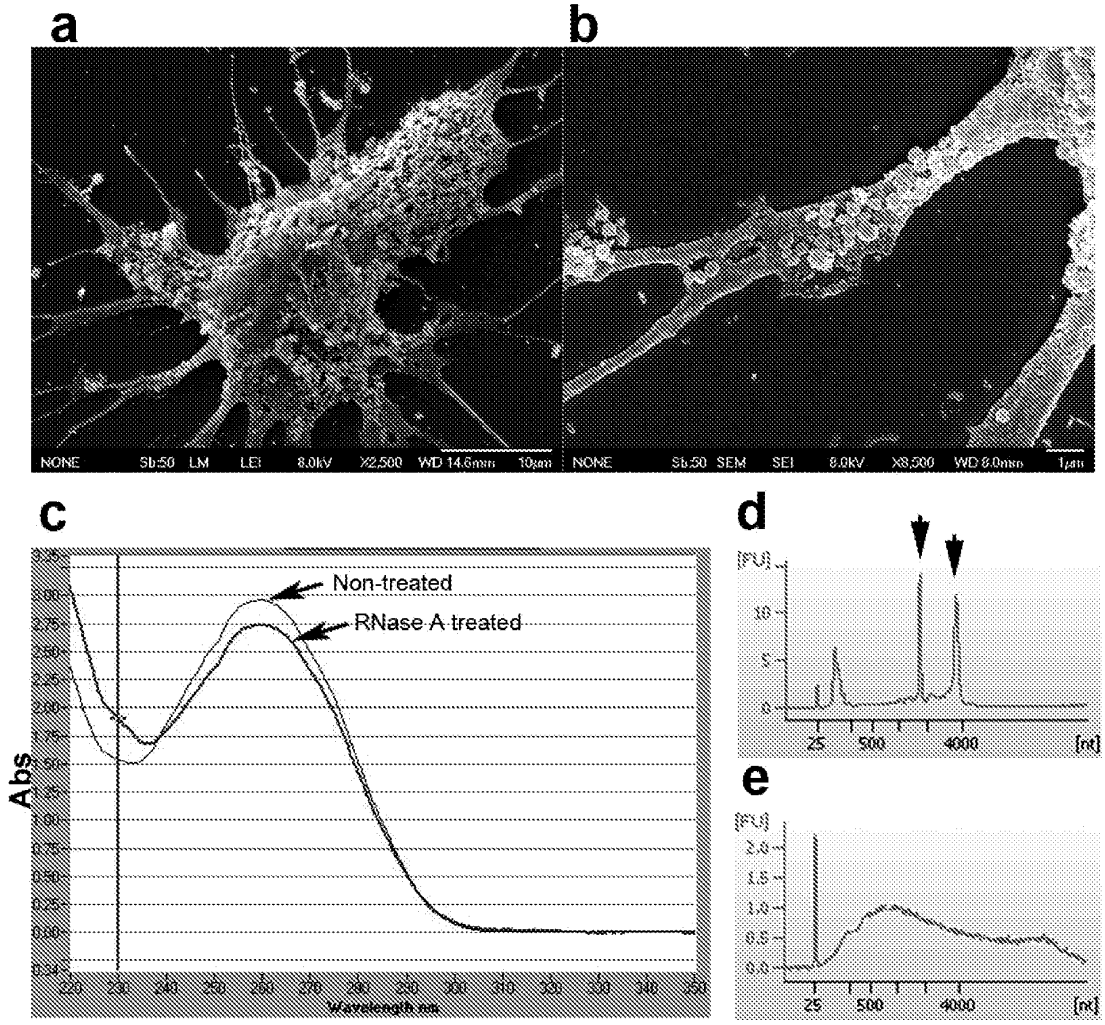

a
b
NONE Sb:50 LM LEI 8.0kV X2,500 WD 14.6mm 10μm
NONE Sb:50 SEM SEI 8.0kV X8,500 WD 8.0mm 1μm
c
Non-treated
RNase A treated
Abs
Wavelength nm
d
[FU]
25 500 4000 [nt]
e
[FU]
25 500 4000 [nt]

FIG. 1 a-e

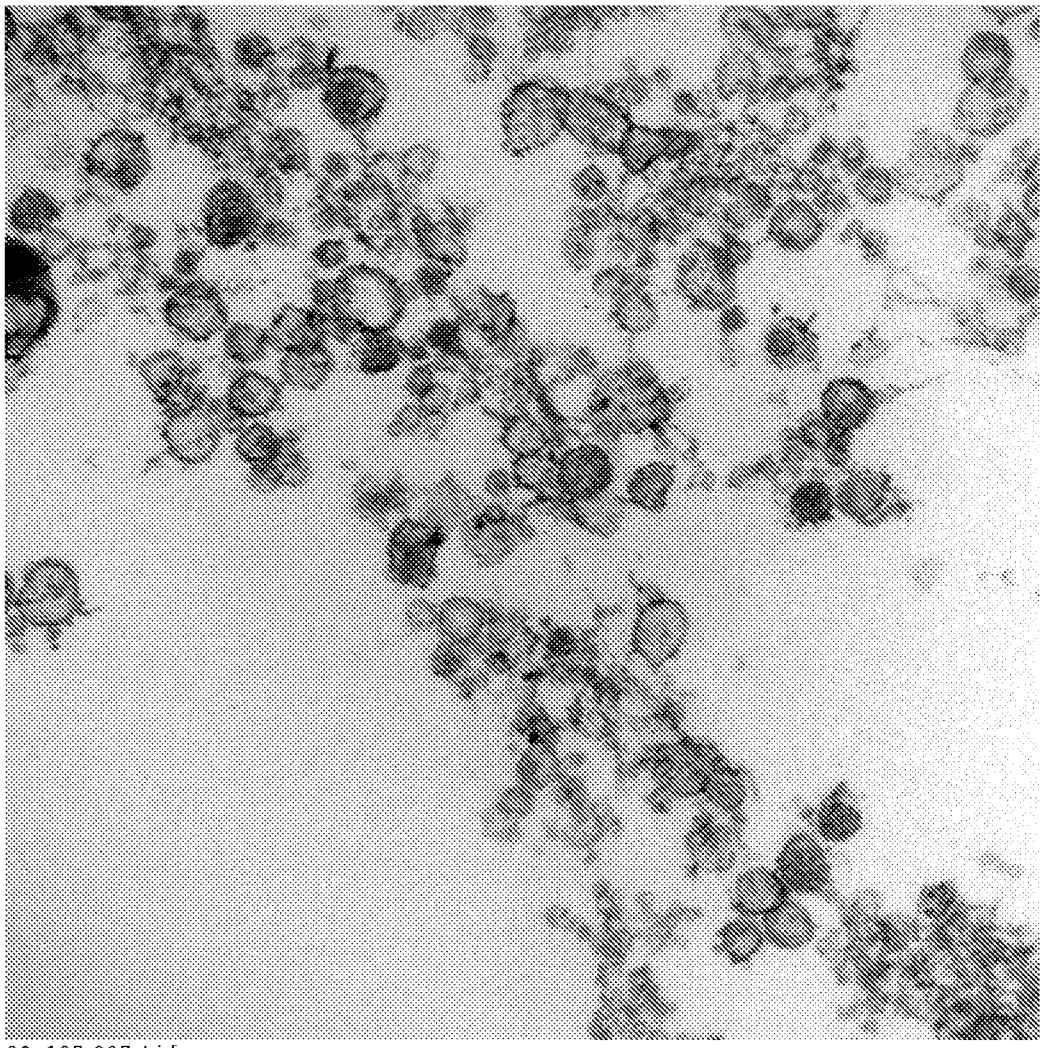

08-197_007.tif
08-197
EXO's in Fix 17/7
Print Mag: 93500x @ 7.0 in
10:43 08/29/08
Microscopist: HLM
100 nm
HV=60.0kV
Direct Mag: 50000x

FIG. 1 f

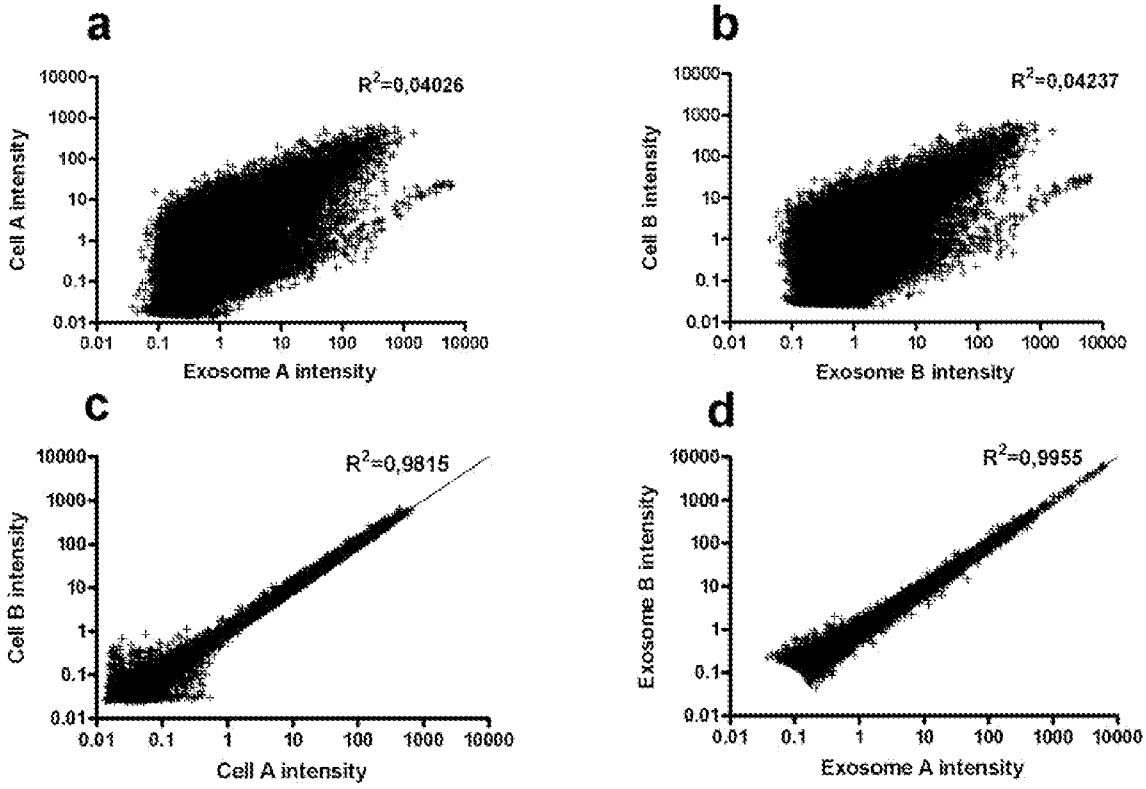

a
R^2=0,04026
Cell A intensity
Exosome A intensity
b
R^2=0,04237
Cell B intensity
Exosome B intensity
c
R^2=0,9815
Cell B intensity
Cell A intensity
d
R^2=0,9955
Exosome B intensity
Exosome A intensity
0.01
0.1
1
10
100
1000
10000

FIG. 2

Fig. 3a

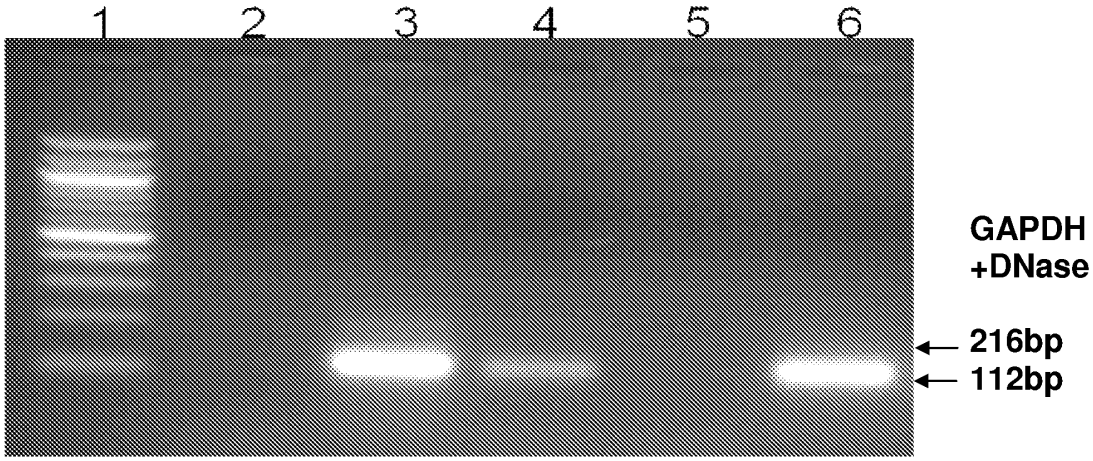

1
2
3
4
5
6
GAPDH
+DNase
216bp
112bp

Fig. 3b

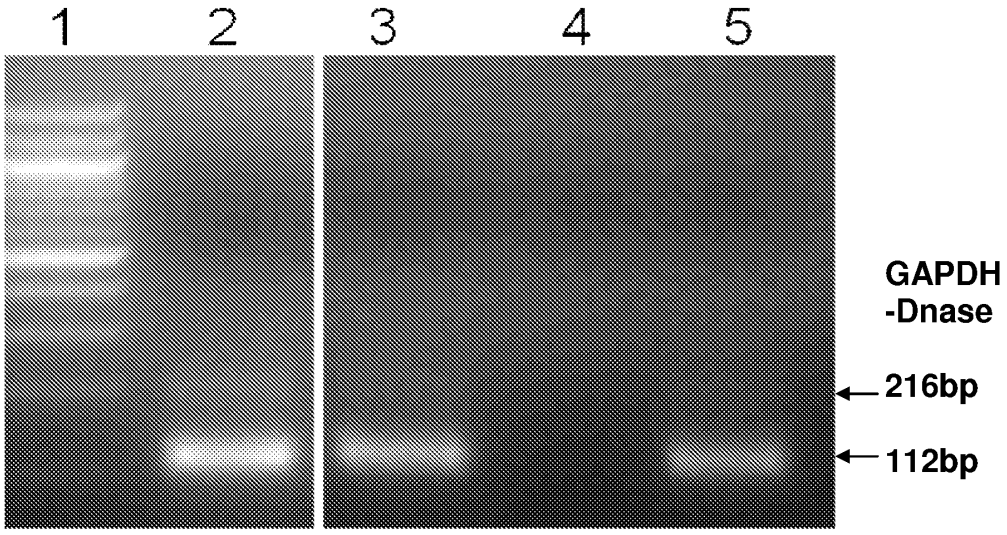

1
2
3
4
5
GAPDH
-Dnase
216bp
112bp

Fig. 3c

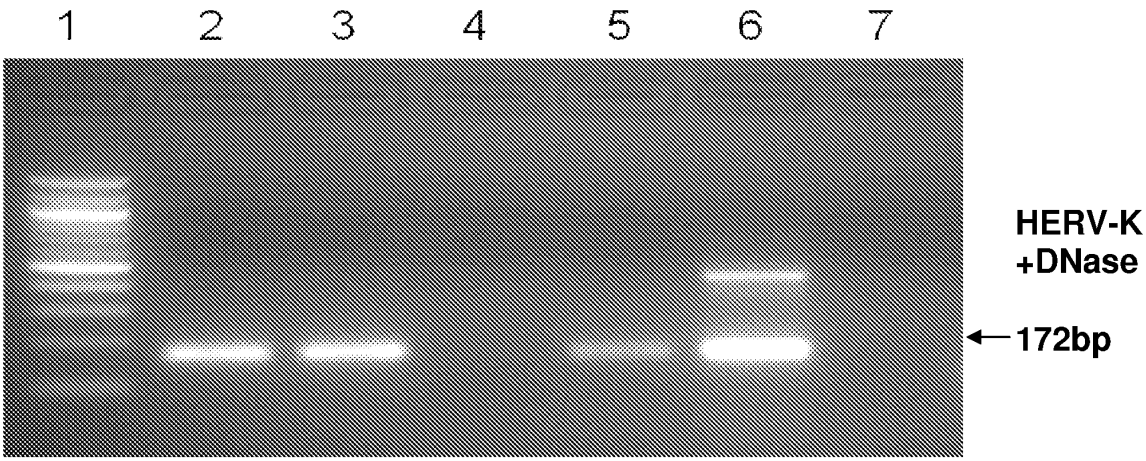


Fig. 3d

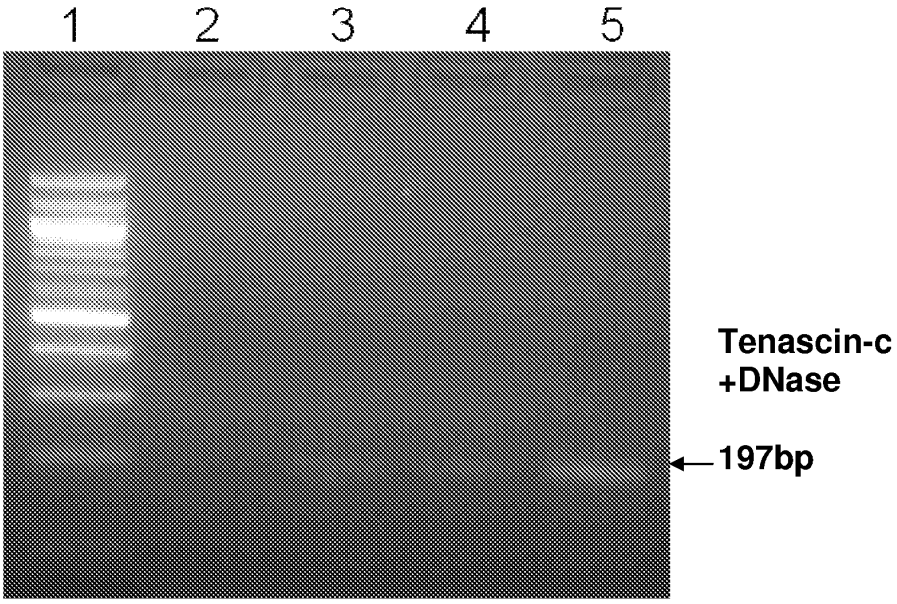


Fig. 3e

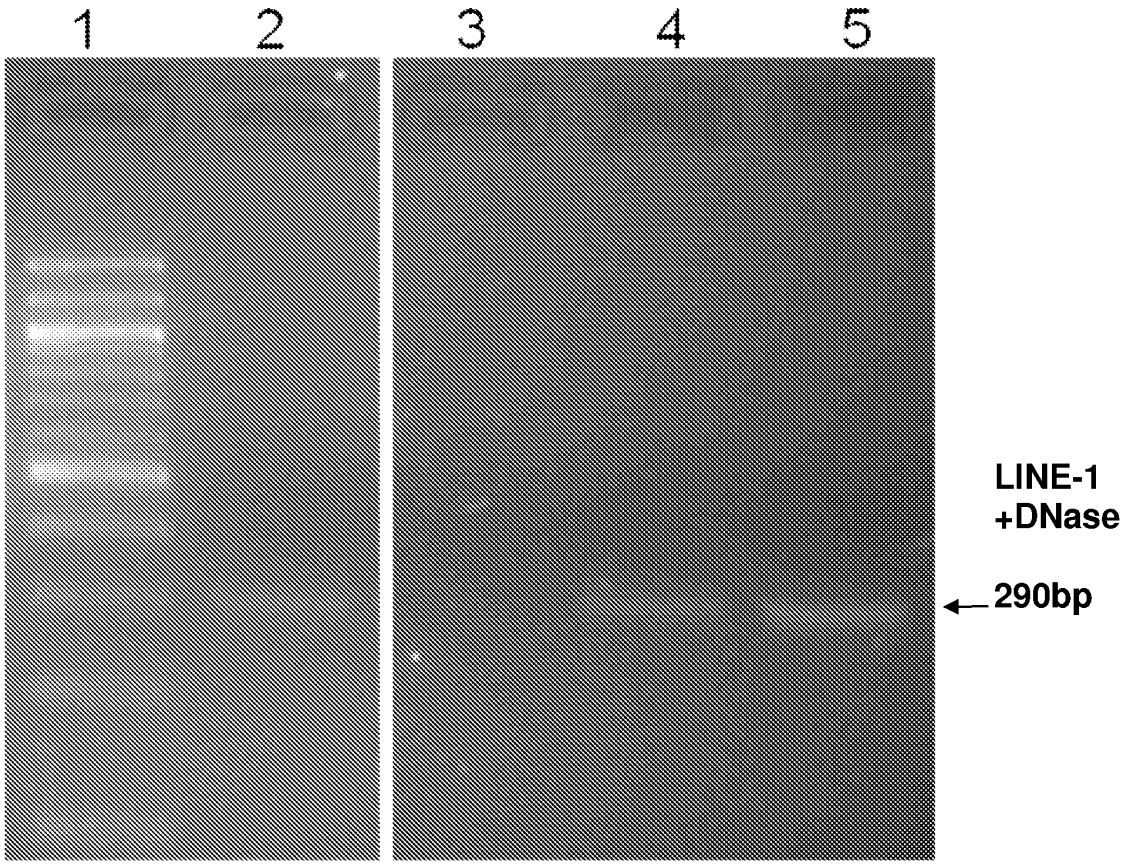


Fig. 3f

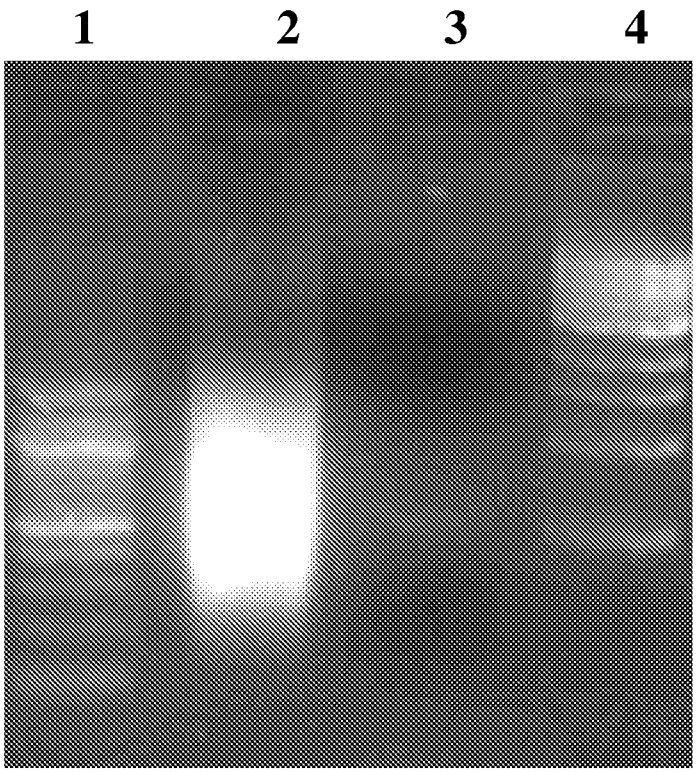


Fig. 3g

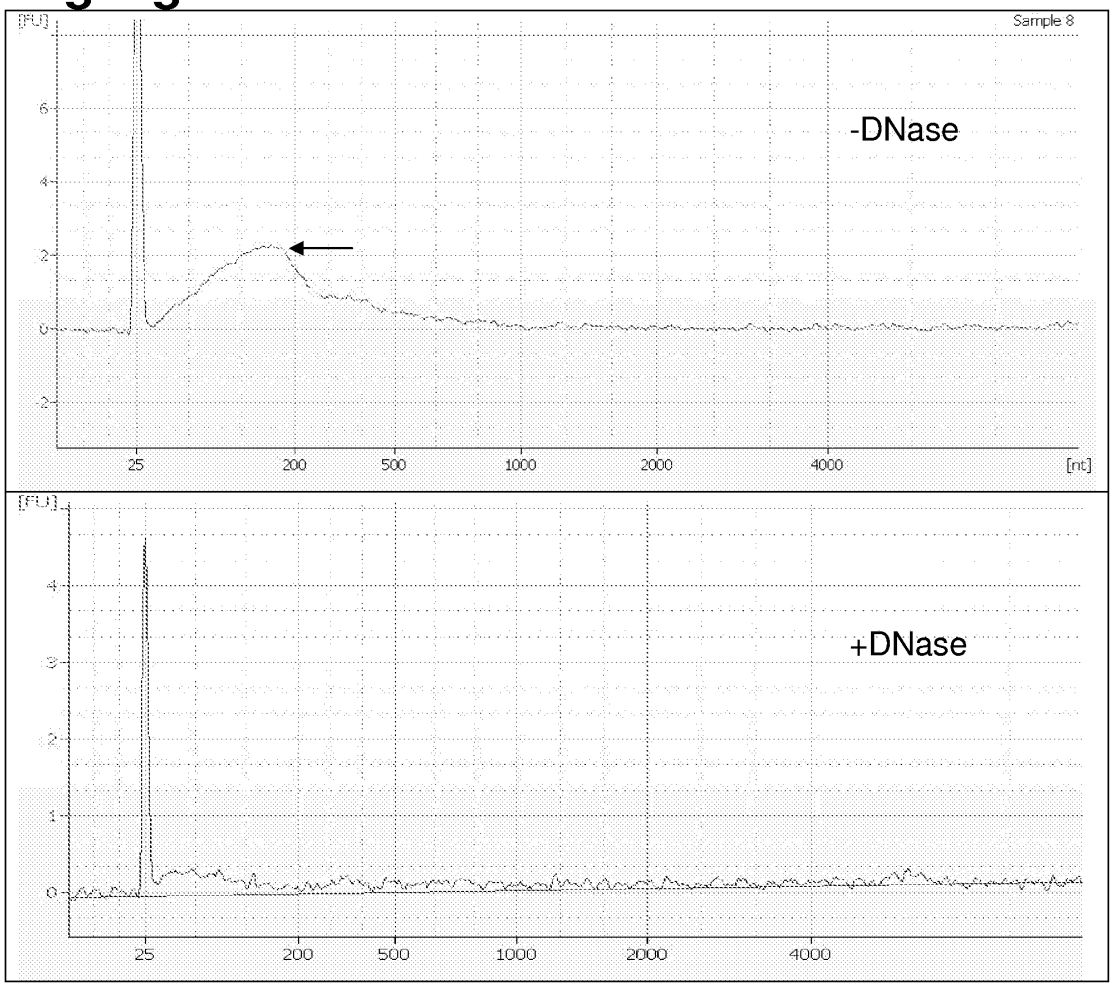

[FU]
Sample 8
-DNase
6
4
2
0
2
25
200
500
1000
2000
4000
[nt]
[FU]
+DNase
4
3
2
1
0
25
200
500
1000
2000
4000

Fig. 3h

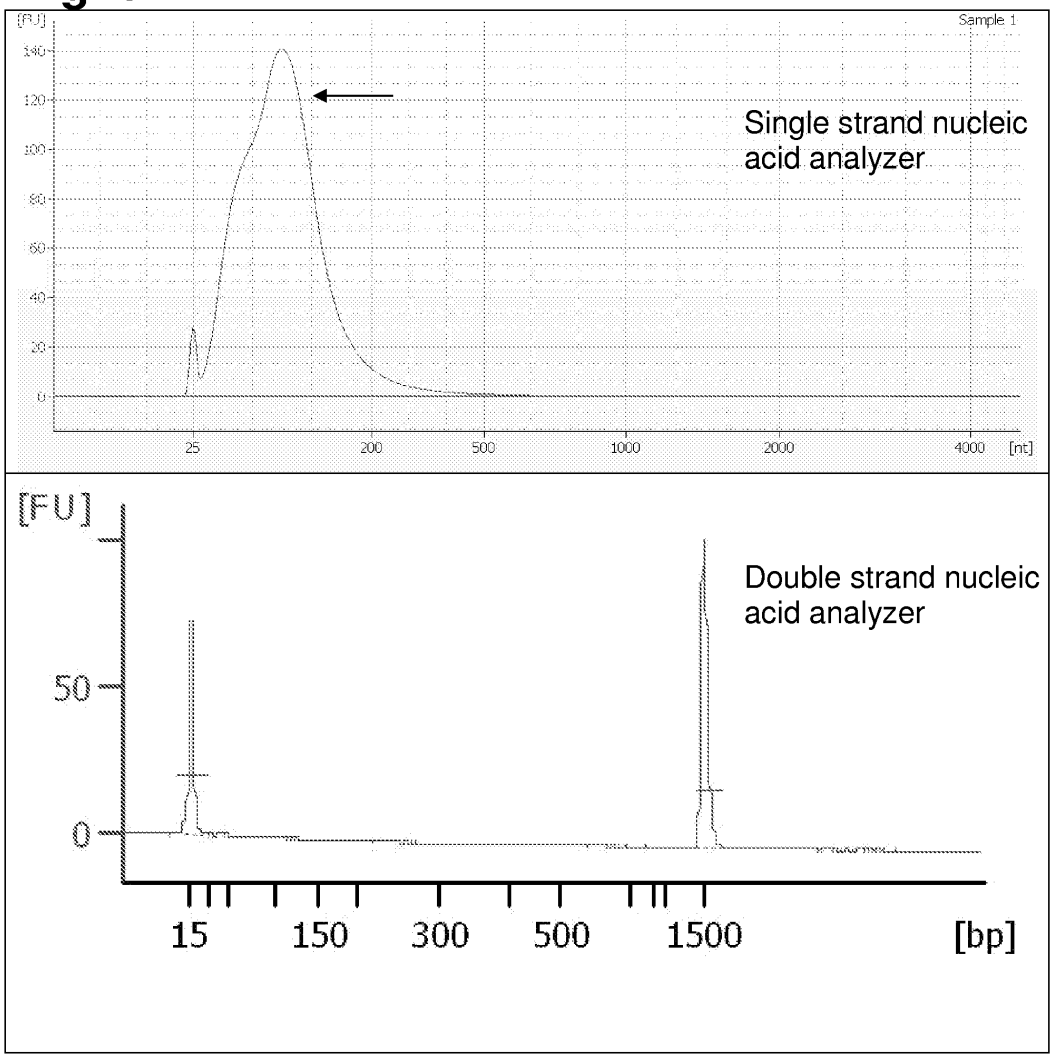

[FU]
Sample 1
140
120
100
80
60
40
20
0
25
200
500
1000
2000
4000
[nt]
Single strand nucleic acid analyzer
[FU]
50
0
15
150
300
500
1500
[bp]
Double strand nucleic acid analyzer

Fig. 3i

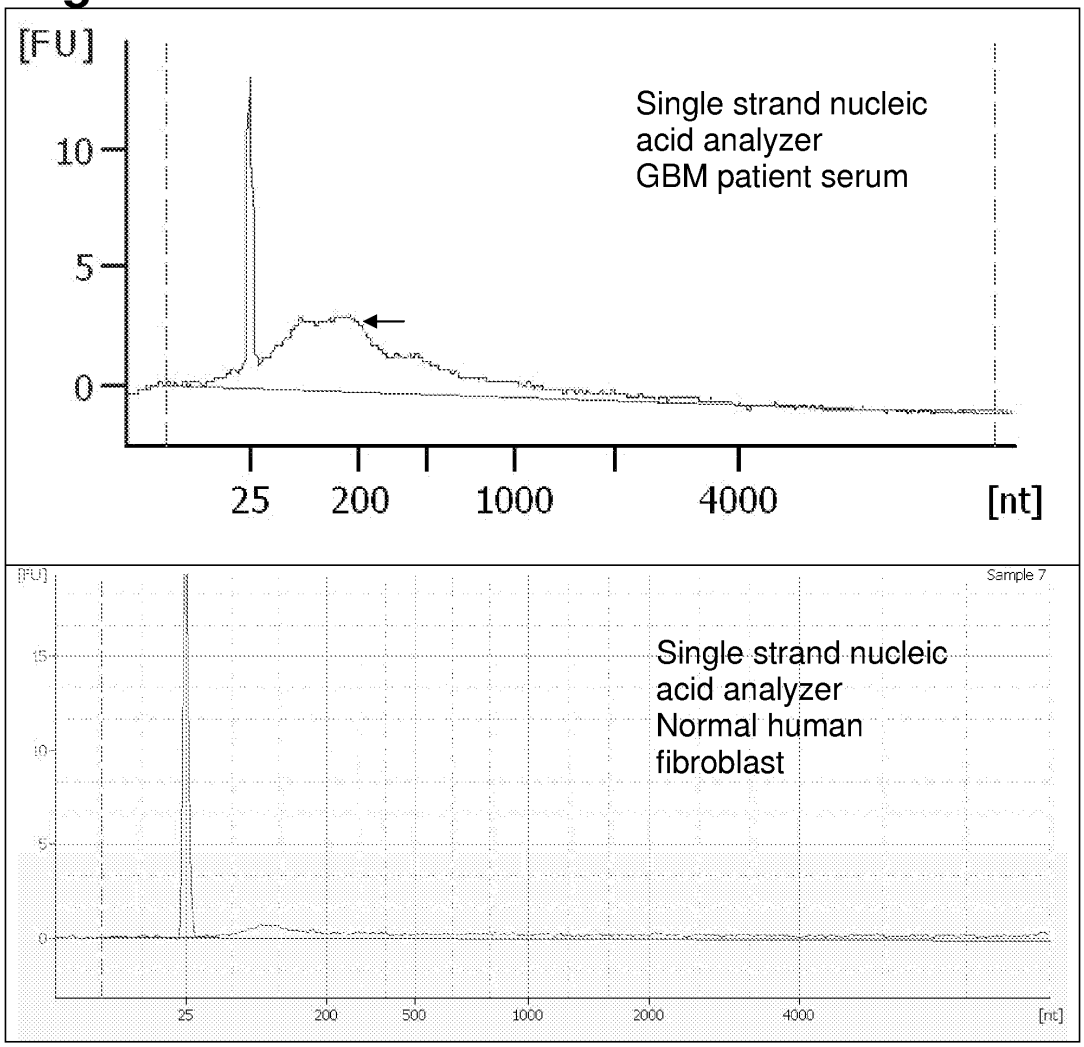
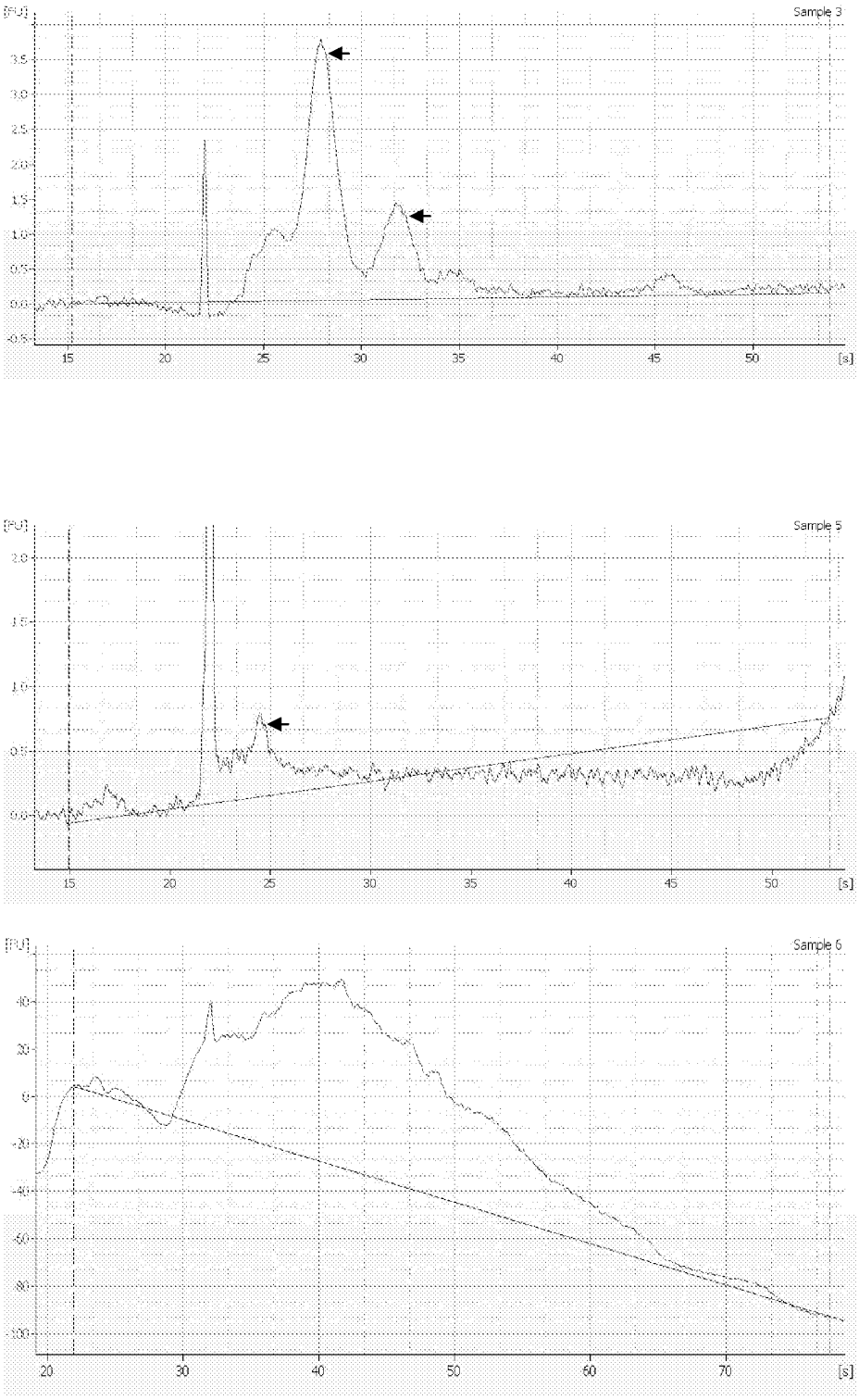

[FU]
10
5
0
Single strand nucleic acid analyzer
GBM patient serum
25
200
1000
4000
[nt]
[FU]
Sample 7
15
10
5
0
Single strand nucleic acid analyzer
Normal human fibroblast
25
200
500
1000
2000
4000
[nt]

Fig. 4



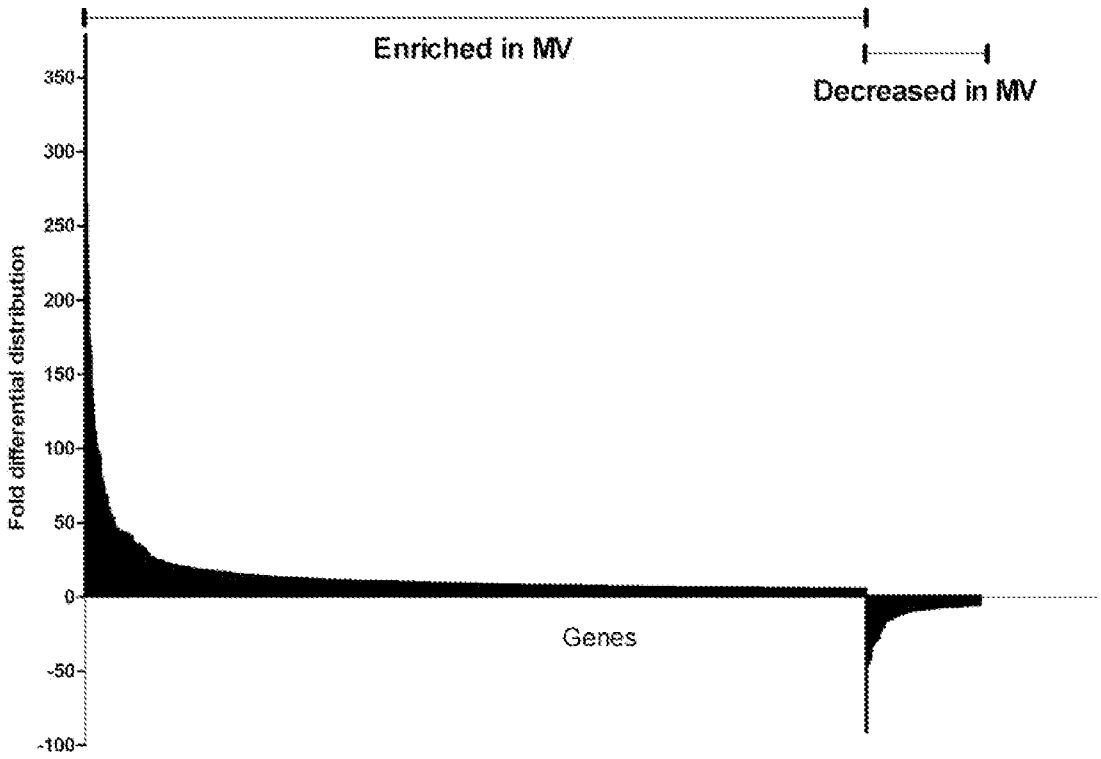

Enriched in MV
Decreased in MV
Fold differential distribution
350
300
250
200
150
100
50
0
-50
-100
Genes

FIG. 5

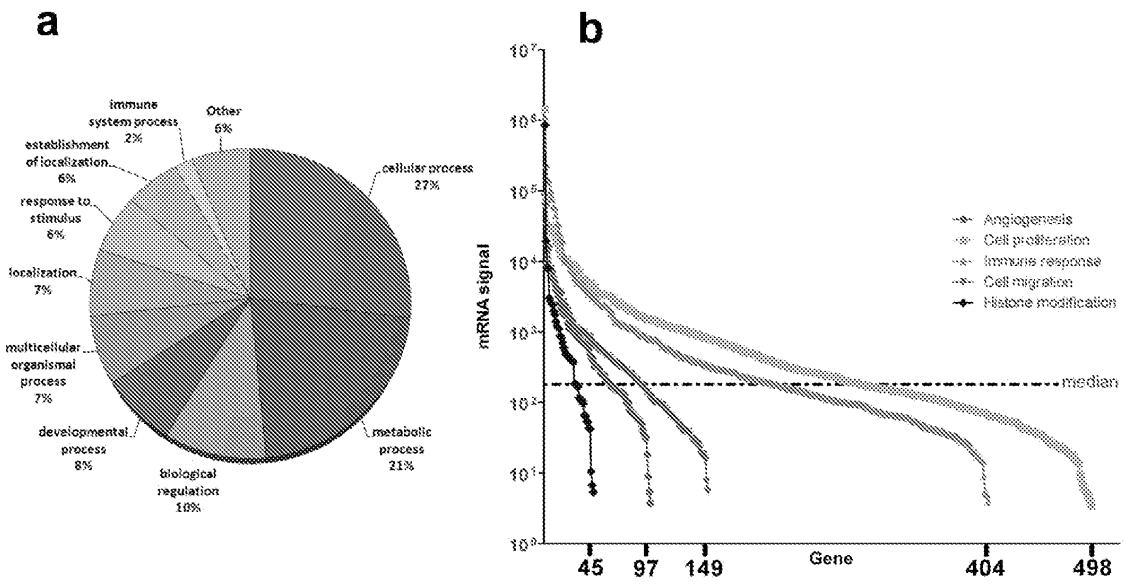

a
immune system process 2%
Other 6%
establishment of localization 6%
cellular process 27%
response to stimulus 6%
localization 7%
multicellular organismal process 7%
developmental process 8%
biological regulation 18%
metabolic process 21%
b
mRNA signal
Angiogenesis
Cell proliferation
Immune response
Cell migration
Histone modification
median
Gene
45
97
149
404
498

FIG. 6

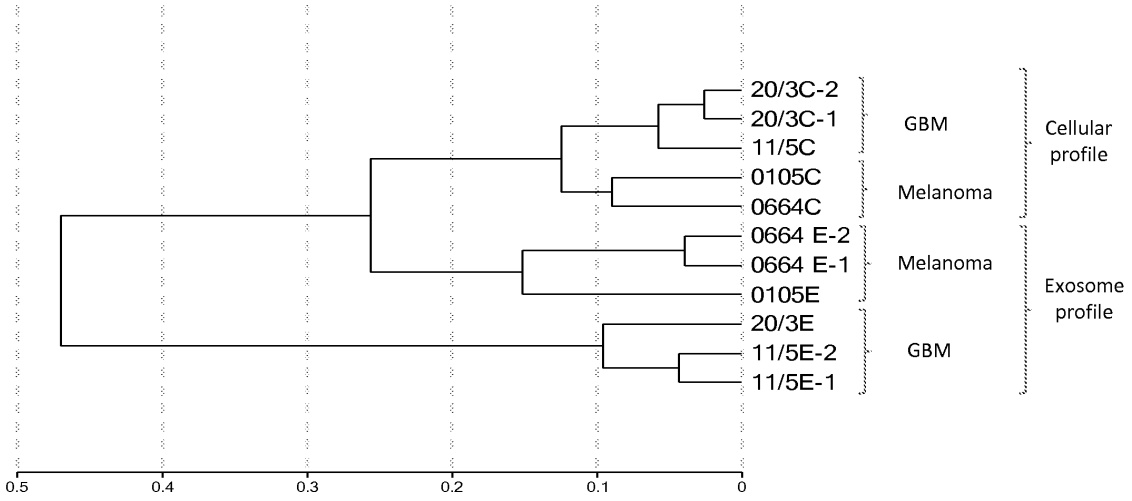

20/3C-2
20/3C-1
11/5C
0105C
0664C
0664 E-2
0664 E-1
0105E
20/3E
11/5E-2
11/5E-1
GBM
Melanoma
Melanoma
GBM
Cellular profile
Exosome profile
0.5
0.4
0.3
0.2
0.1
0

FIG. 7

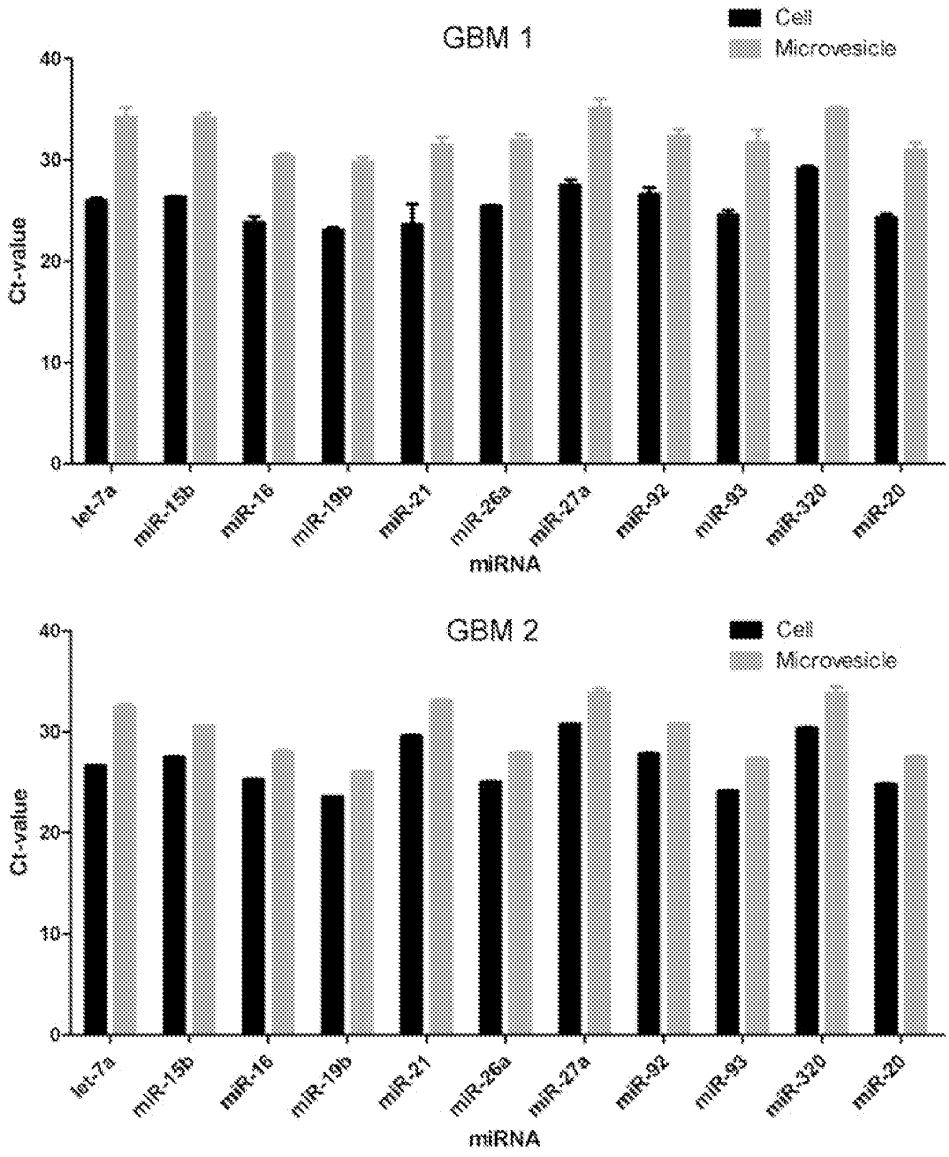

GBM 1
Cell
Microvesicle
Ct-value
40
30
20
10
0
let-7a
miR-15b
miR-16
miR-19b
miR-21
miR-26a
miR-27a
miR-92
miR-93
miR-320
miR-20
miRNA
GBM 2
Cell
Microvesicle
Ct-value
40
30
20
10
0
let-7a
miR-15b
miR-16
miR-19b
miR-21
miR-26a
miR-27a
miR-92
miR-93
miR-320
miR-20
miRNA

FIG. 8

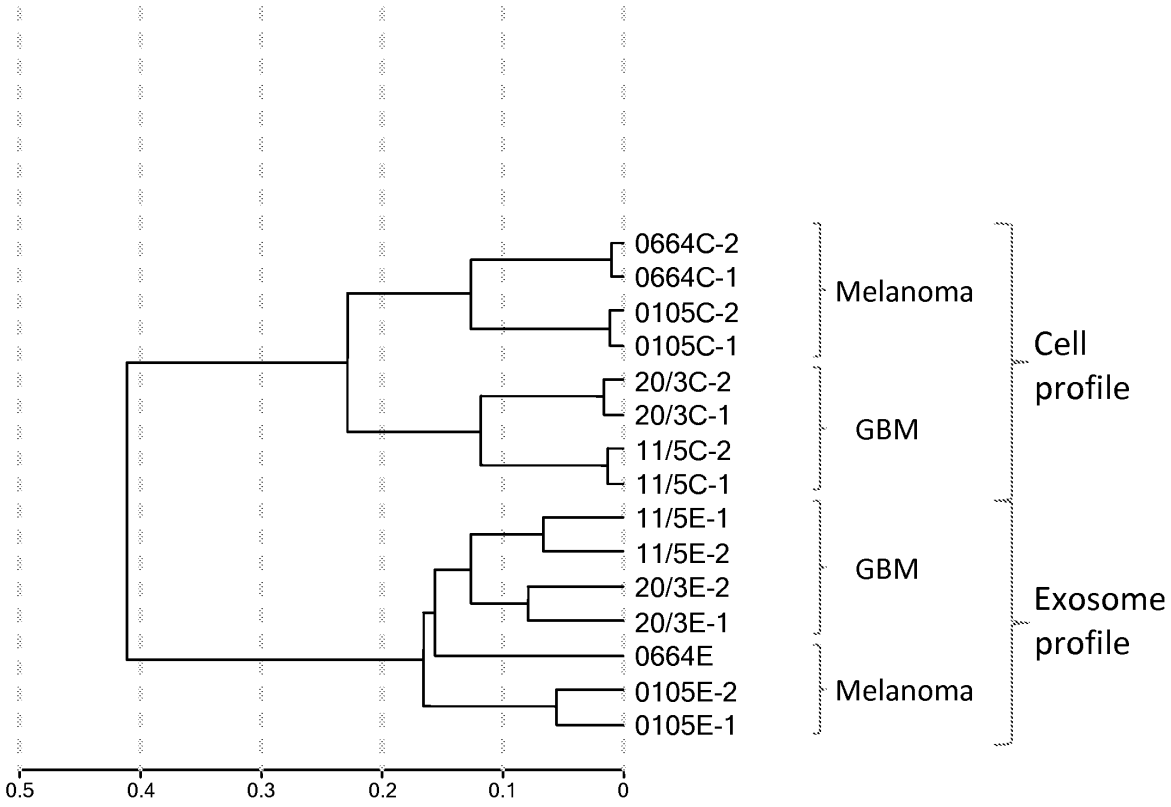

0664C-2
0664C-1
0105C-2
0105C-1
20/3C-2
20/3C-1
11/5C-2
11/5C-1
11/5E-1
11/5E-2
20/3E-2
20/3E-1
0664E
0105E-2
0105E-1
0.5
0.4
0.3
0.2
0.1
0
Melanoma
GBM
GBM
Melanoma
Cell profile
Exosome profile

FIG. 9

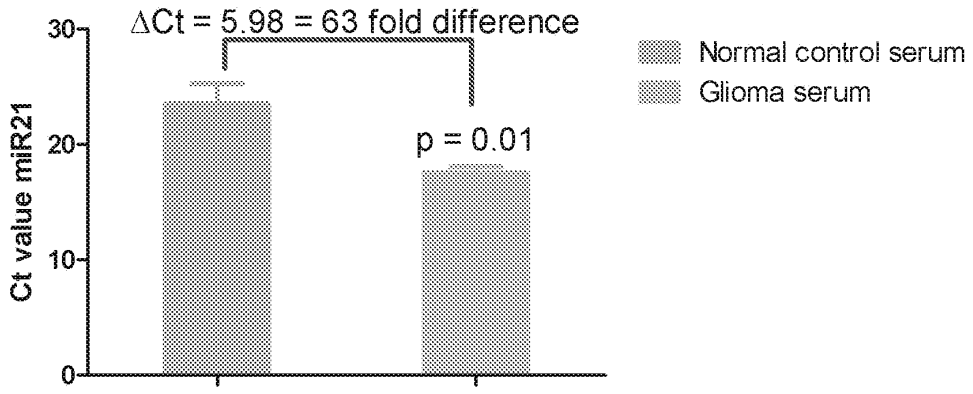

ΔCt = 5.98 = 63 fold difference
p = 0.01
Ct value miR21
30
20
10
0
Normal control serum
Glioma serum

FIG. 10

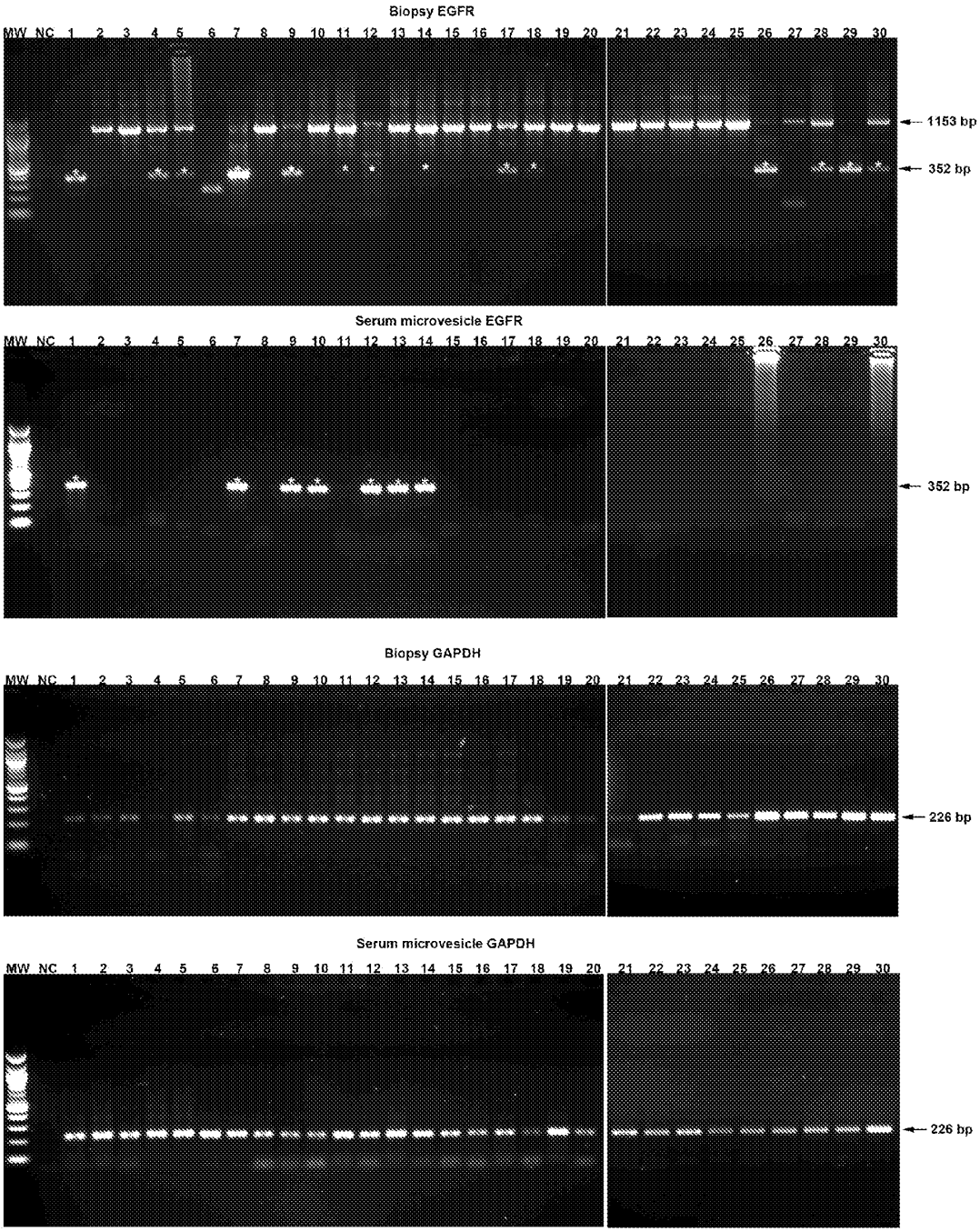

Biopsy EGFR
MW NC 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30
1153 bp
352 bp
Serum microvesicle EGFR
MW NC 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30
352 bp
Biopsy GAPDH
MW NC 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30
226 bp
Serum microvesicle GAPDH
MW NC 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30
226 bp

FIG. 11

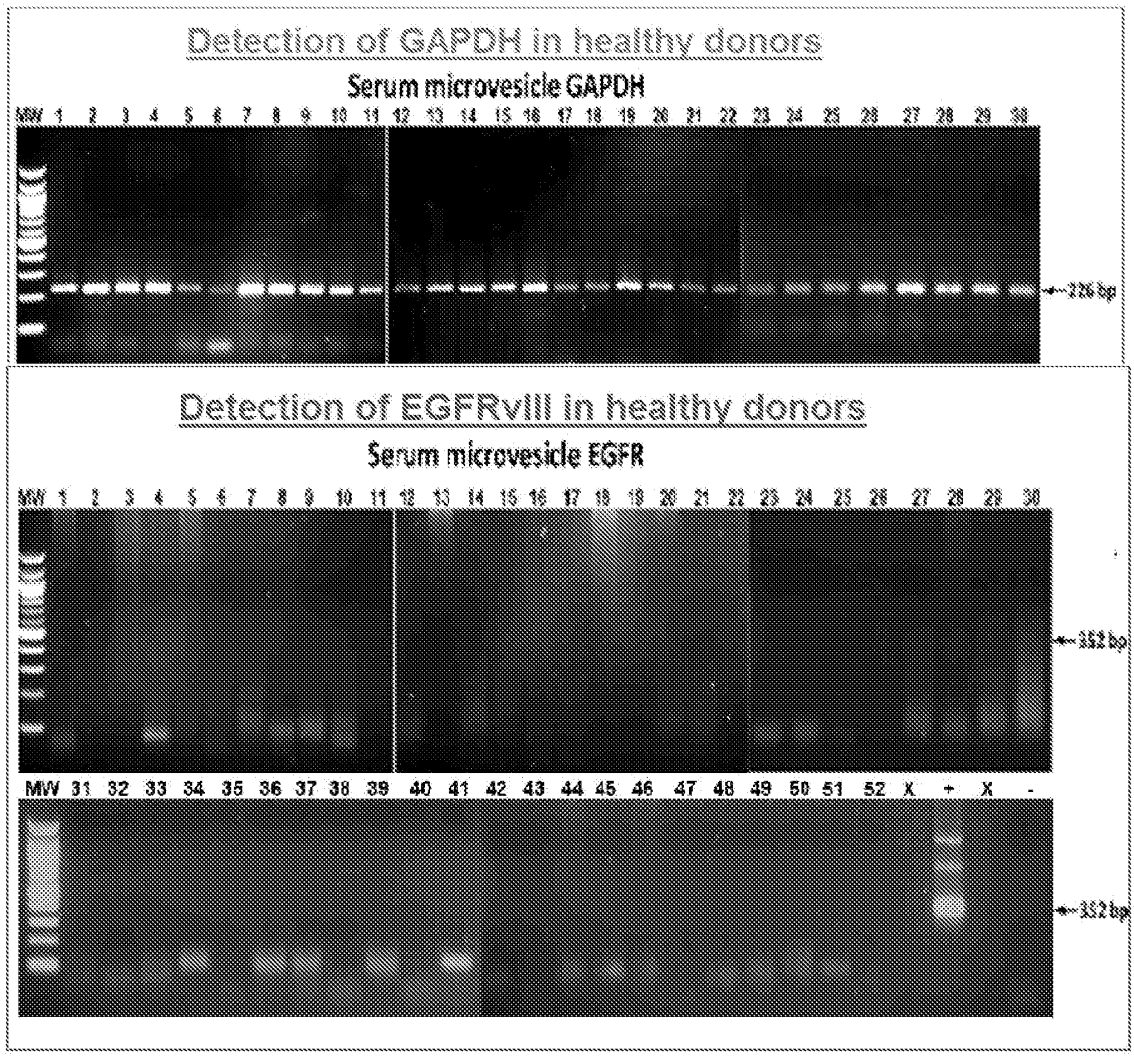

Detection of GAPDH in healthy donors
Serum microvesicle GAPDH
MW 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30
226 bp
Detection of EGFRvIII in healthy donors
Serum microvesicle EGFR
MW 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30
352 bp
MW 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 X + X -
352 bp

FIG. 12

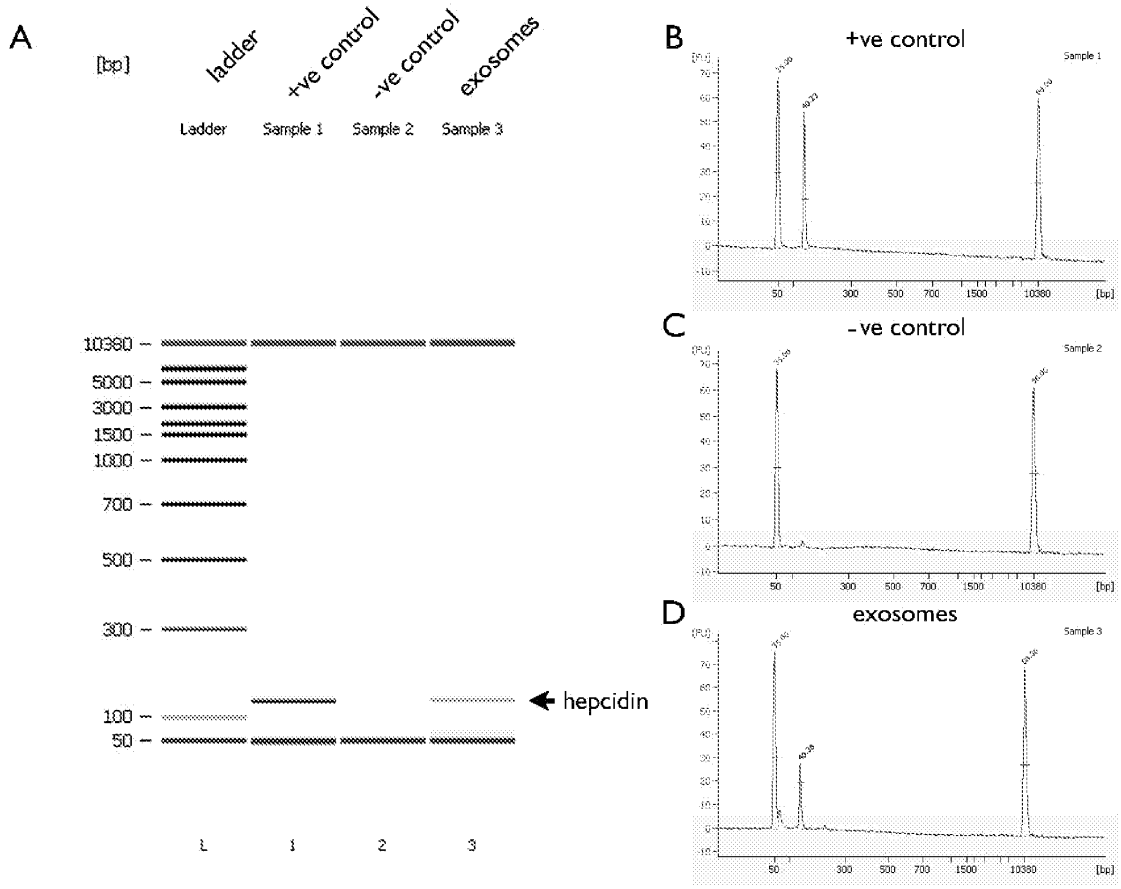
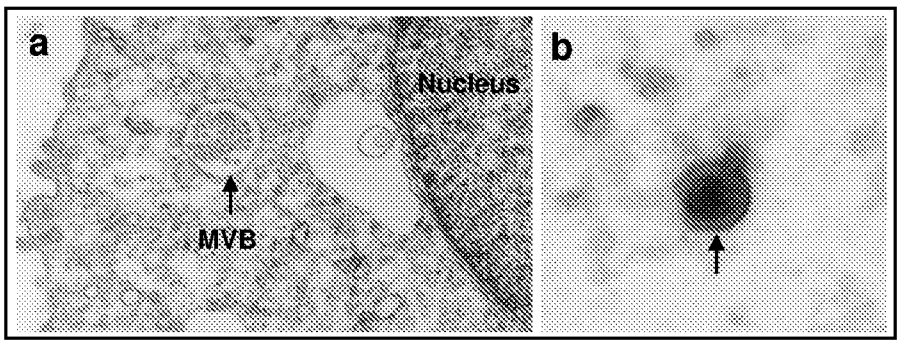
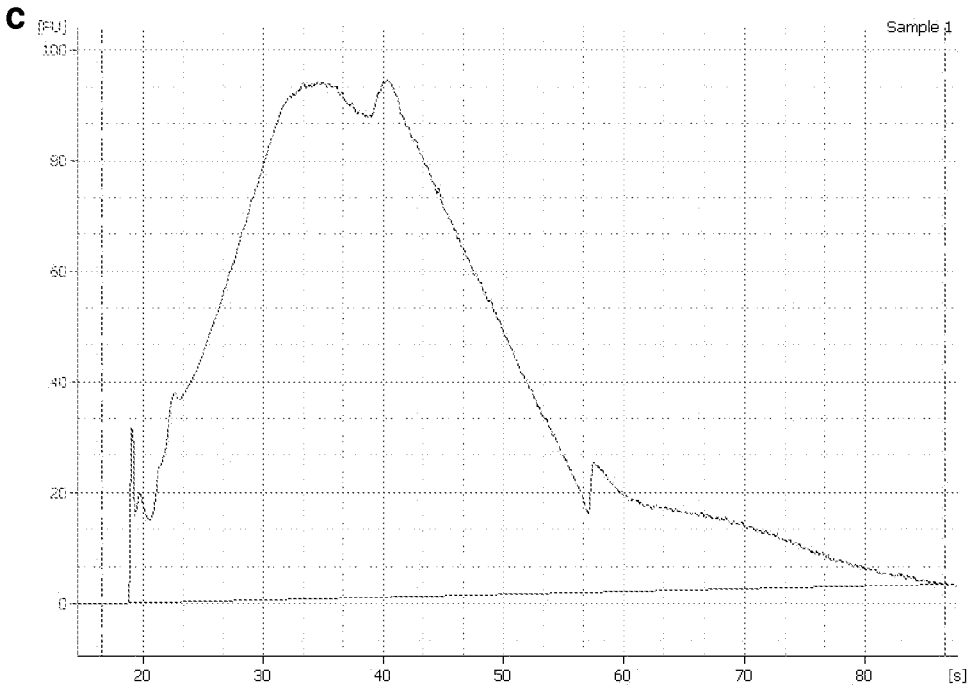

A
[bp]
ladder
+ve control
-ve control
exosomes
Ladder
Sample 1
Sample 2
Sample 3
10380
5000
3000
1500
1000
700
500
300
100
50
hepcidin
L
1
2
3
B
+ve control
Sample 1
C
-ve control
Sample 2
D
exosomes
Sample 3
50
300
500
700
1500
10380
[bp]

FIG. 13


a
Nucleus
MVB
b


c
[FU]
Sample 1
100
80
60
40
20
0
20
30
40
50
60
70
80
[s]

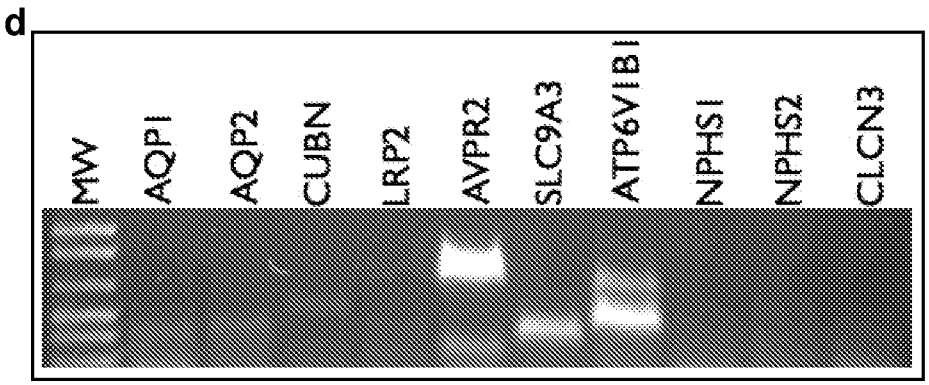

d
MW
AQP1
AQP2
CUBN
LRP2
AVPR2
SLC9A3
ATP6V1B1
NPHS1
NPHS2
CLCN3

FIG. 14a-d

Fig. 14e

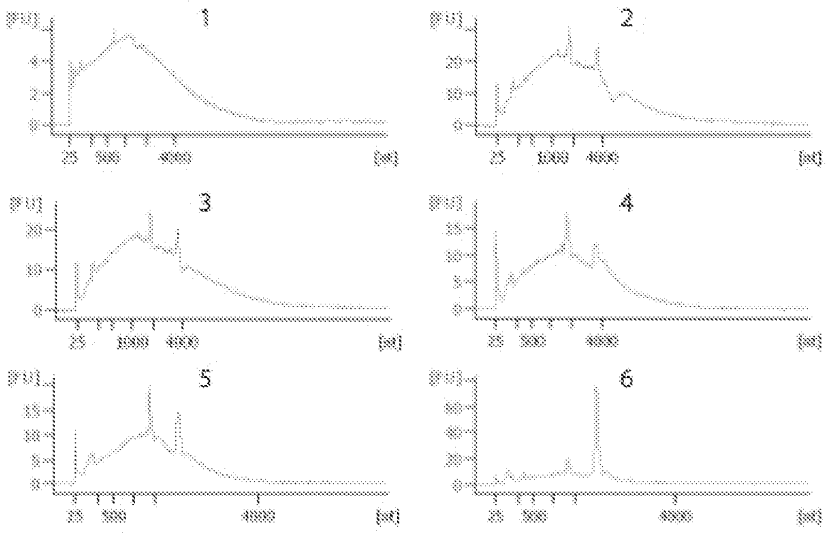


Fig. 14f

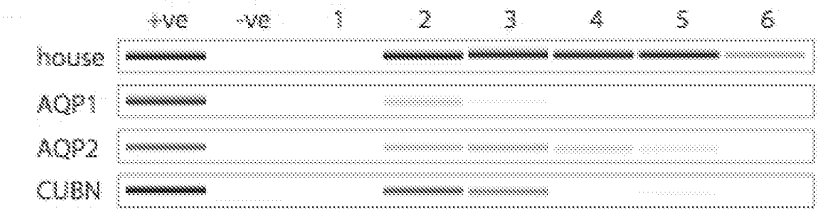


Fig. 14g

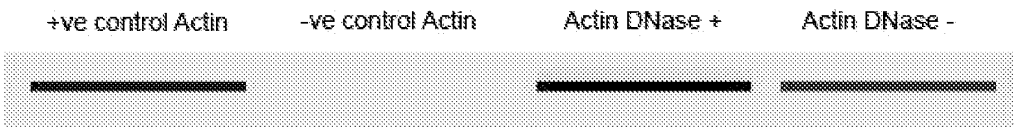
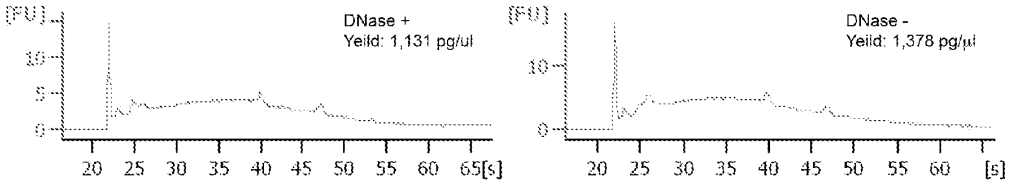
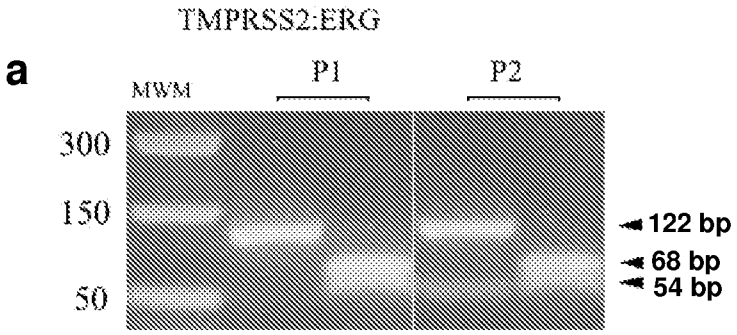
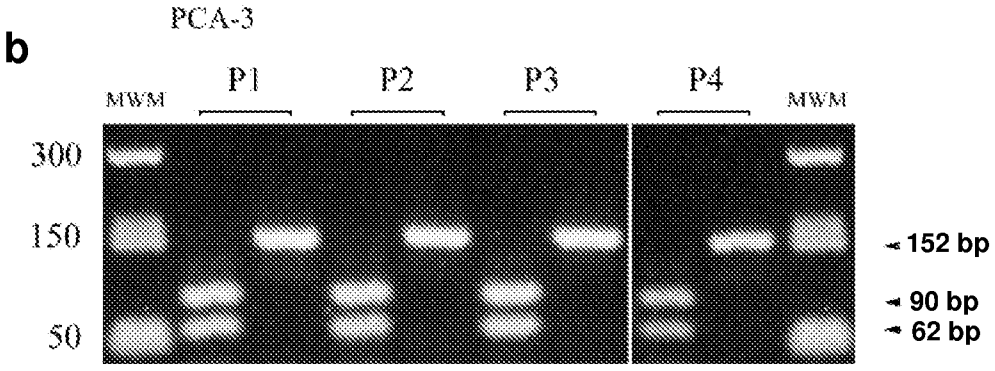


Fig. 14h







c

	Stage			prostate cancer biomarkers	
No.	Grade	Gleason	PSA	TMERG	PCA-3
P1	T3NxM0	9	25	+	+
P2	T2cNxM0	7	24	+	+
P3	T2	6	7.4	-	+
P4	T2	6	3.6	-	+

FIG. 15

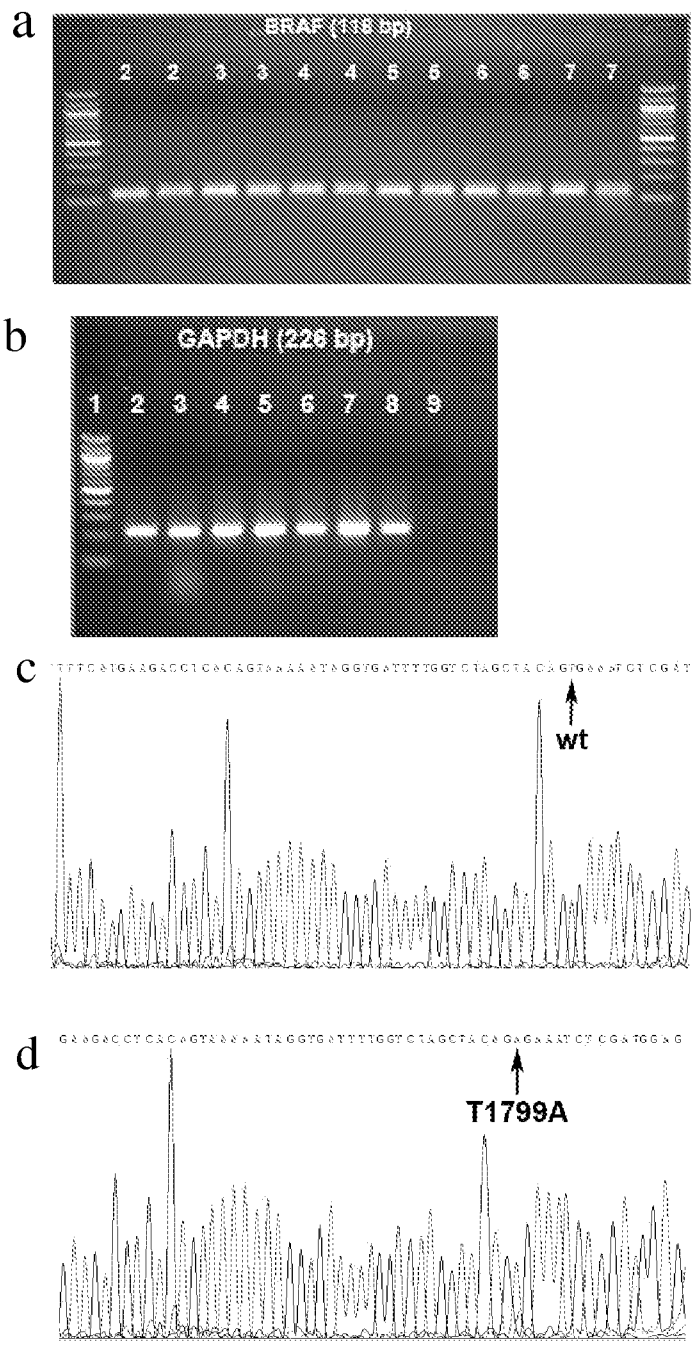

a
BRAF (118 bp)
2 2 3 3 4 4 5 5 6 6 7 7
b
GAPDH (226 bp)
1 2 3 4 5 6 7 8 9
c
wt
d
T1799A

FIG. 16

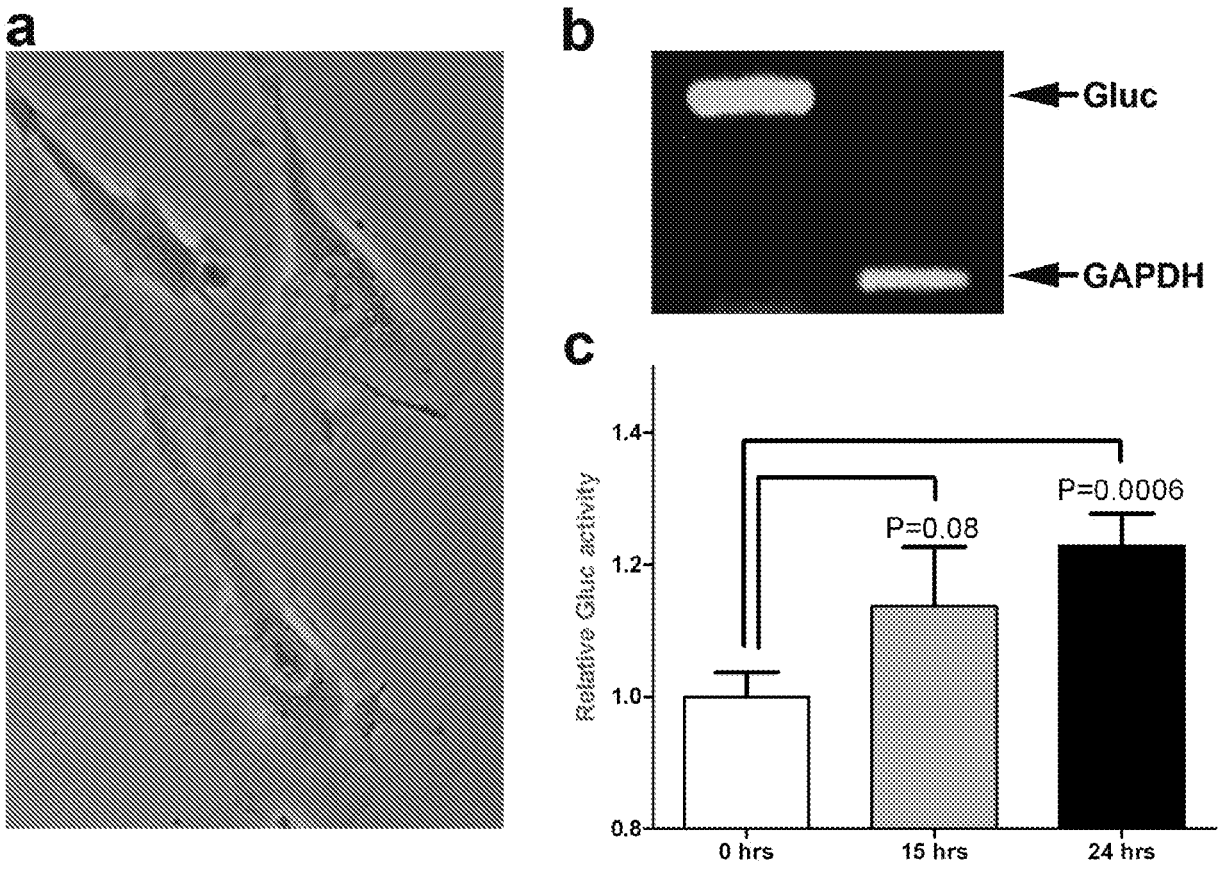

a
b
Gluc
GAPDH
c
Relative Gluc activity
1.4
1.2
1.0
0.8
P=0.08
P=0.0006
0 hrs
15 hrs
24 hrs

FIG. 17

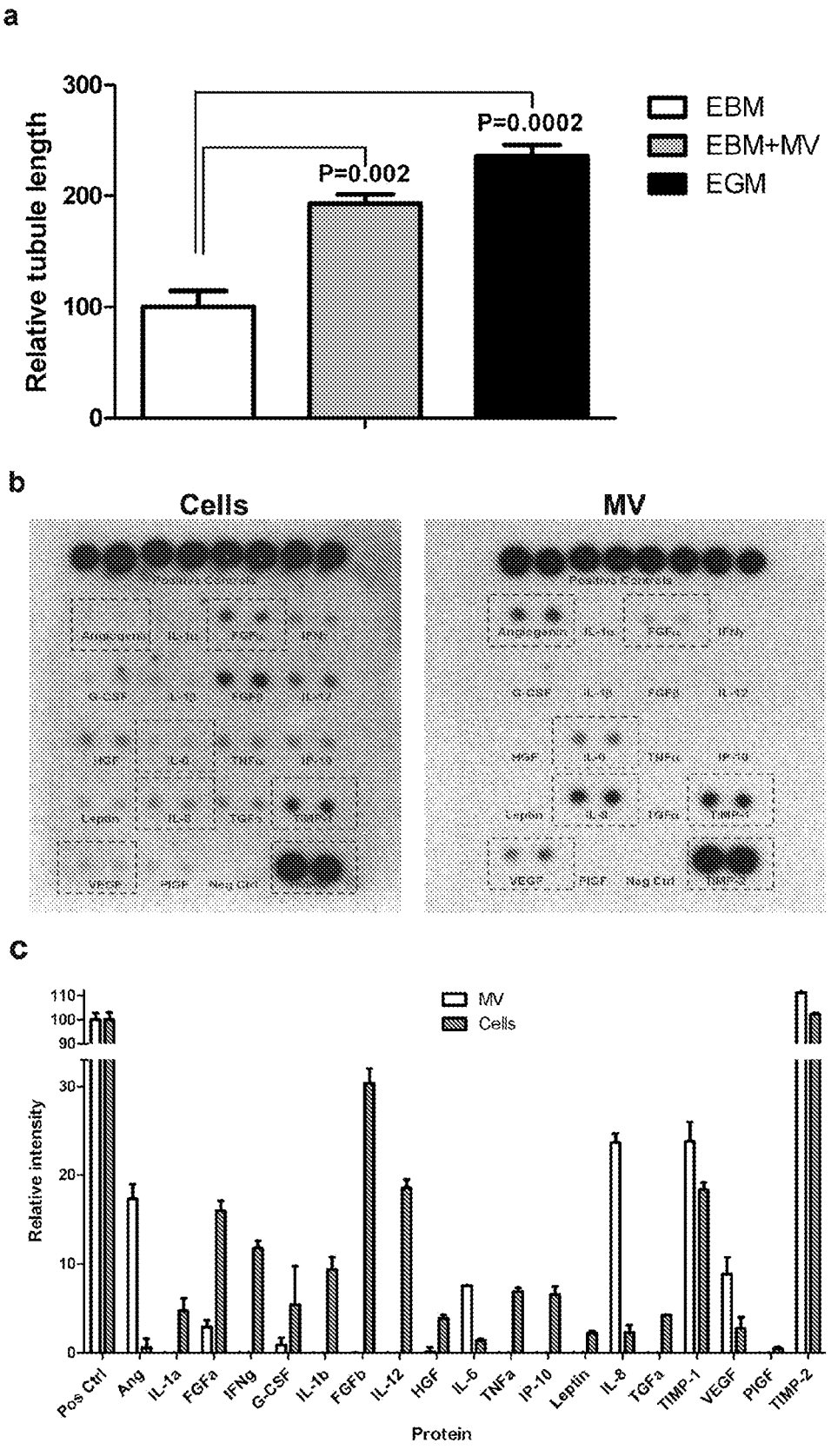

a
Relative tubule length
300
200
100
0
P=0.002
P=0.0002
EBM
EBM+MV
EGM
b
Cells
MV
c
MV
Cells
Relative intensity
110
100
90
30
20
10
0
Pos Ctrl
Ang
IL-1a
FGFa
IFNg
G-CSF
IL-1b
FGFb
IL-12
HGF
IL-6
TNFa
IP-10
Leptin
IL-8
TGFa
TIMP-1
VEGF
PIGF
TIMP-2
Protein

FIG. 18

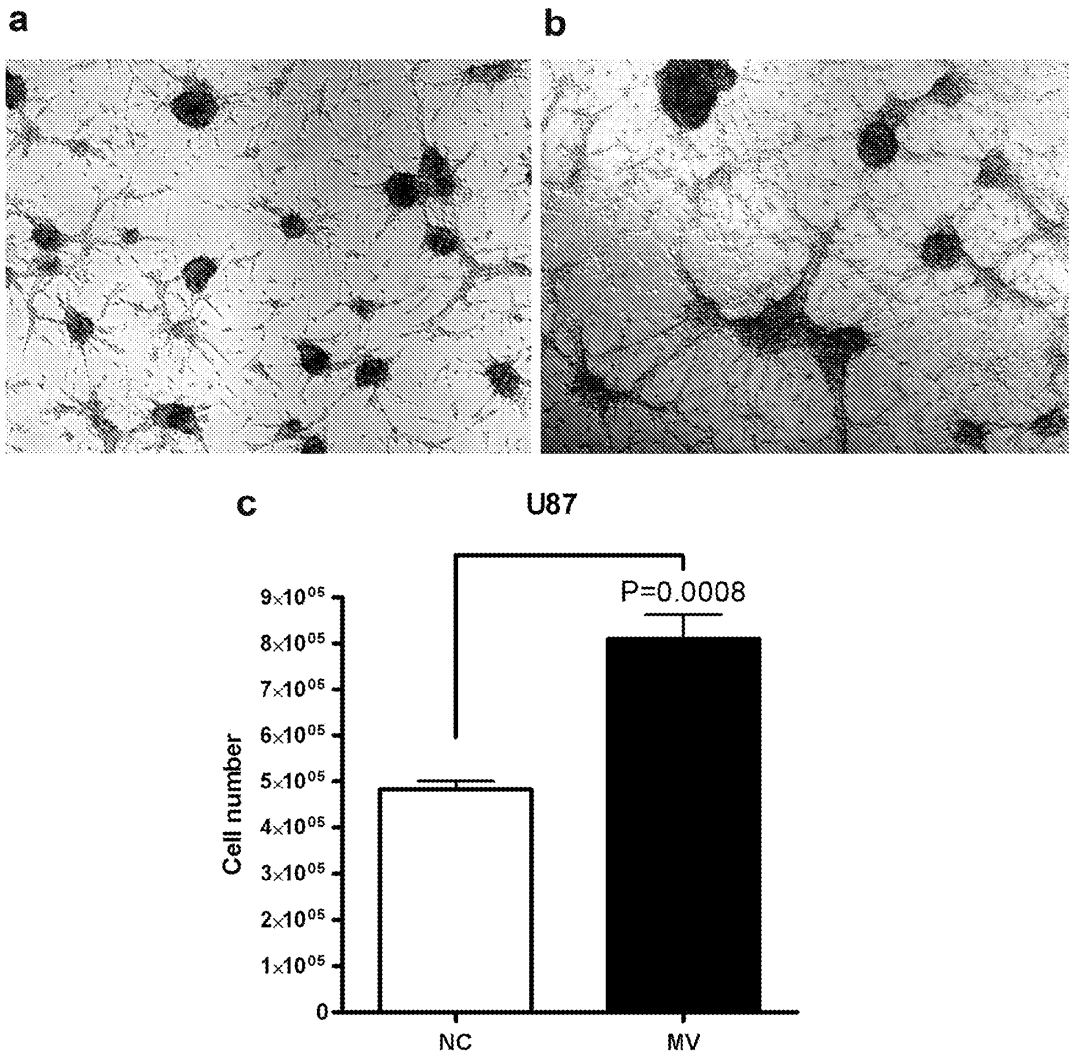

a
b
c
U87
P=0.0008
Cell number
9×10^05
8×10^05
7×10^05
6×10^05
5×10^05
4×10^05
3×10^05
2×10^05
1×10^05
0
NC
MV

FIG. 19

SEQUENCE LISTING

<110> The General Hospital Corporation

<120> USE OF MICROVESICLES IN DIAGNOSIS, PROGNOSIS AND TREATMENT OF MEDICAL DISEASES AND CONDISTIONS

<130> SG2340A

<160> 58

<170> PatentIn version 3.5

<210> 1
<211> 20
<212> DNA
<213> Artificial sequence

<220>
<223> synthetic DNA sequence used as primers

<400> 1
cgaccacttt gtcaagctca 20

<210> 2
<211> 20
<212> DNA
<213> Artificial sequence

<220>
<223> synthetic DNA sequence used as primers

<400> 2
ggtggtccag gggtcttact 20

<210> 3
<211> 20
<212> DNA
<213> Artificial sequence

<220>
<223> synthetic DNA sequence used as primers

<400> 3
gagagcctcc cacagttgag 20

<210> 4
<211> 20
<212> DNA
<213> Artificial sequence

<220>
<223> synthetic DNA sequence used as primers

<400> 4
tttgccagaa tctcccaatc 20

<210> 5
<211> 17
<212> DNA
<213> Artificial sequence

<220>
<223> synthetic DNA sequence used as primers

<400> 5
ccatgctcat sgattgg 17

<210> 6
<211> 19
<212> DNA
<213> Artificial sequence

<220>
<223> synthetic DNA sequence used as primers

<400> 6
attctrttcc attggtcta 19

<210> 7
<211> 20
<212> DNA
<213> Artificial sequence

<220>
<223> synthetic DNA sequence used as primers

<400> 7
gccccttctg gaaaacctaa 20

<210> 8
<211> 20
<212> DNA
<213> Artificial sequence

<220>
<223> synthetic DNA sequence used as primers

<400> 8
agccaatgcc agttatgagg 20

<210> 9
<211> 19
<212> DNA
<213> Artificial sequence

<220>
<223> synthetic DNA sequence used as primers

<400> 9
gaaggtgaag gtcggagtc 19

<210> 10
<211> 20
<212> DNA
<213> Artificial sequence

<220>
<223> synthetic DNA sequence used as primers

<400> 10
gaagatggtg atgggatttc 20

<210> 11
<211> 20
<212> DNA
<213> Artificial sequence

<220>
<223> synthetic DNA sequence used as primers

<400> 11
ccagtattga tcgggagagc 20

<210> 12
<211> 20
<212> DNA
<213> Artificial sequence

<220>
<223> synthetic DNA sequence used as primers

<400> 12
ccagtattga tcgggagagc 20

<210> 13
<211> 18
<212> DNA
<213> Artificial sequence

<220>
<223> synthetic DNA sequence used as primers

<400> 13
atgcgaccct ccgggacg 18

<210> 14
<211> 18
<212> DNA
<213> Artificial sequence

<220>
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<400> 14
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