FIGURE 1

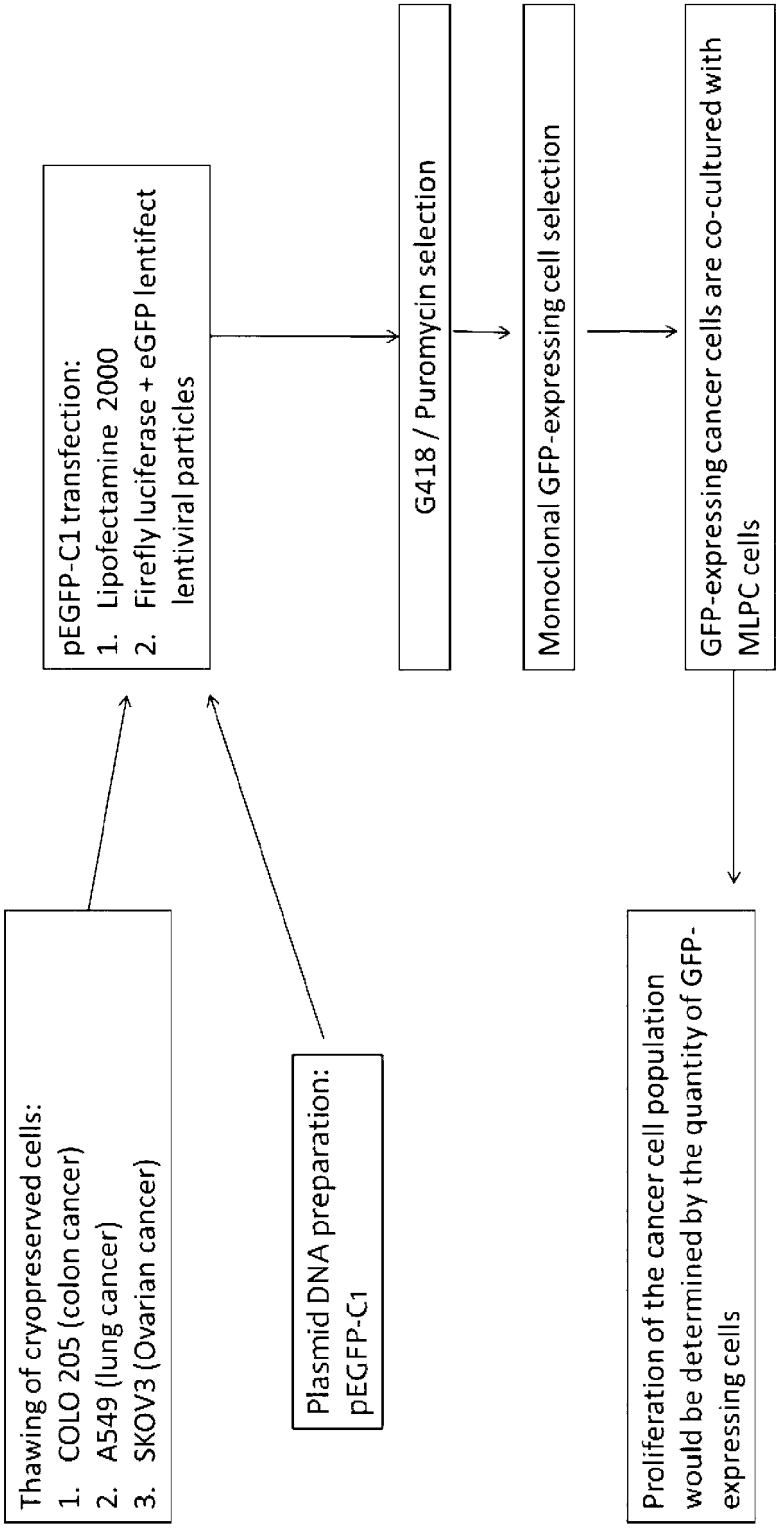

Thawing of cryopreserved cells:
1. COLO 205 (colon cancer)
2. A549 (lung cancer)
3. SKOV3 (Ovarian cancer)
Plasmid DNA preparation: pEGFP-C1
pEGFP-C1 transfection:
1. Lipofectamine 2000
2. Firefly luciferase + eGFP lentifect lentiviral particles
G418 / Puromycin selection
Monoclonal GFP-expressing cell selection
GFP-expressing cancer cells are co-cultured with MLPC cells
Proliferation of the cancer cell population would be determined by the quantity of GFP-expressing cells

FIGURE 2

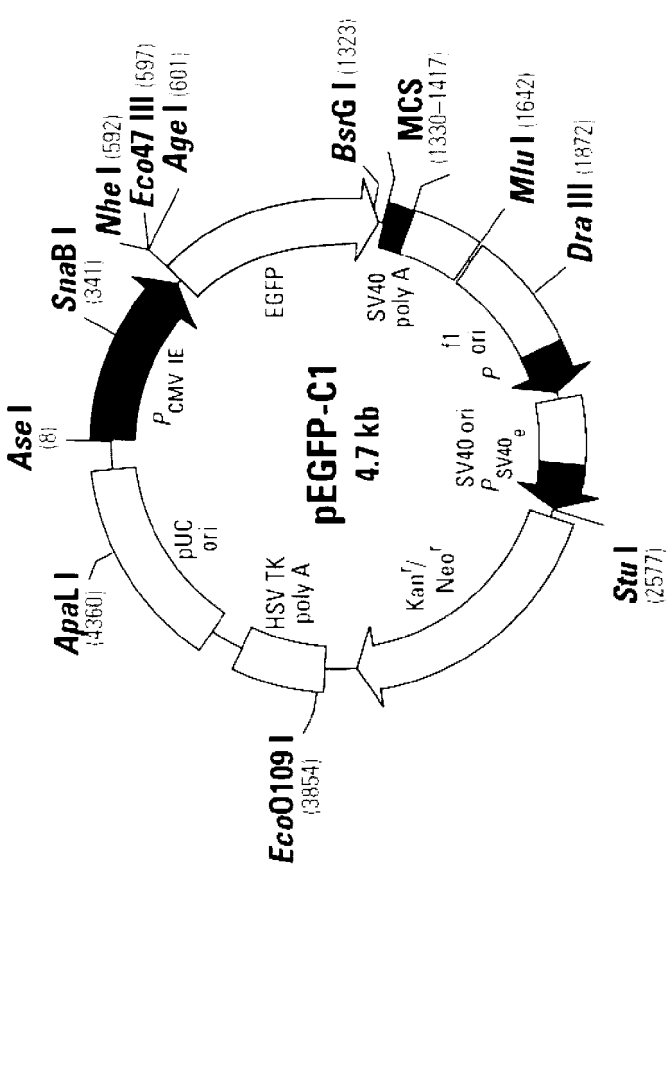

pEGFP-C1
4.7 kb
Ase I (8)
SnaB I (341)
Nhe I (592)
Eco47 III (597)
Age I (601)
BsrG I (1323)
MCS (1330–1417)
Mlu I (1642)
Dra III (1872)
Stu I (2577)
EcoO109 I (3854)
ApaL I (4360)
EGFP
SV40 poly A
f1 ori
SV40 ori
pUC ori
HSV TK poly A
Kan^r/ Neo^r
P CMV IE
P SV40 e
P
TAC AAG TCC GGA CTC AGA TCT CGA GCT CAA GCT TCG AAT TCT GCA GTC GAC GGT ACC GCG GGC CCG GGA TCC ACC GGA TCT AGA TAA CTG ATC A
BspE I
Bgl II
Xho I
Sac I
Hind III
EcoR I
Pst I
Sal I
Acc I
Kpn I
Asp718 I
Sac II
Apa I
Bsp120 I
BamH I
Xma I
Sma I
Xba I*
Bcl I*
STOPs

FIGURE 3

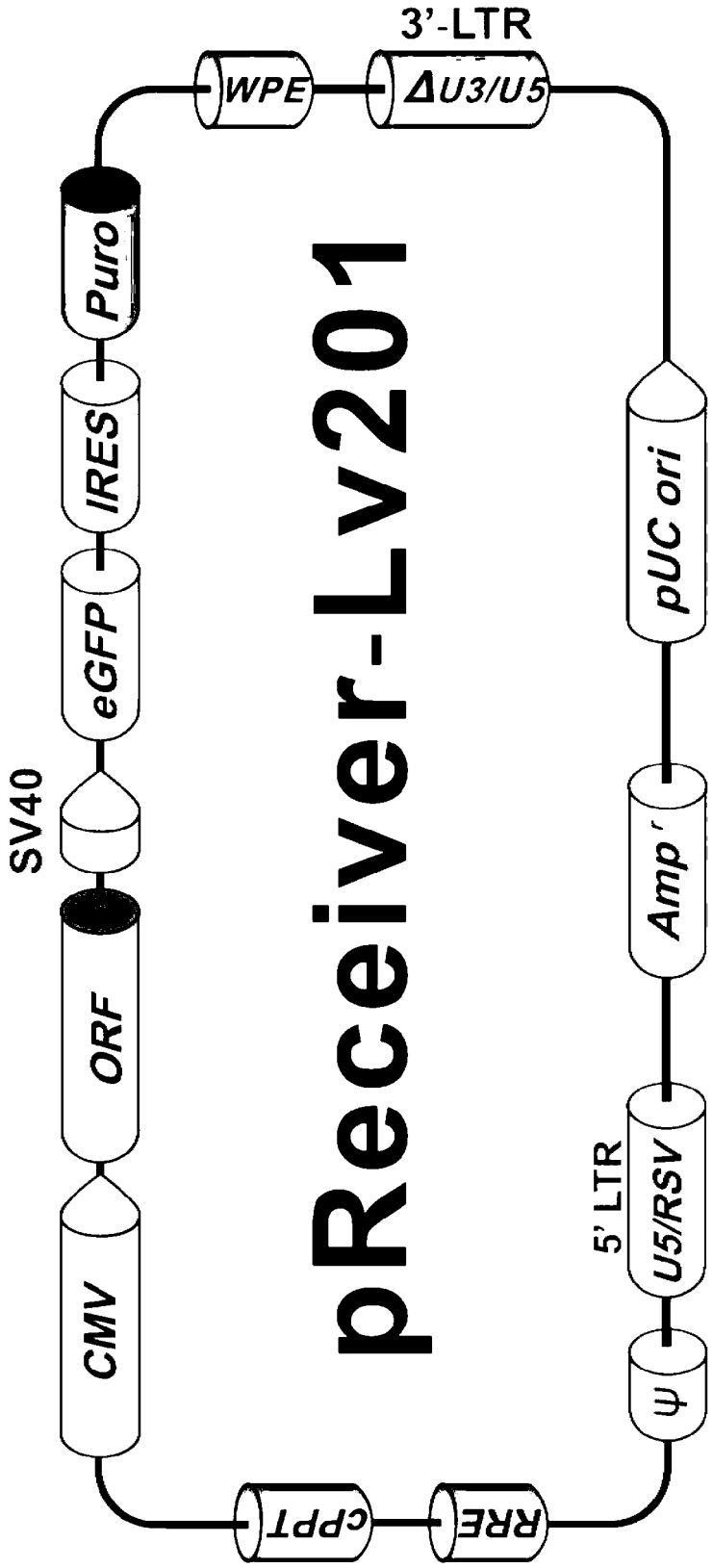

3'-LTR
WPE
ΔU3/U5
Puro
IRES
eGFP
SV40
ORF
CMV
pReceiver-Lv201
pUC ori
Amp r
5' LTR
U5/RSV
Ψ
RRE
cPPT

FIGURE 4

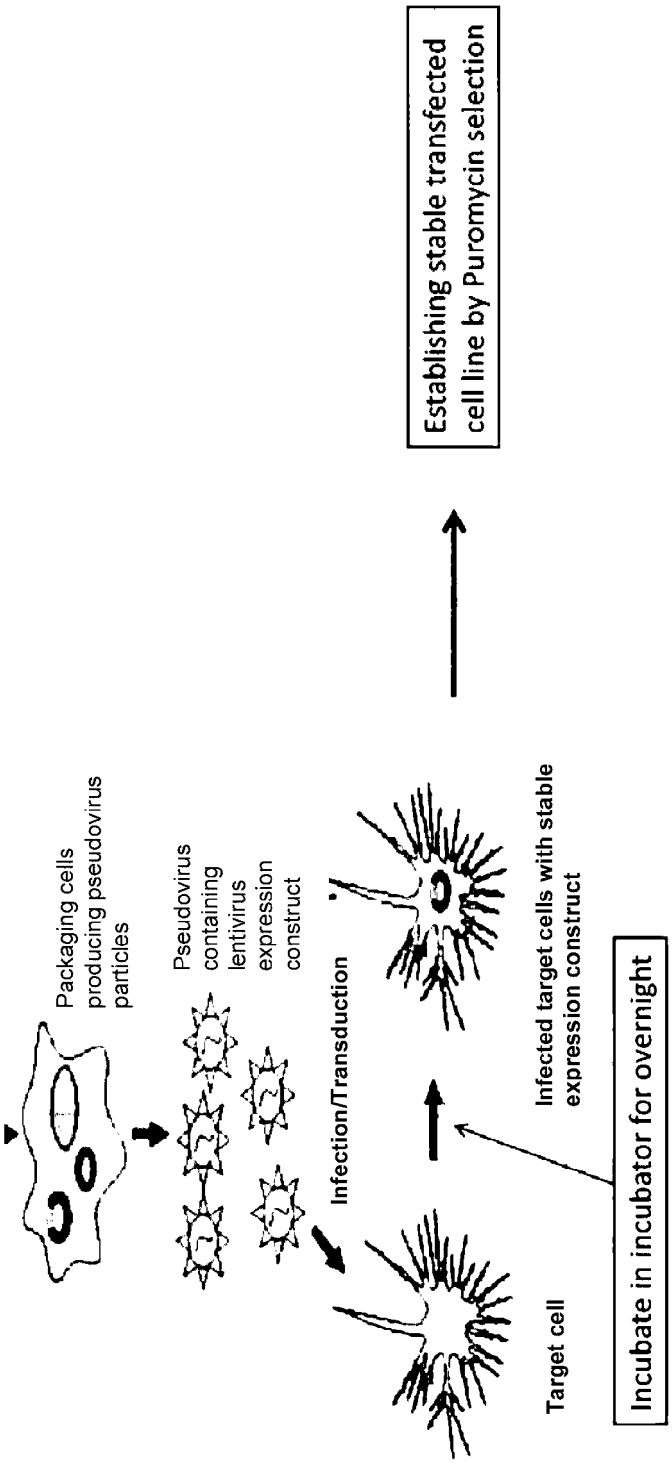

Establishing stable transfected cell line by Puromycin selection
Packaging cells producing pseudovirus particles
Pseudovirus containing lentivirus expression construct
Infection/Transduction
Infected target cells with stable expression construct
Target cell
Incubate in incubator for overnight

FIGURE 5

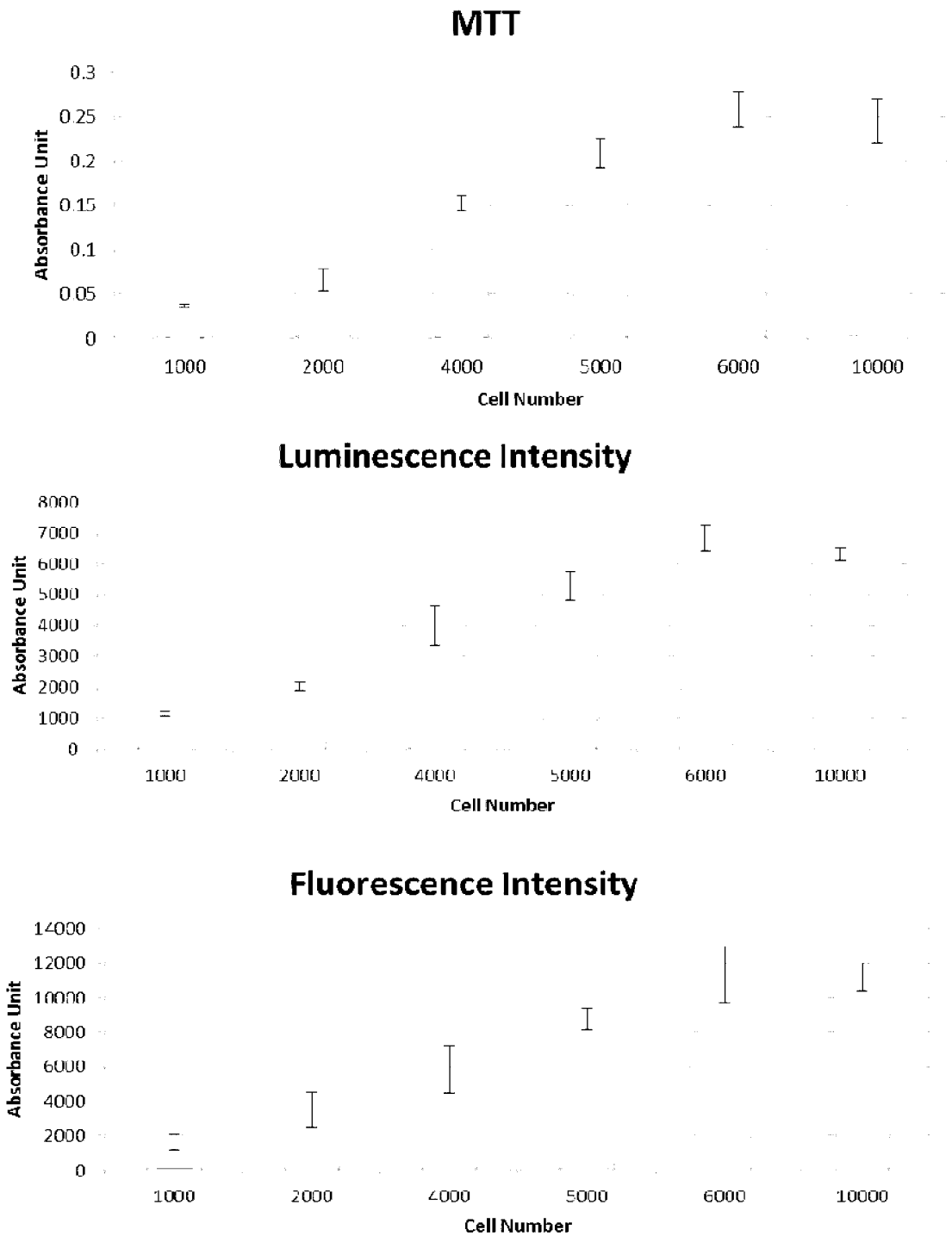
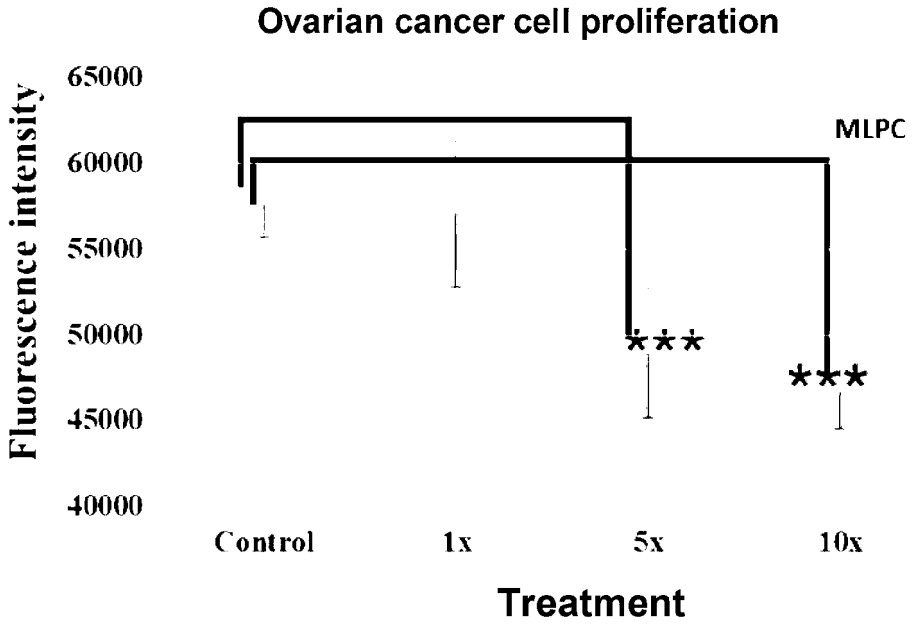

MTT
Absorbance Unit
0.3
0.25
0.2
0.15
0.1
0.05
0
1000
2000
4000
5000
6000
10000
Cell Number
Luminescence Intensity
Absorbance Unit
8000
7000
6000
5000
4000
3000
2000
1000
0
1000
2000
4000
5000
6000
10000
Cell Number
Fluorescence Intensity
Absorbance Unit
14000
12000
10000
8000
6000
4000
2000
0
1000
2000
4000
5000
6000
10000
Cell Number

FIGURE 6


Ovarian cancer cell proliferation
Fluorescence intensity
65000
60000
55000
50000
45000
40000
MLPC
***
***
Control
1x
5x
10x
Treatment

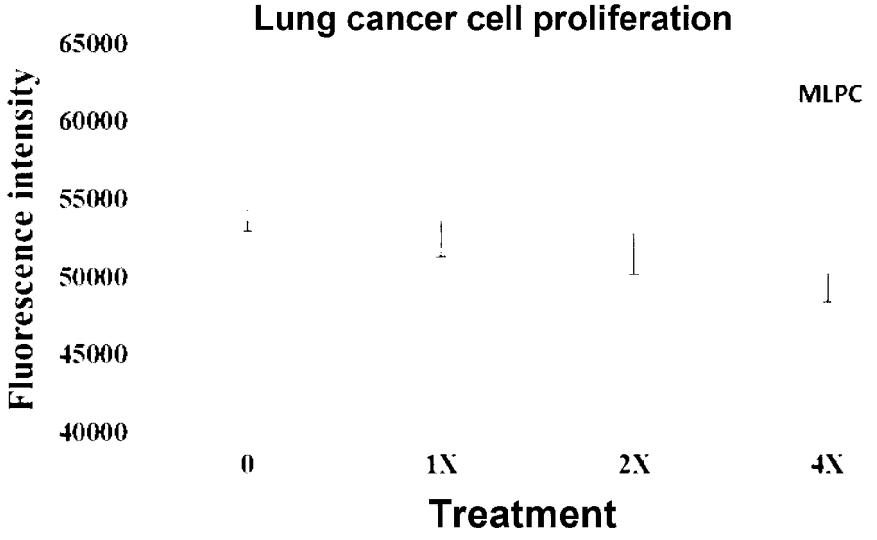

Lung cancer cell proliferation
Fluorescence intensity
65000
60000
55000
50000
45000
40000
MLPC
0
1X
2X
4X
Treatment

FIGURE 7

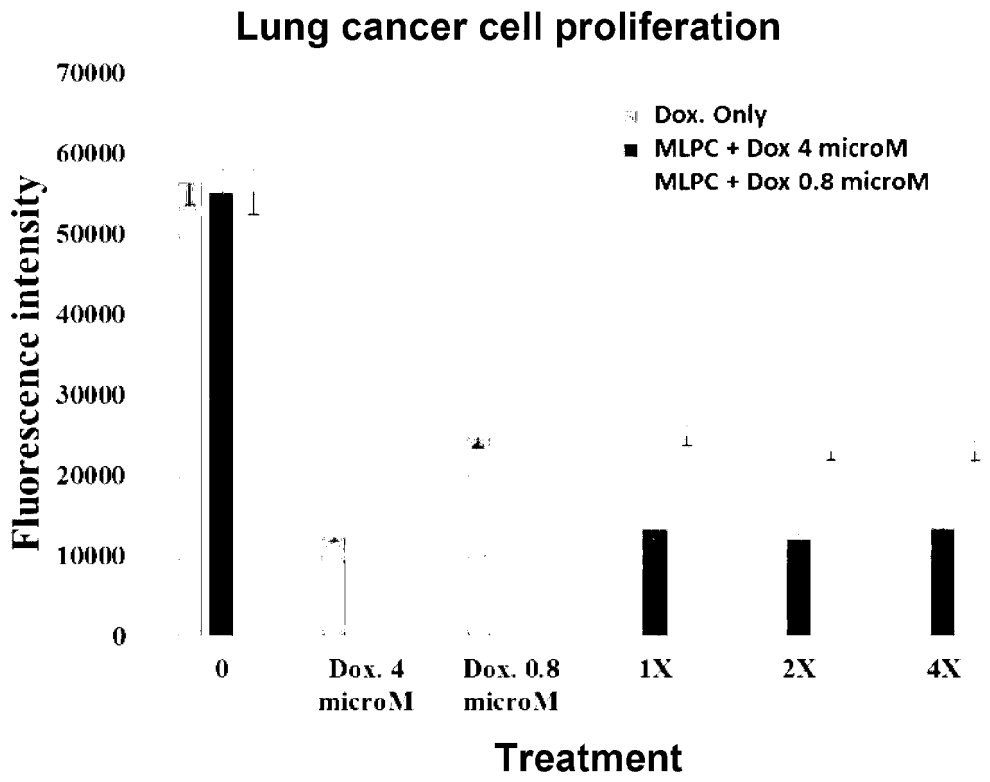
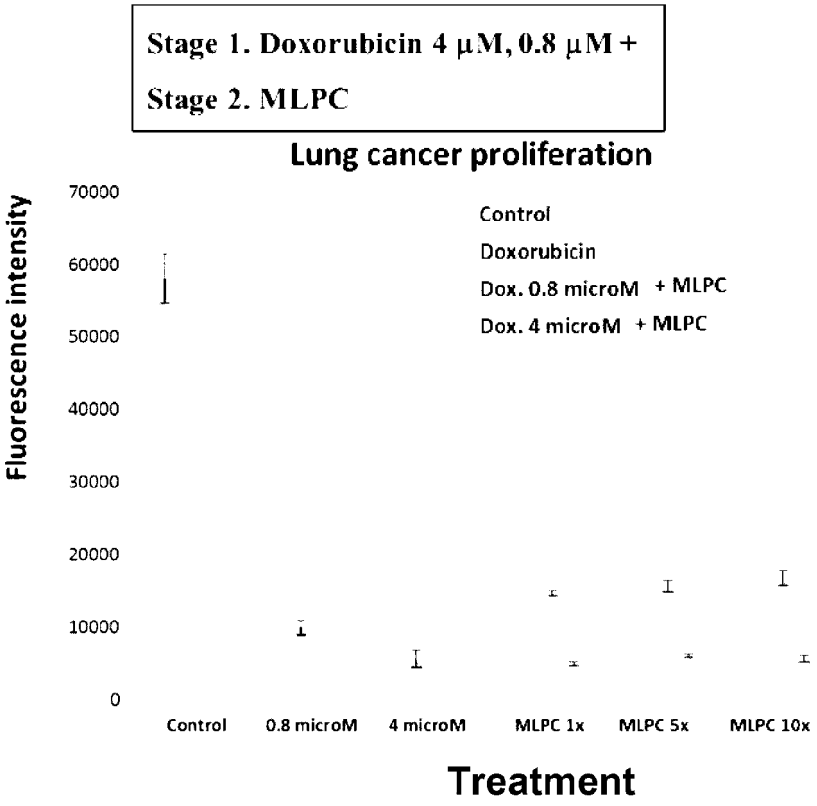

Lung cancer cell proliferation
Fluorescence intensity
70000
60000
50000
40000
30000
20000
10000
0
Dox. Only
MLPC + Dox 4 microM
MLPC + Dox 0.8 microM
0
Dox. 4 microM
Dox. 0.8 microM
1X
2X
4X
Treatment

FIGURE 8


Stage 1. Doxorubicin 4 μM, 0.8 μM +
Stage 2. MLPC
Lung cancer proliferation
Fluorescence intensity
70000
60000
50000
40000
30000
20000
10000
0
Control
Doxorubicin
Dox. 0.8 microM + MLPC
Dox. 4 microM + MLPC
Control
0.8 microM
4 microM
MLPC 1x
MLPC 5x
MLPC 10x
Treatment

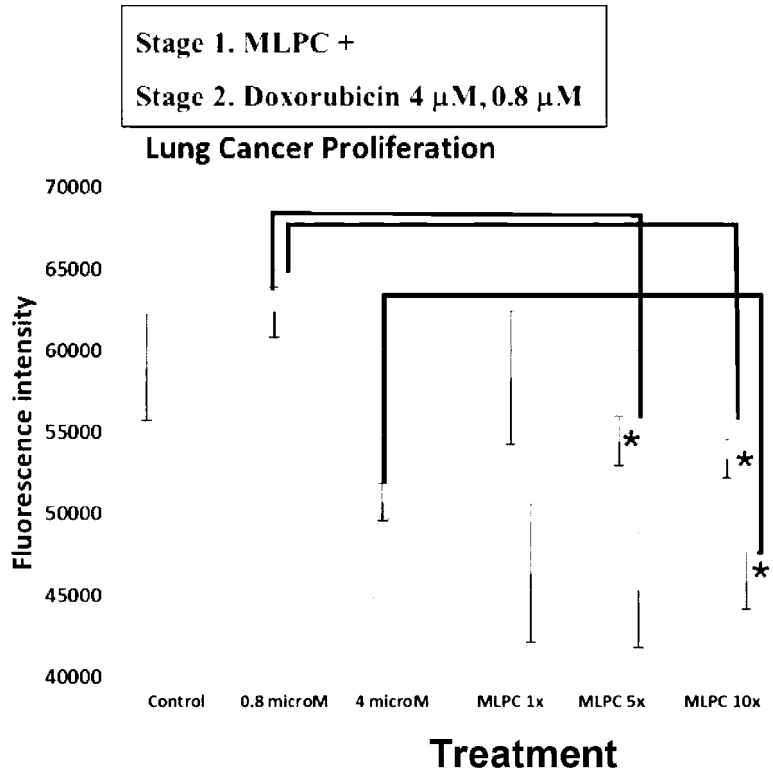

Stage 1. MLPC +
Stage 2. Doxorubicin 4 μM, 0.8 μM
Lung Cancer Proliferation
Fluorescence intensity
70000
65000
60000
55000
50000
45000
40000
*
*
*
Control
0.8 microM
4 microM
MLPC 1x
MLPC 5x
MLPC 10x
Treatment

FIGURE 9

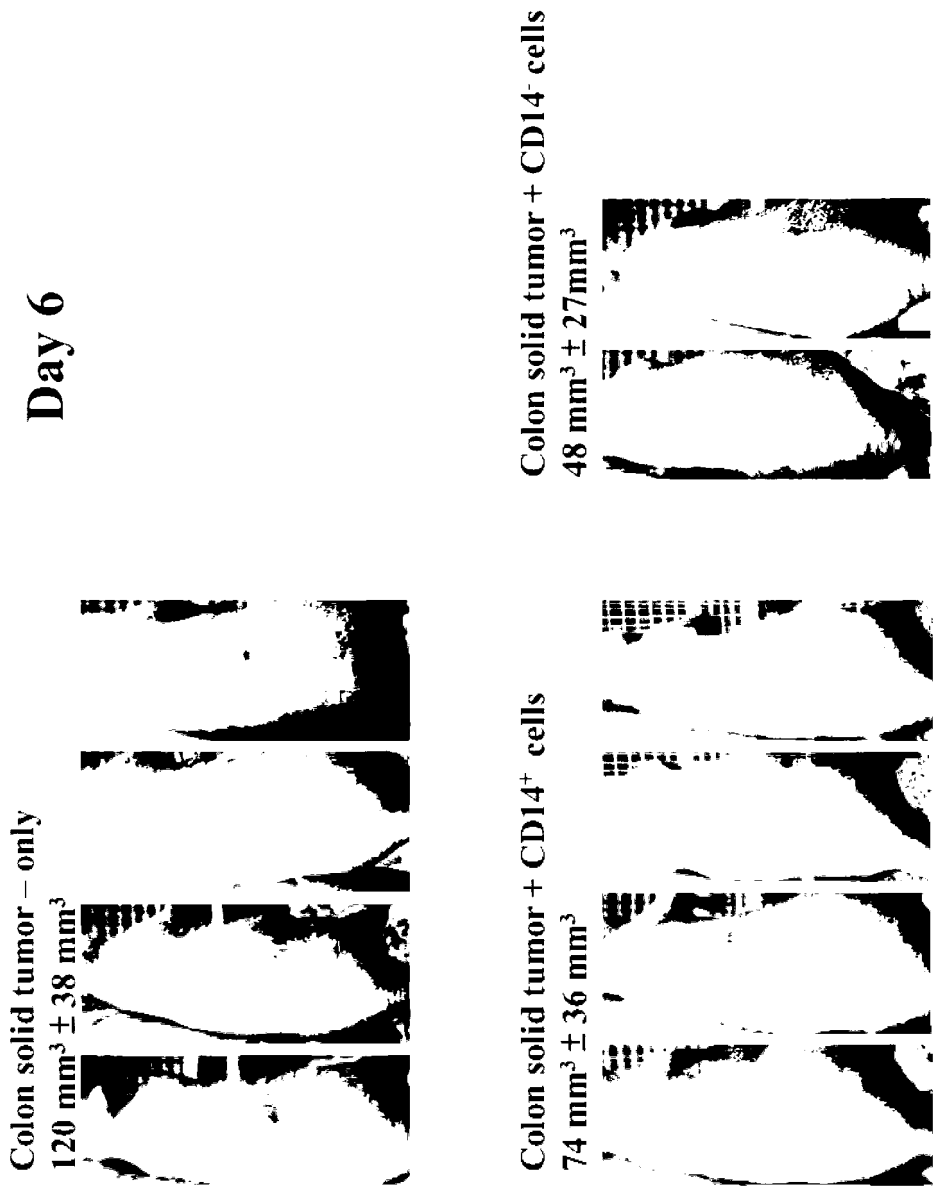

Day 6
Colon solid tumor – only
120 mm³ ± 38 mm³
Colon solid tumor + CD14⁻ cells
48 mm³ ± 27mm³
Colon solid tumor + CD14⁺ cells
74 mm³ ± 36 mm³

FIGURE 10

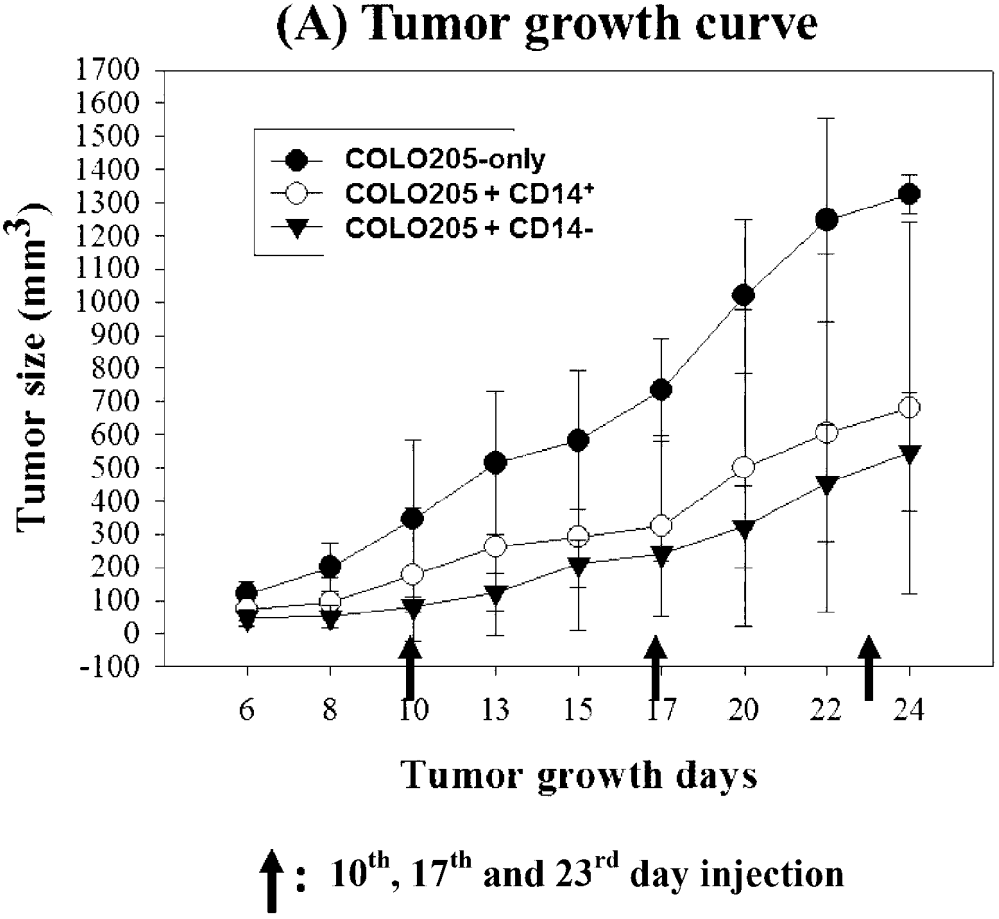
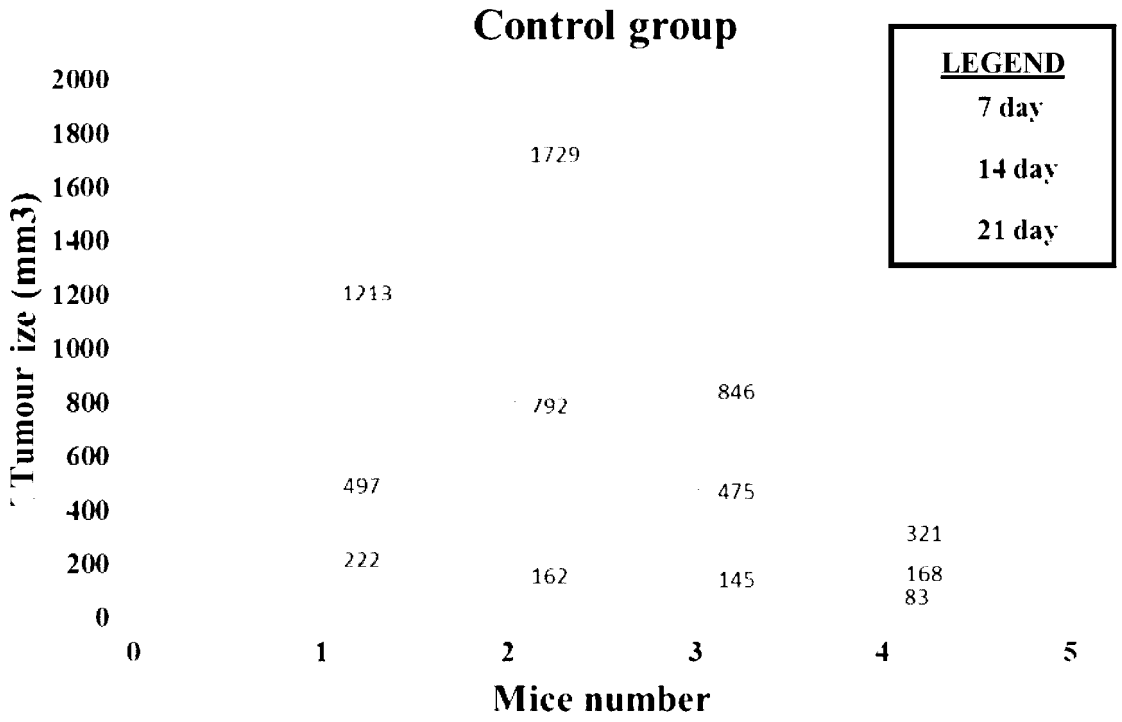

(A) Tumor growth curve
Tumor size (mm3)
1700
1600
1500
1400
1300
1200
1100
1000
900
800
700
600
500
400
300
200
100
0
-100
COLO205-only
COLO205 + CD14+
COLO205 + CD14-
6
8
10
13
15
17
20
22
24
Tumor growth days
: 10th, 17th and 23rd day injection

FIGURE 11


Control group
LEGEND
7 day
14 day
21 day
Tumour ize (mm3)
2000
1800
1600
1400
1200
1000
800
600
400
200
0
1729
1213
846
792
497
475
321
222
162
145
168
83
0
1
2
3
4
5
Mice number

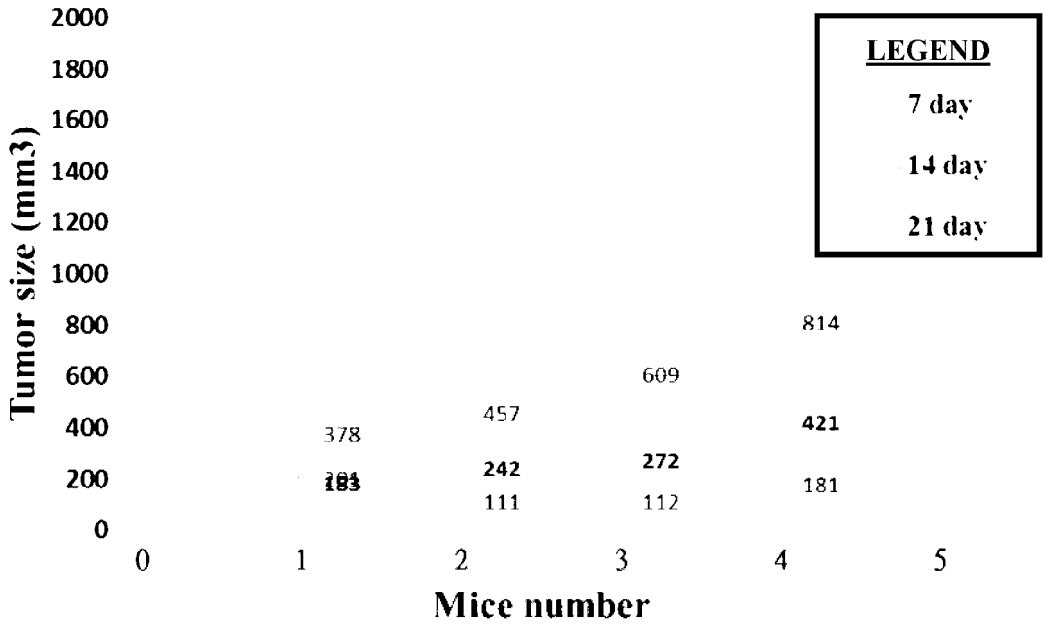
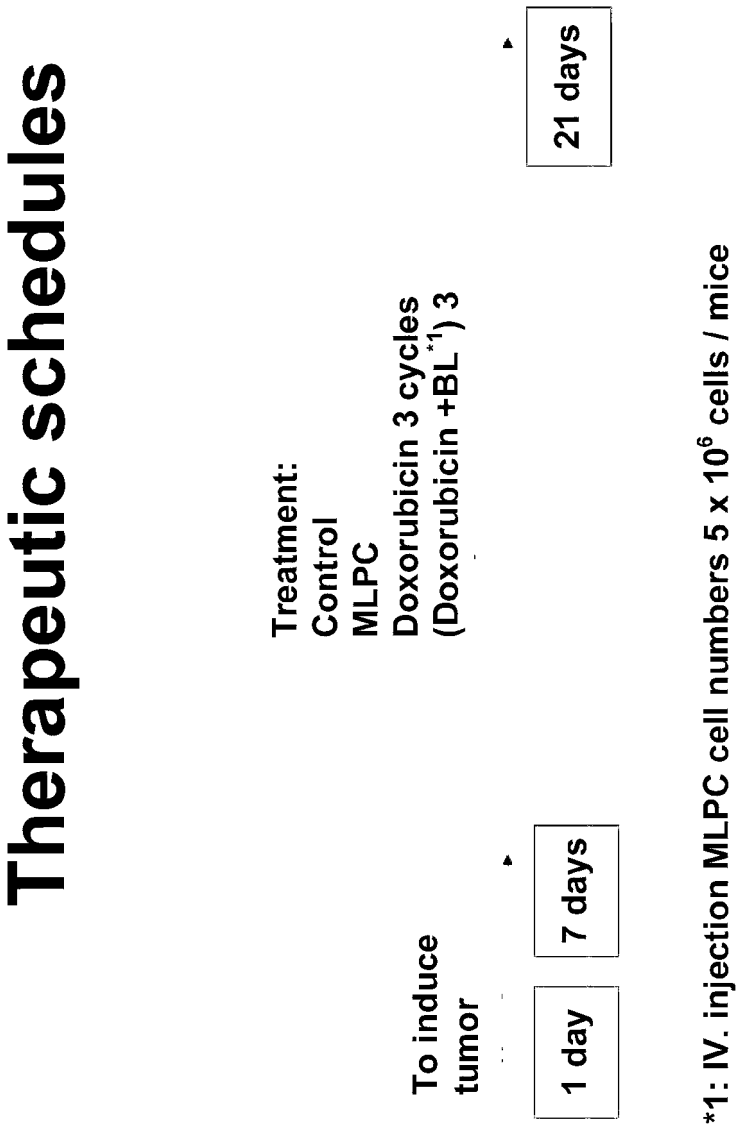

Doxorubicin 4 mg/kg 3 cycles, MLPC 1 cycle
LEGEND
7 day
14 day
21 day
Tumor size (mm3)
2000
1800
1600
1400
1200
1000
800
600
400
200
0
814
609
457
421
378
272
242
181
111
112
0
1
2
3
4
5
Mice number

FIGURE 12


Therapeutic schedules
Treatment:
Control
MLPC
Doxorubicin 3 cycles
(Doxorubicin +BL*1) 3
To induce tumor
1 day
7 days
21 days
*1: IV. injection MLPC cell numbers 5 x 10^6 cells / mice