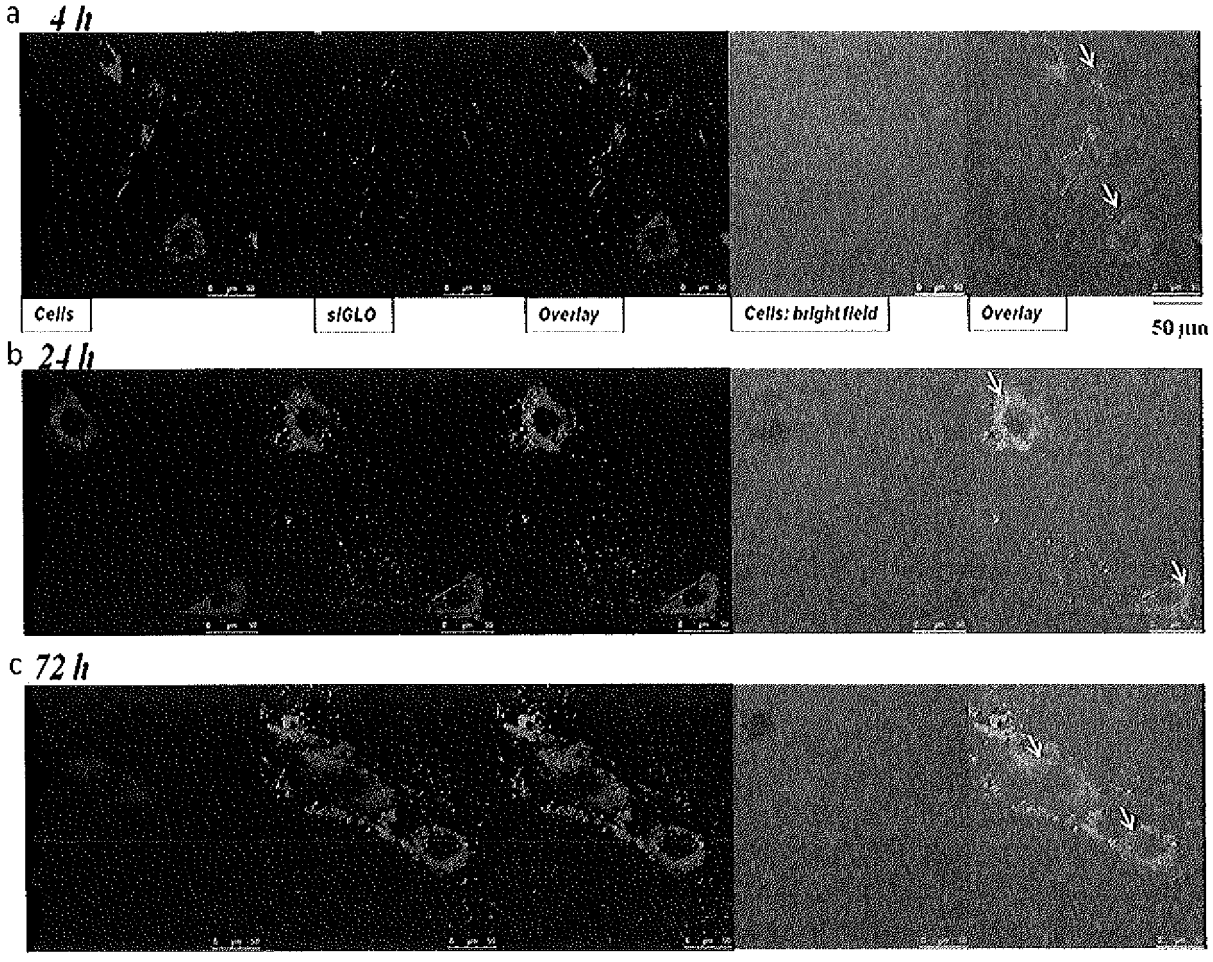


Figure 8

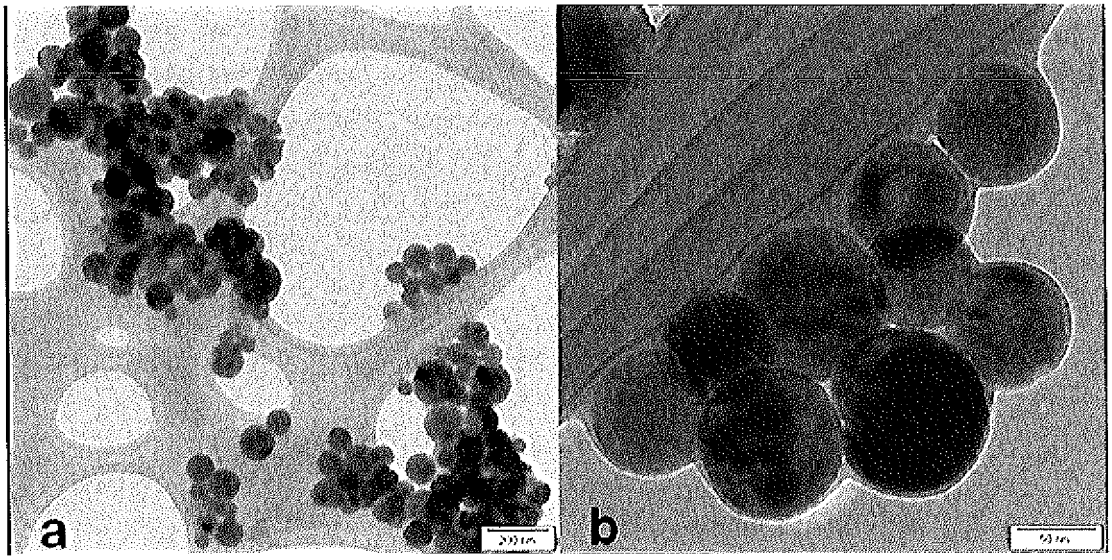


Figure 9

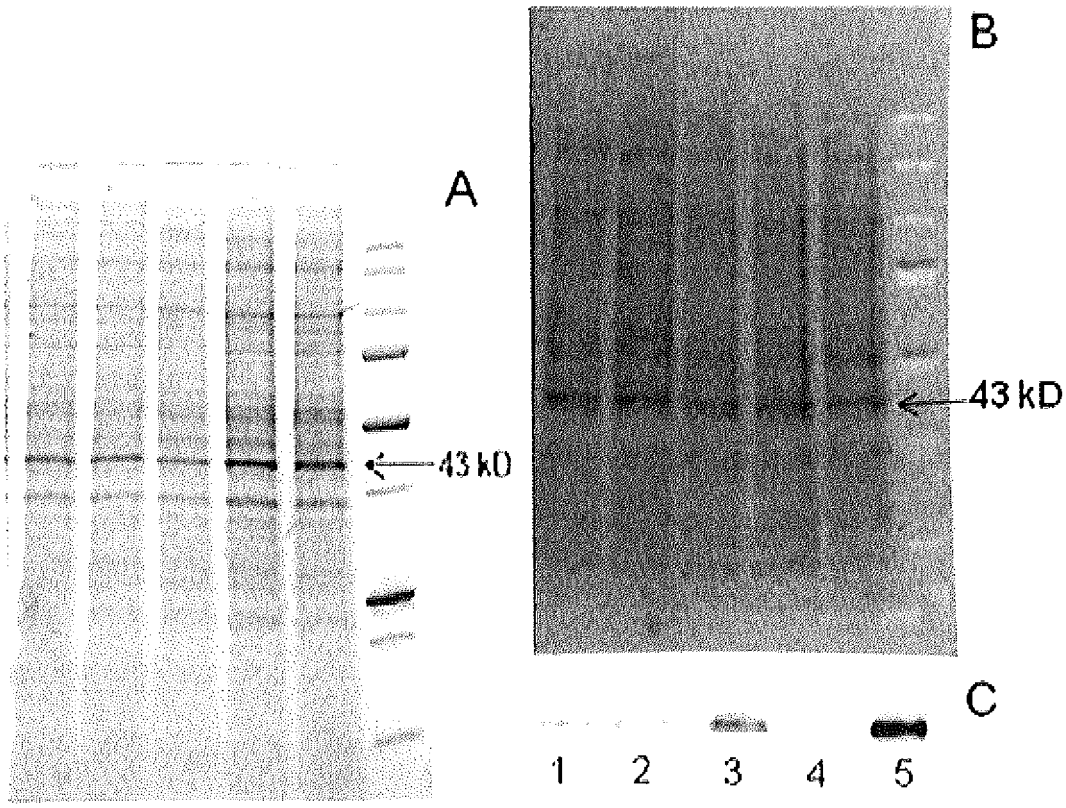
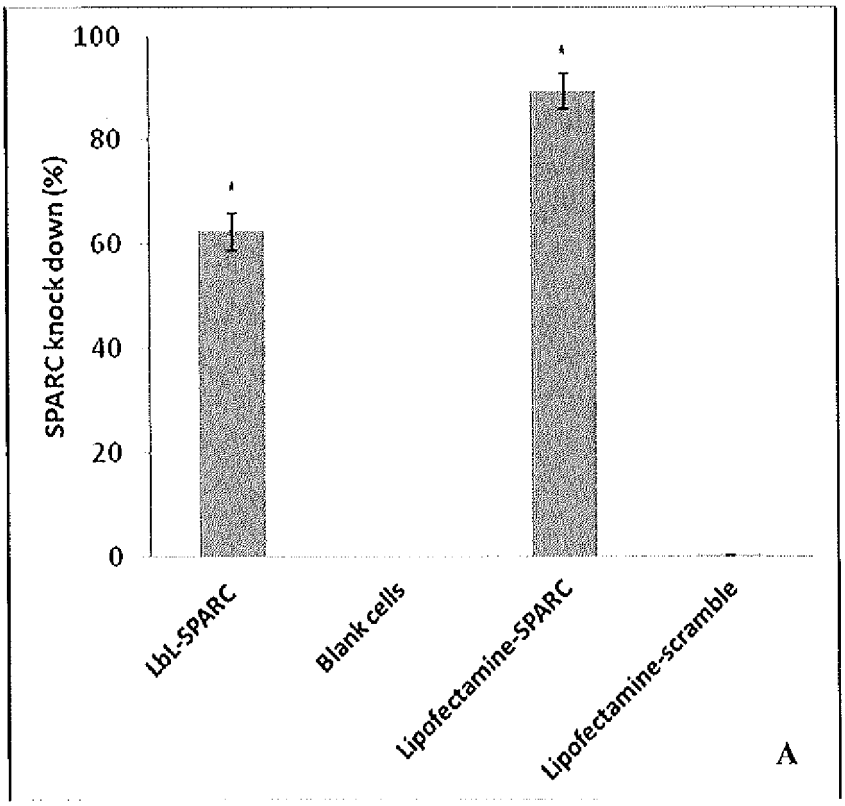
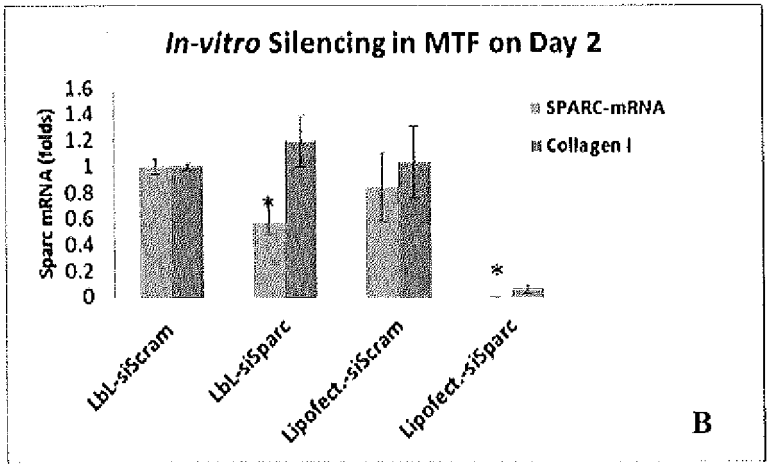


Figure 10


100
80
60
40
20
0
SPARC knock down (%)
LbL-SPARC
Blank cells
Lipofectamine-SPARC
Lipofectamine-scramble
A


In-vitro Silencing in MTF on Day 2
Sparc mRNA (folds)
1.6
1.4
1.2
1
0.8
0.6
0.4
0.2
0
SPARC-mRNA
Collagen I
LbL-siScram
LbL-siSparc
Lipofect.-siScram
Lipofect.-siSparc
B

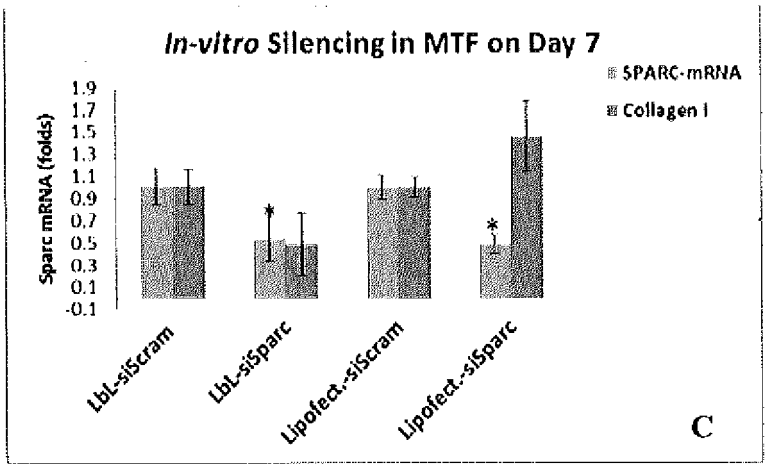
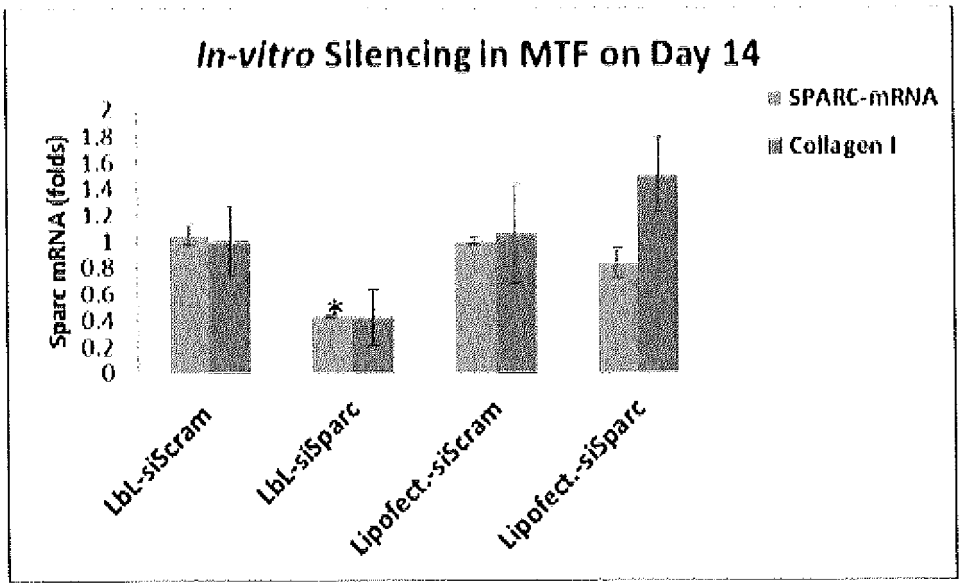

In-vitro Silencing in MTF on Day 7
Sparc mRNA (folds)
1.9
1.7
1.5
1.3
1.1
0.9
0.7
0.5
0.3
0.1
-0.1
SPARC-mRNA
Collagen I
LbL-siScram
LbL-siSparc
Lipofect.-siScram
Lipofect.-siSparc
C

Figure 10 (continued)



D

Figure 11

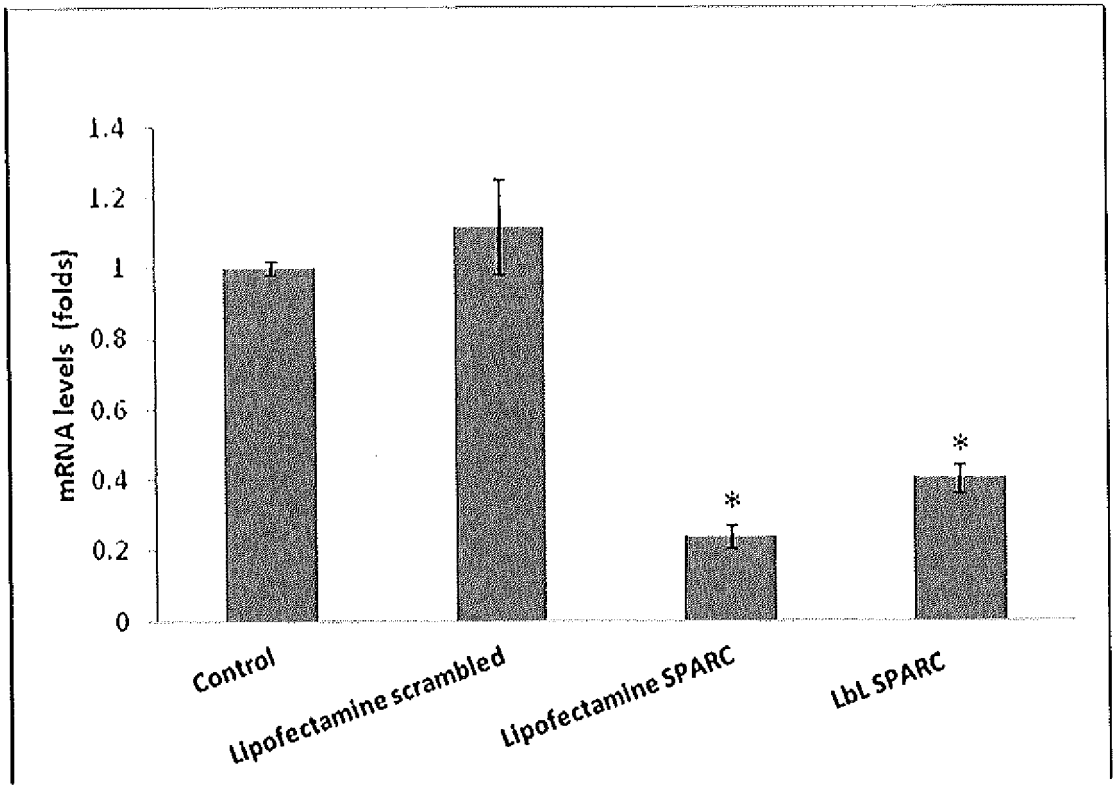
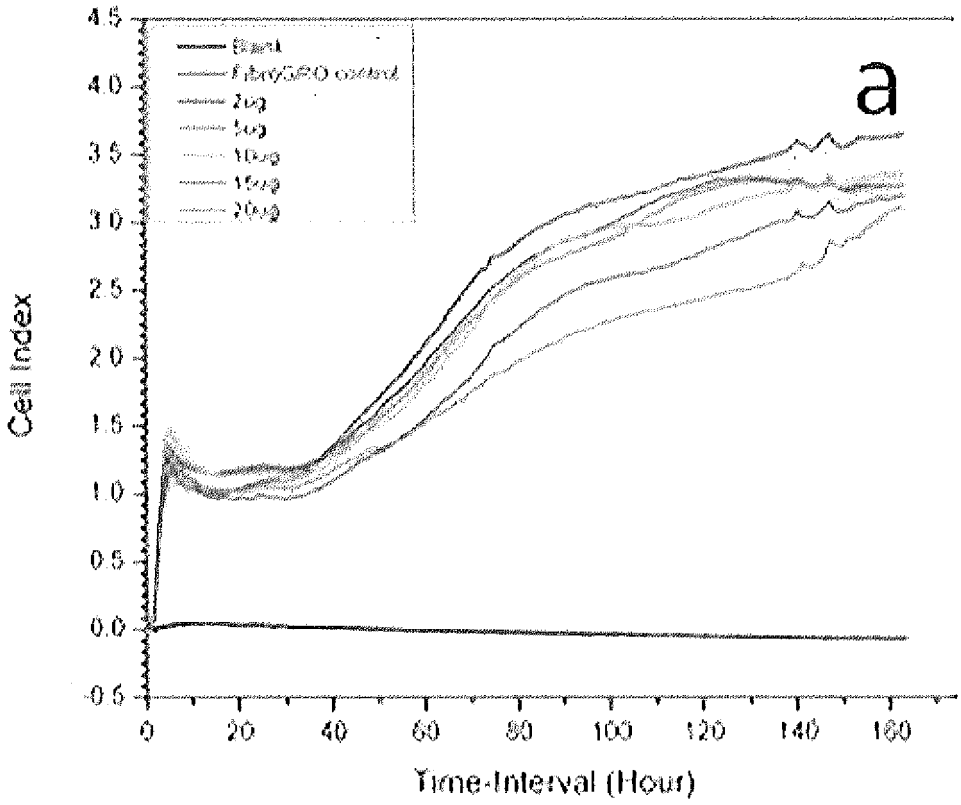


Figure 12


a
Cell Index
Time-Interval (Hour)
4.5
4.0
3.5
3.0
2.5
2.0
1.5
1.0
0.5
0.0
-0.5
0
20
40
60
80
100
120
140
160

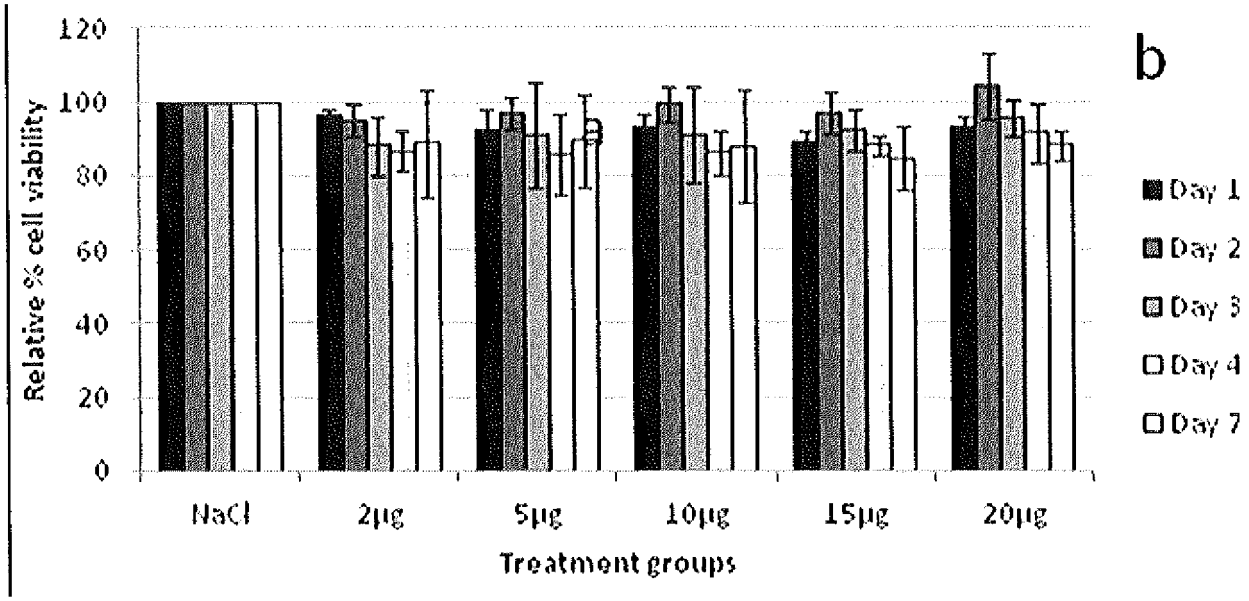
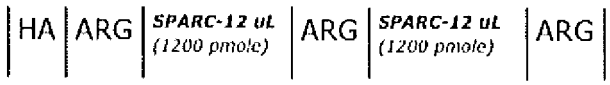
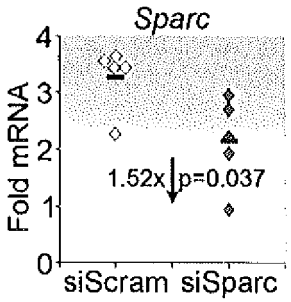
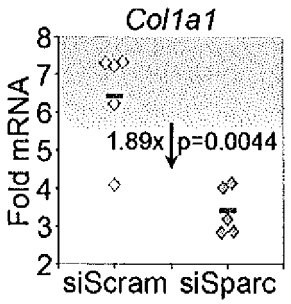

b
Relative % cell viability
Treatment groups
NaCl
2µg
5µg
10µg
15µg
20µg
Day 1
Day 2
Day 3
Day 4
Day 7
120
100
80
60
40
20
0

Figure 13

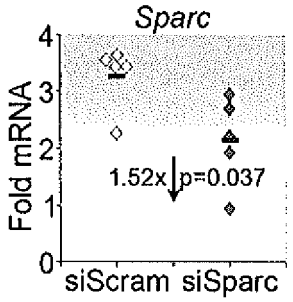

HA
ARG
SPARC-12 uL (1200 pmole)
ARG
SPARC-12 uL (1200 pmole)
ARG

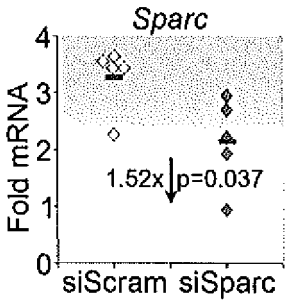
A


Sparc
Fold mRNA
0
1
2
3
4
1.52x
p=0.037
siScram
siSparc


Col1a1
Fold mRNA
2
3
4
5
6
7
8
1.89x
p=0.0044
siScram
siSparc

B


Sparc
Fold mRNA
0
1
2
3
4
1.52x
p=0.037
siScram
siSparc


Sparc
Fold mRNA
0
1
2
3
4
1.52x
p=0.037
siScram
siSparc