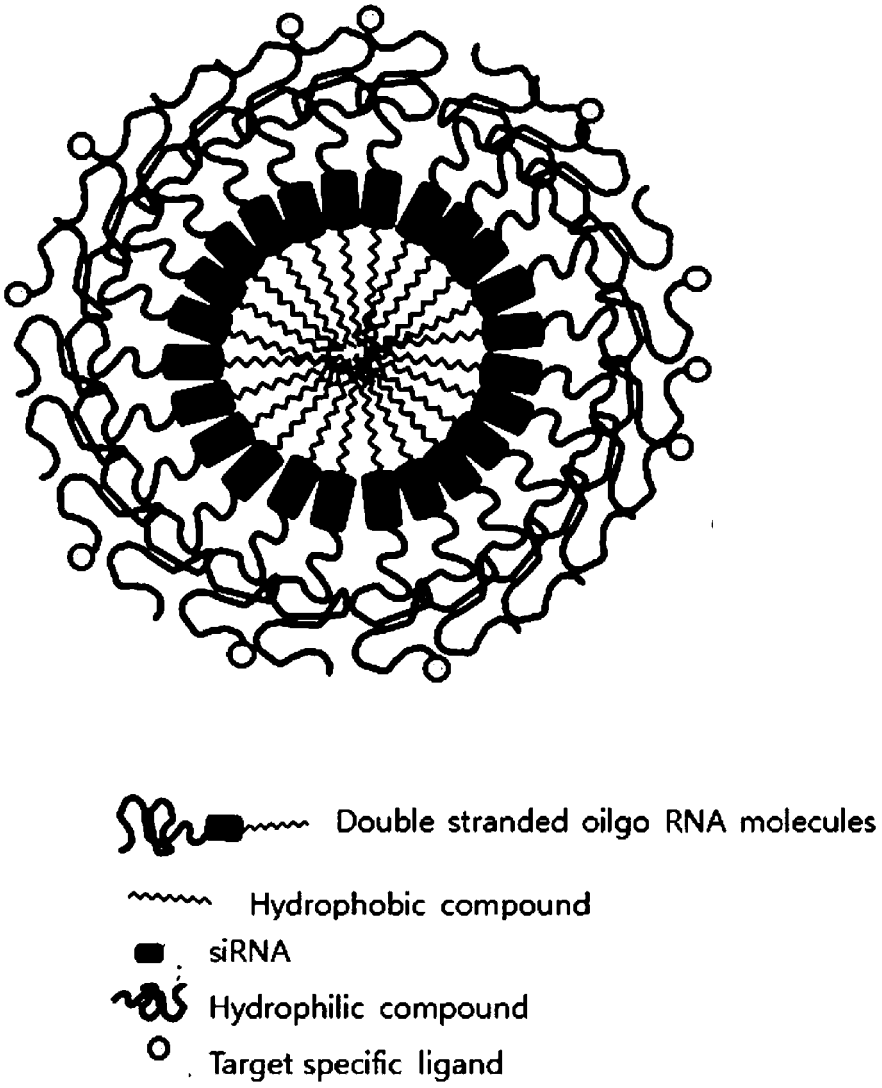
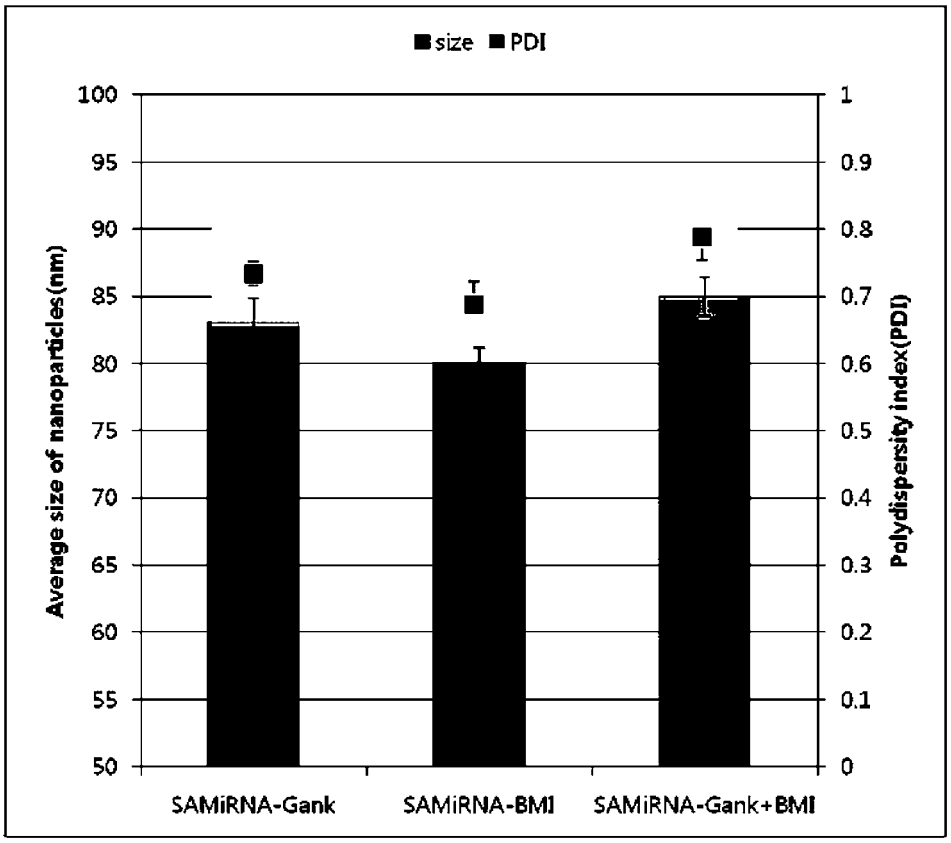
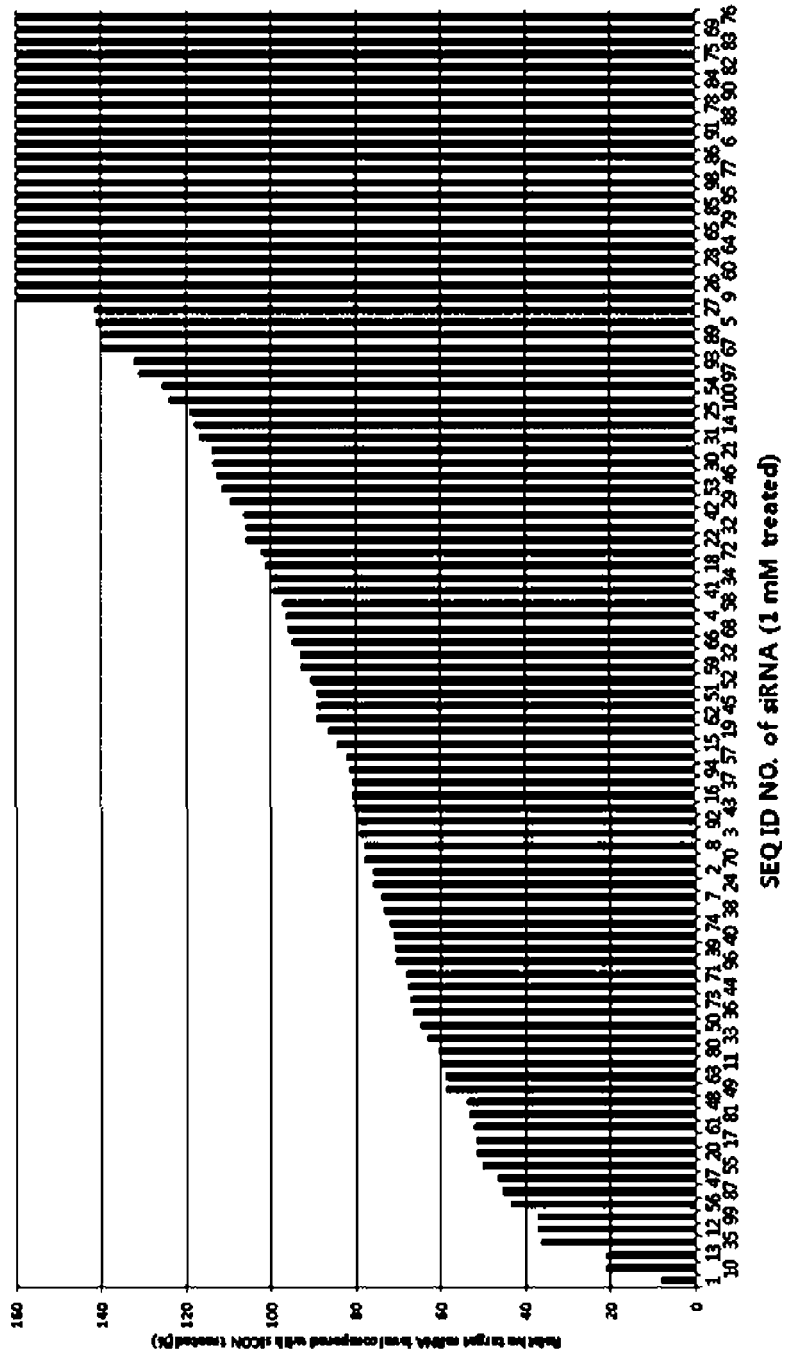
[Fig. 1]


Double stranded oilgo RNA molecules
Hydrophobic compound
siRNA
Hydrophilic compound
Target specific ligand

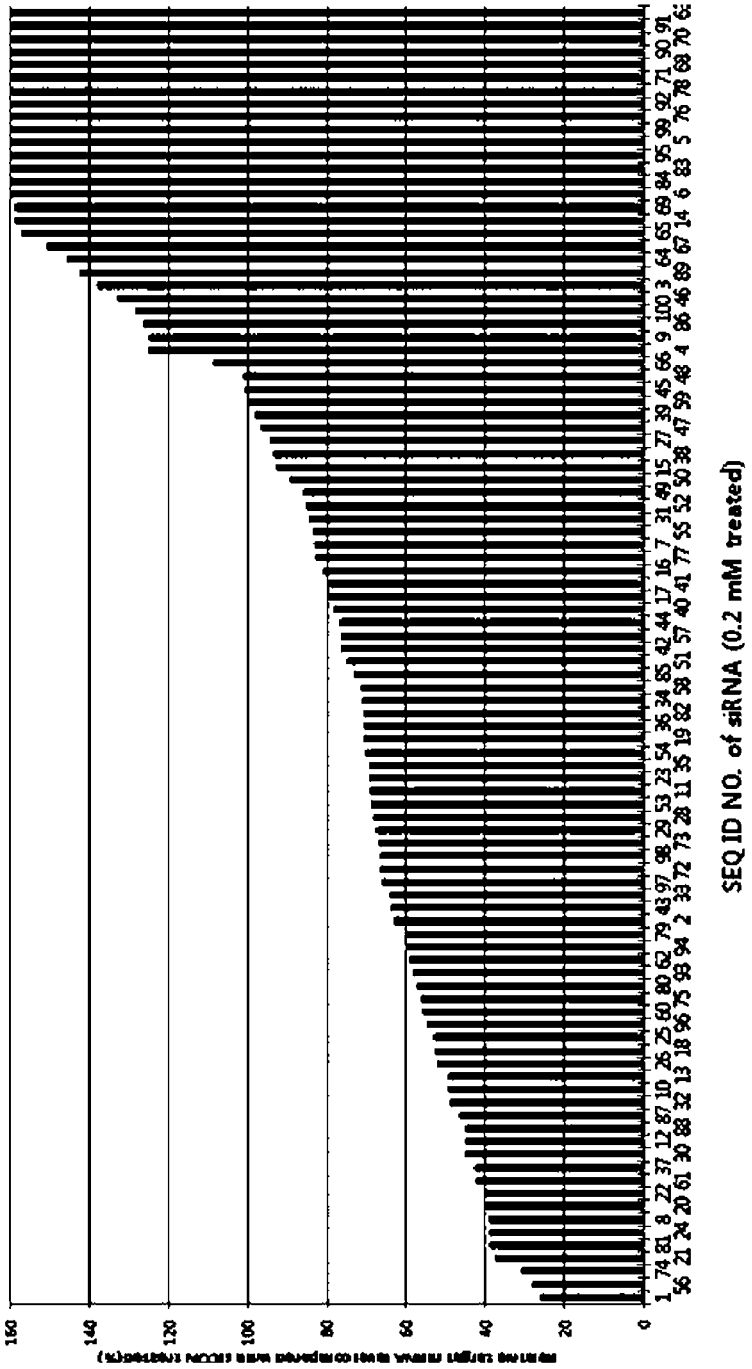
[Fig. 2]


size
PDI
Average size of nanoparticles(nm)
Polydispersity index(PDI)
100
95
90
85
80
75
70
65
60
55
50
1
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
SAMiRNA-Gank
SAMiRNA-BMI
SAMiRNA-Gank+BMI

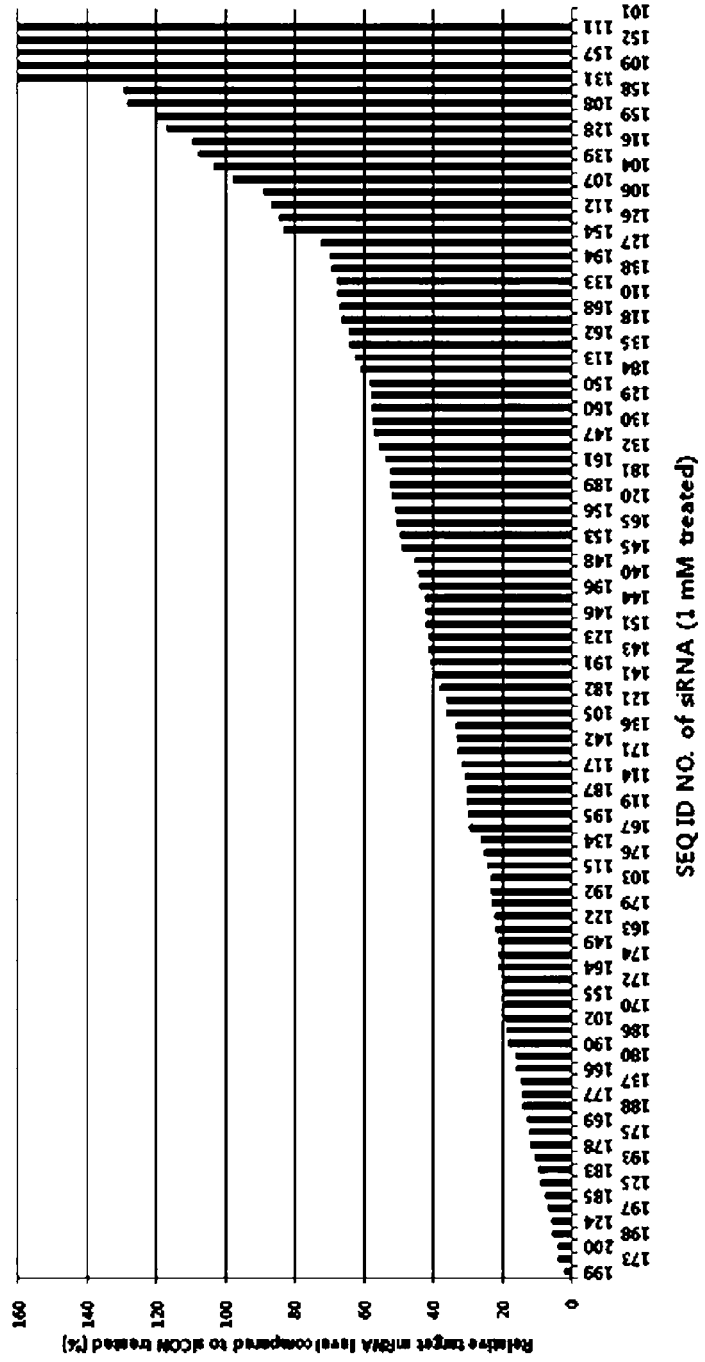
[Fig. 3]



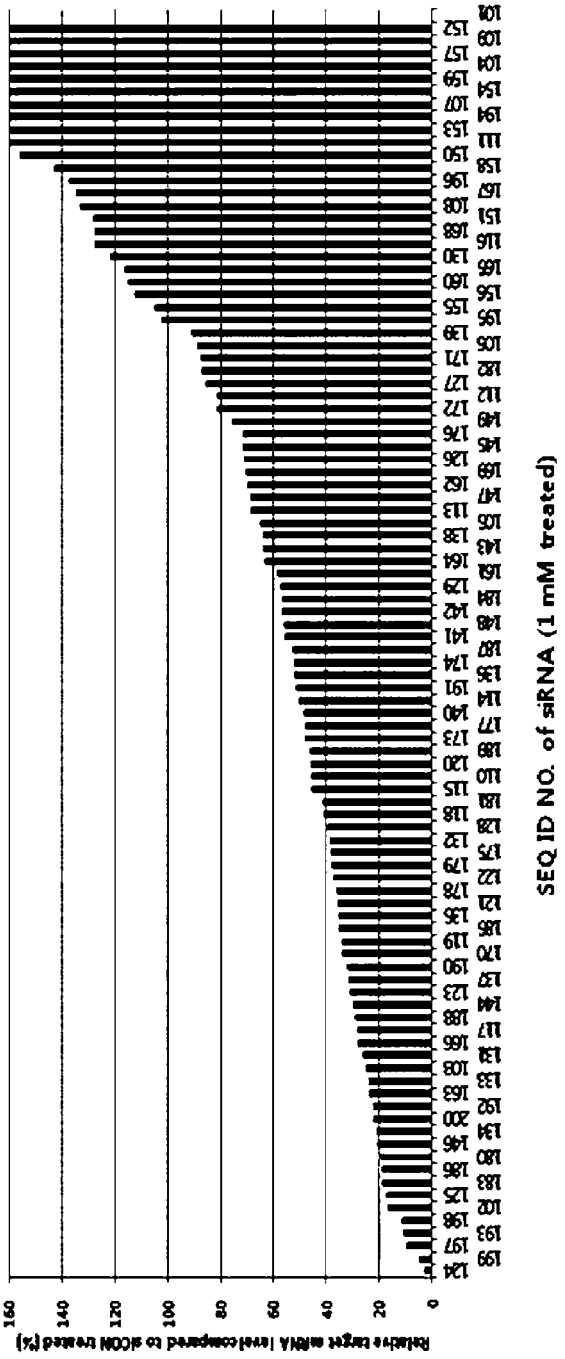
[Fig. 4]



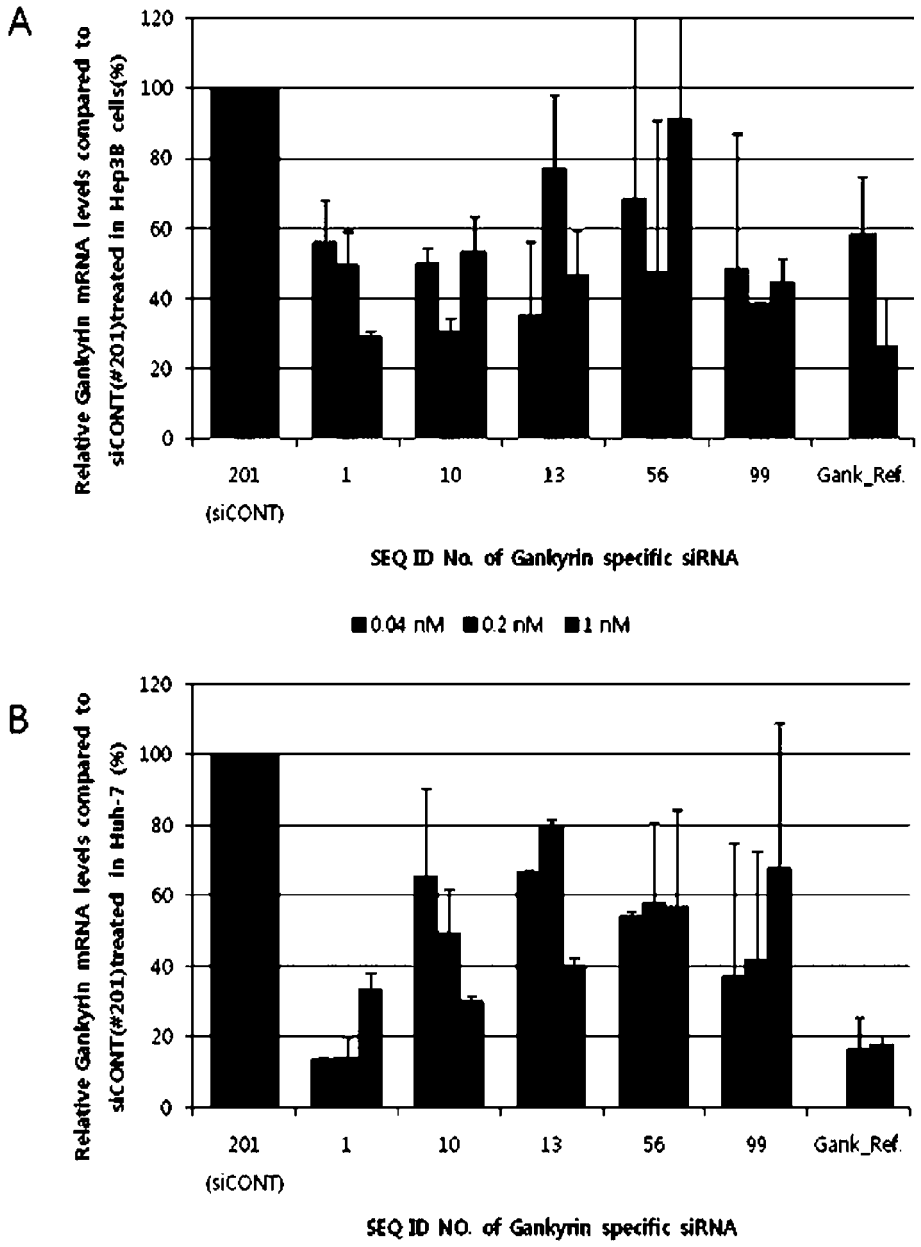
[Fig. 5]


SEQ ID NO. of siRNA (1 mM treated)
Relative target mRNA level compared to siCon treated (%)
0
20
40
60
80
100
120
140
160

[Fig. 6]

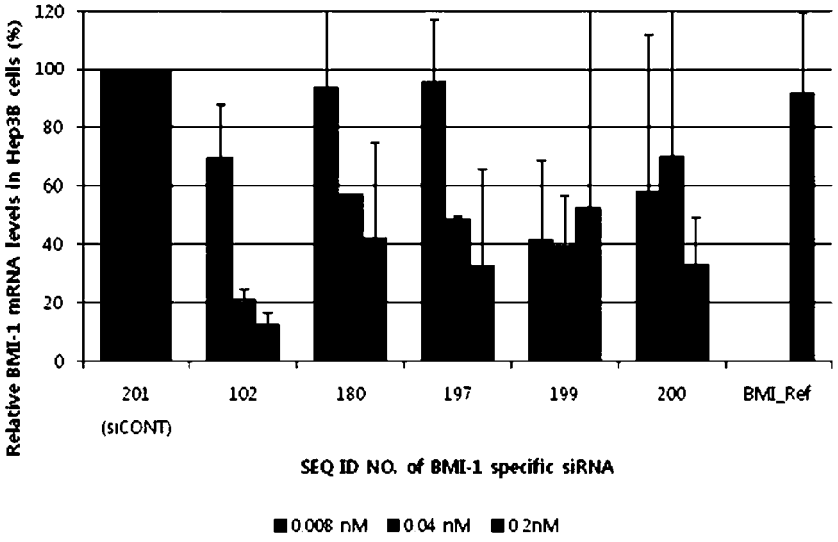

Relative target mRNA level compared to siCON treated (%)
0
20
40
60
80
100
120
140
160
SEQ ID NO. of siRNA (1 mM treated)

[Fig. 7]

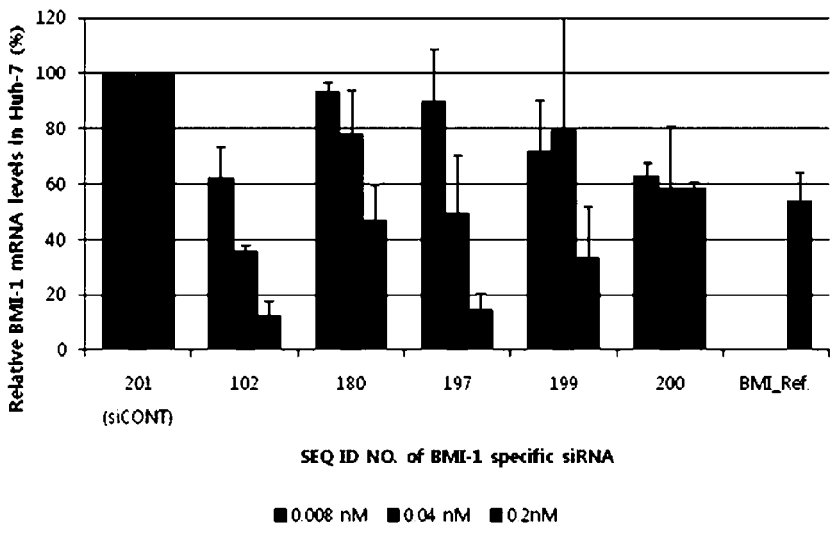

A
Relative Gankyrin mRNA levels compared to siCONT(#201)treated in Hep3B cells(%)
120
100
80
60
40
20
0
201 (siCONT)
1
10
13
56
99
Gank_Ref.
SEQ ID No. of Gankyrin specific siRNA
0.04 nM
0.2 nM
1 nM
B
Relative Gankyrin mRNA levels compared to siCONT(#201)treated in Huh-7 (%)
120
100
80
60
40
20
0
201 (siCONT)
1
10
13
56
99
Gank_Ref.
SEQ ID NO. of Gankyrin specific siRNA

[Fig. 8]

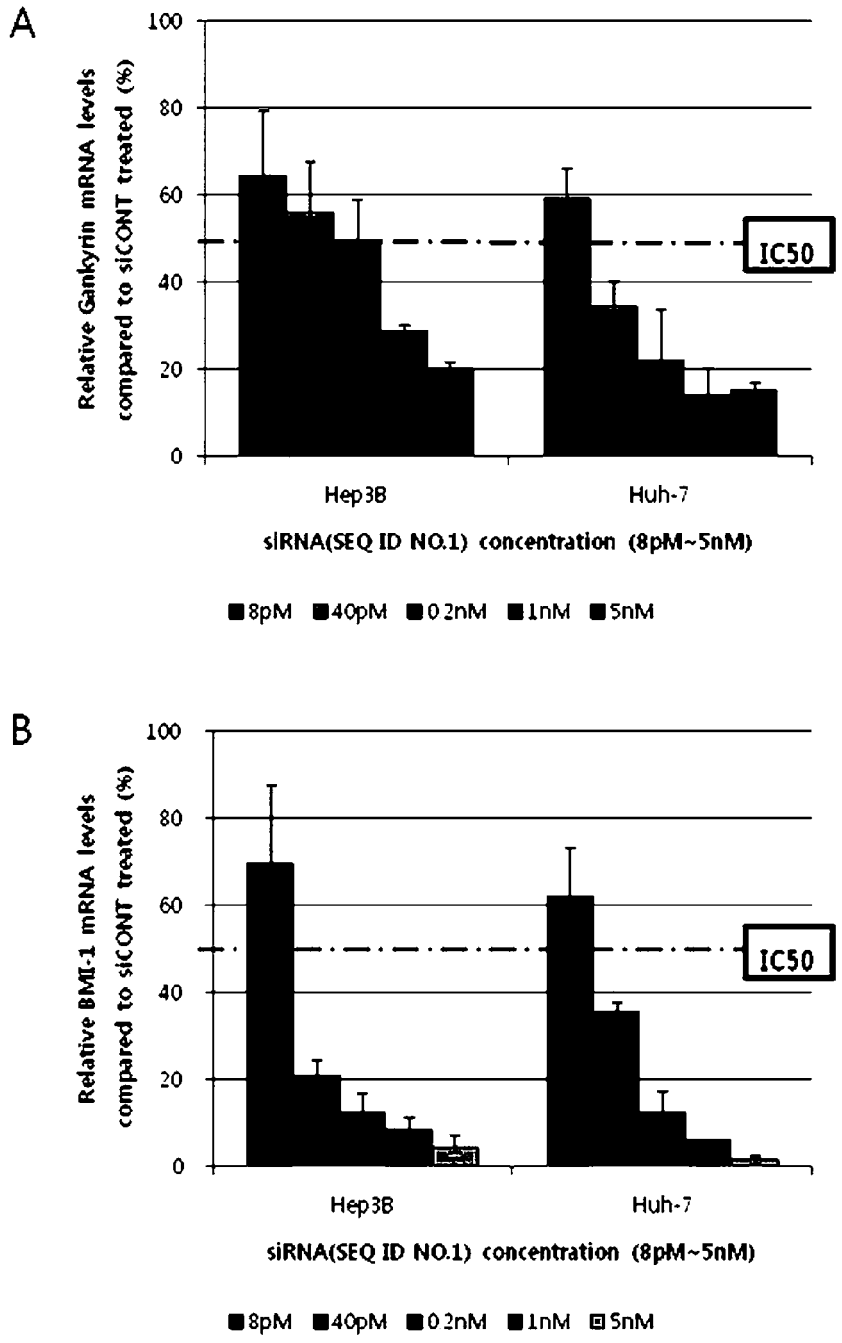
A


Relative BMI-1 mRNA levels in Hep3B cells (%)
120
100
80
60
40
20
0
201 (siCONT)
102
180
197
199
200
BMI_Ref
SEQ ID NO. of BMI-1 specific siRNA
0.008 nM
0.04 nM
0.2nM

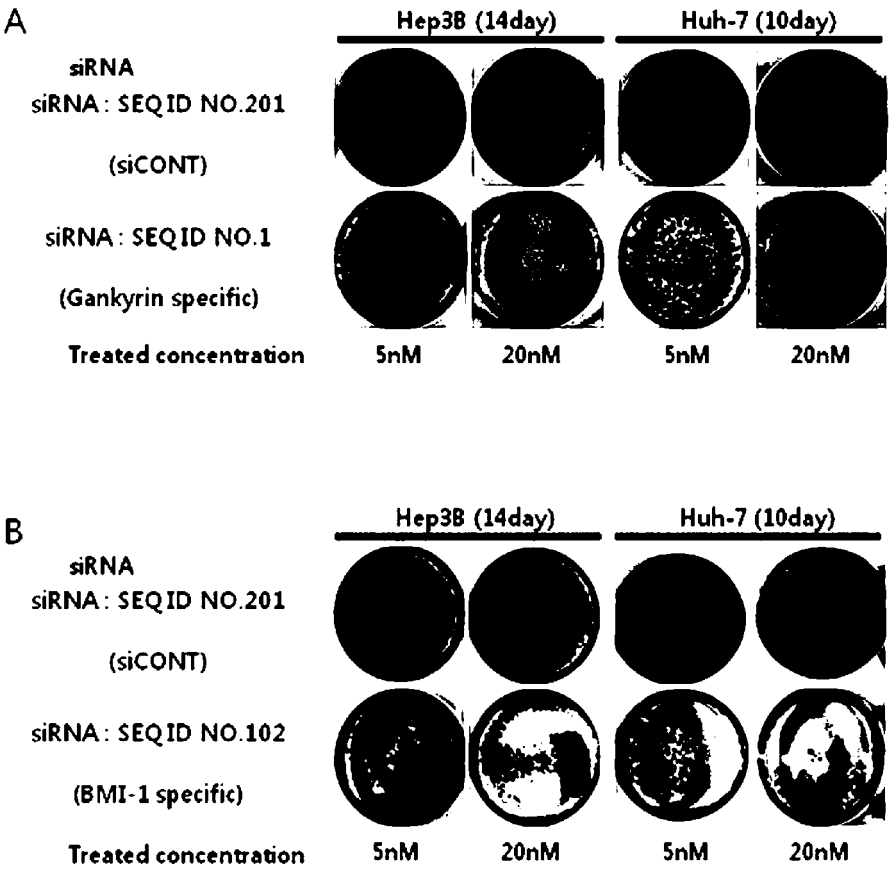
B


Relative BMI-1 mRNA levels in Huh-7 (%)
120
100
80
60
40
20
0
201 (siCONT)
102
180
197
199
200
BMI_Ref.
SEQ ID NO. of BMI-1 specific siRNA
0.008 nM
0.04 nM
0.2nM

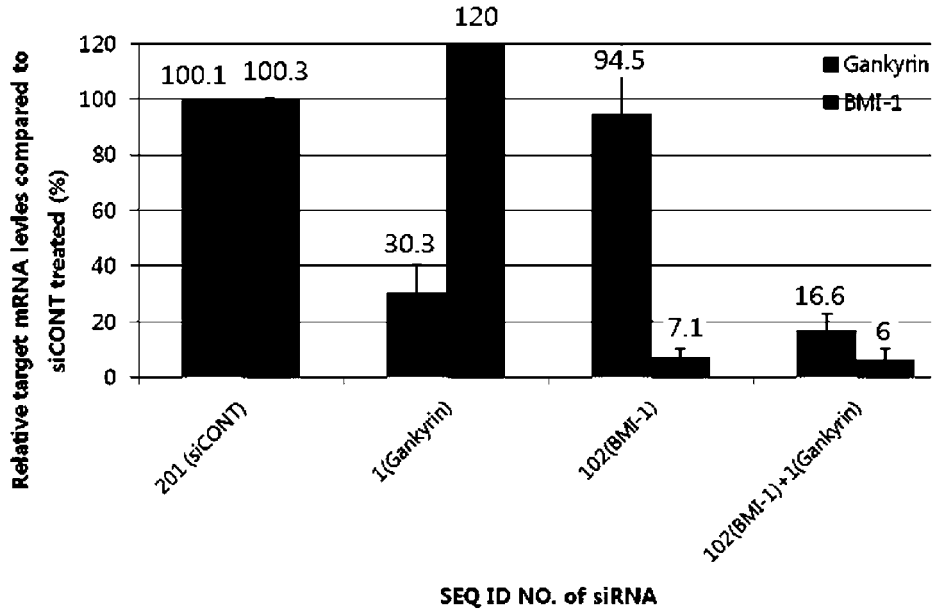
[Fig. 9]


A
Relative Gankyrin mRNA levels compared to siCONT treated (%)
100
80
60
40
20
0
IC50
Hep3B
Huh-7
siRNA(SEQ ID NO.1) concentration (8pM~5nM)
8pM 40pM 0.2nM 1nM 5nM
B
Relative BMI-1 mRNA levels compared to siCONT treated (%)
100
80
60
40
20
0
IC50
Hep3B
Huh-7
siRNA(SEQ ID NO.1) concentration (8pM~5nM)
8pM 40pM 0.2nM 1nM 5nM

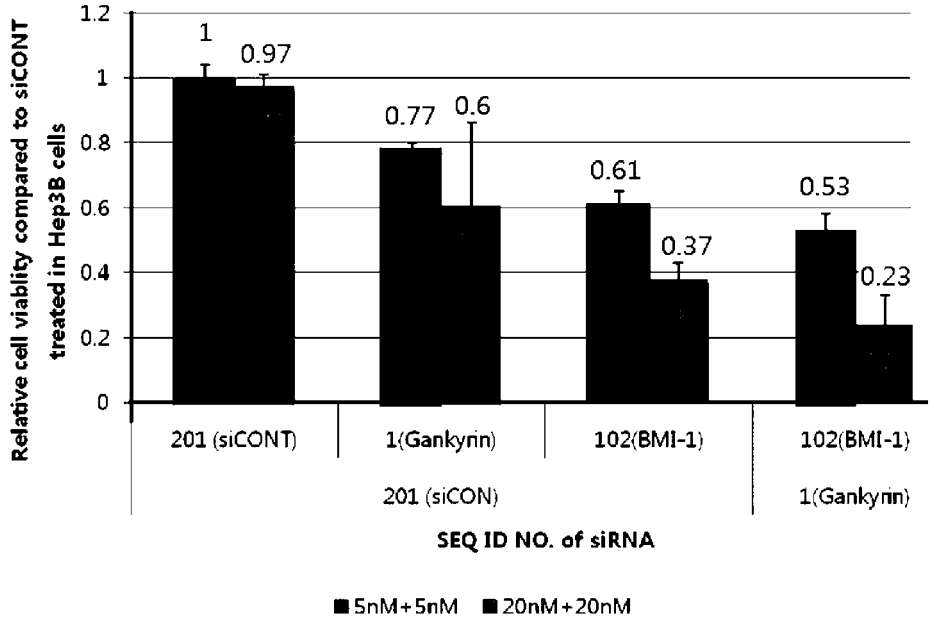
[Fig. 10]


A
Hep3B (14day)
Huh-7 (10day)
siRNA
siRNA : SEQ ID NO.201
(siCONT)
siRNA : SEQ ID NO.1
(Gankyrin specific)
Treated concentration
5nM
20nM
5nM
20nM
B
Hep3B (14day)
Huh-7 (10day)
siRNA
siRNA : SEQ ID NO.201
(siCONT)
siRNA : SEQ ID NO.102
(BMI-1 specific)
Treated concentration
5nM
20nM
5nM
20nM

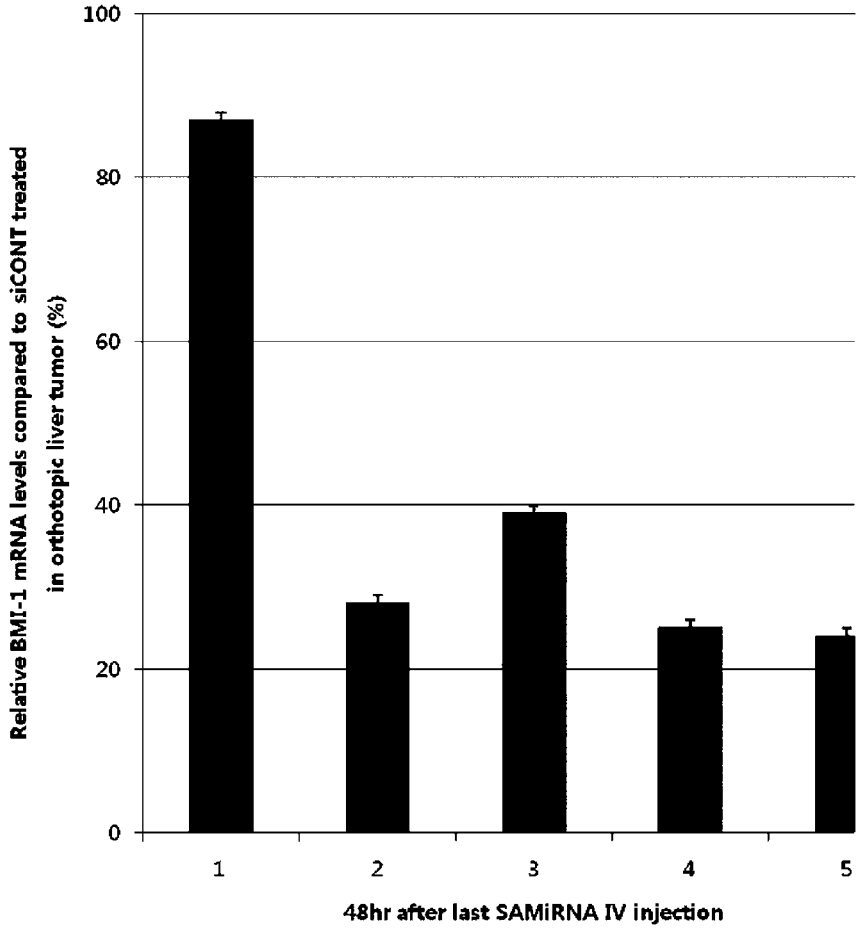
[Fig. 11]


120
120
100
80
60
40
20
0
100.1
100.3
30.3
120
94.5
7.1
16.6
6
Gankyrin
BMI-1
Relative target mRNA levles compared to siCONT treated (%)
201 (siCONT)
1(Gankyrin)
102(BMI-1)
102(BMI-1)+1(Gankyrin)
SEQ ID NO. of siRNA

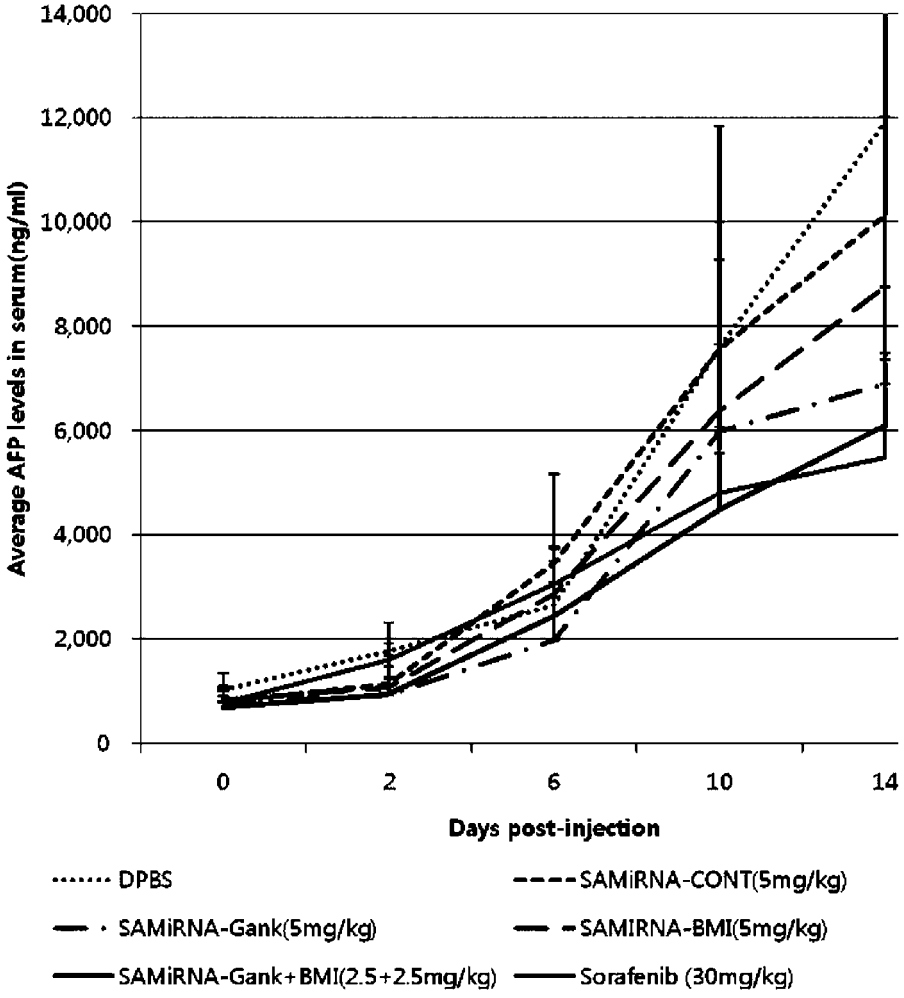
[Fig. 12]


Relative cell viability compared to siCONT treated in Hep3B cells
1.2
1
0.8
0.6
0.4
0.2
0
1
0.97
0.77
0.6
0.61
0.37
0.53
0.23
201 (siCONT)
1(Gankyrin)
102(BMI-1)
102(BMI-1)
201 (siCON)
1(Gankyrin)
SEQ ID NO. of siRNA
5nM+5nM
20nM+20nM

[Fig. 13]


Relative BMI-1 mRNA levels compared to siCONT treated in orthotopic liver tumor (%)
100
80
60
40
20
0
1
2
3
4
5
48hr after last SAMiRNA IV injection

[Fig. 14]


14,000
12,000
10,000
8,000
6,000
4,000
2,000
0
Average AFP levels in serum(ng/ml)
0
2
6
10
14
Days post-injection
DPBS
SAMiRNA-CONT(5mg/kg)
SAMiRNA-Gank(5mg/kg)
SAMiRNA-BMI(5mg/kg)
SAMiRNA-Gank+BMI(2.5+2.5mg/kg)
Sorafenib (30mg/kg)