FIG. 1A

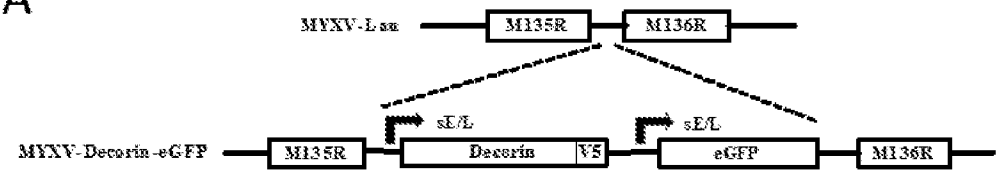


FIG. 1B

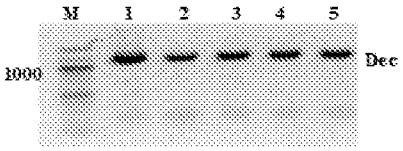


FIG. 1C

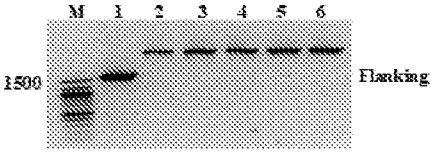


FIG. 1D

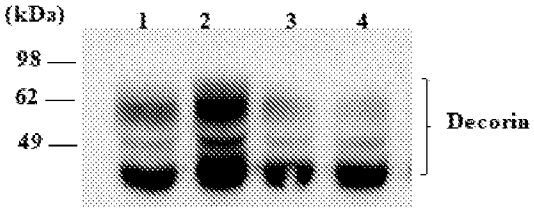


FIG. 1E

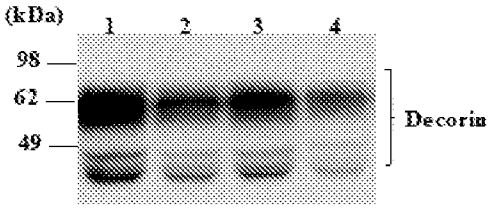


FIG. 1F

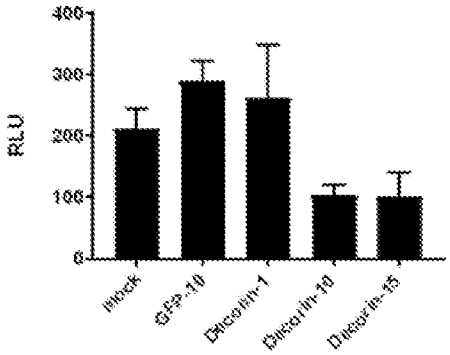


FIG. 1G

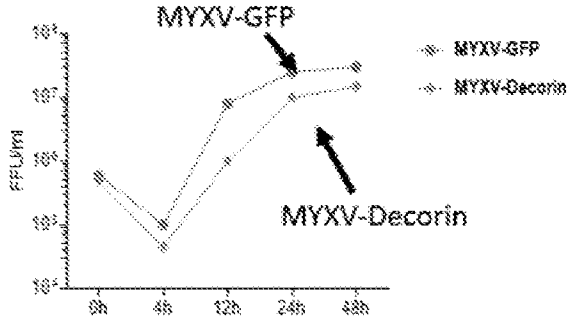


FIG. 2A

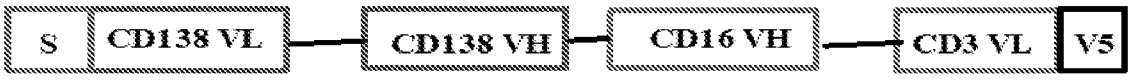


FIG. 2B

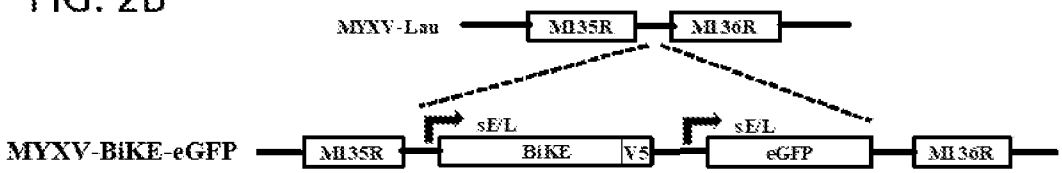


FIG. 2C

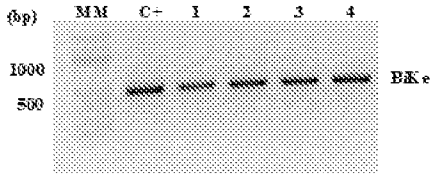


FIG. 2D

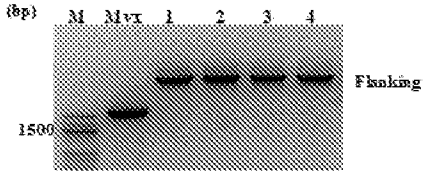


FIG. 2E

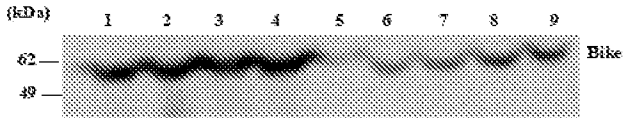
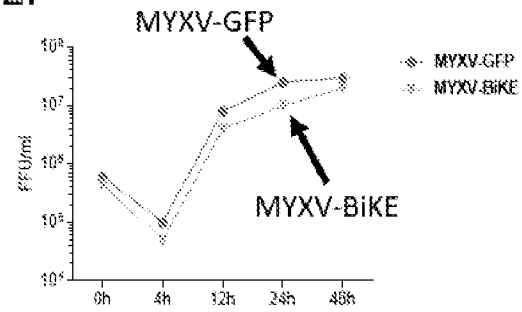


FIG. 2F



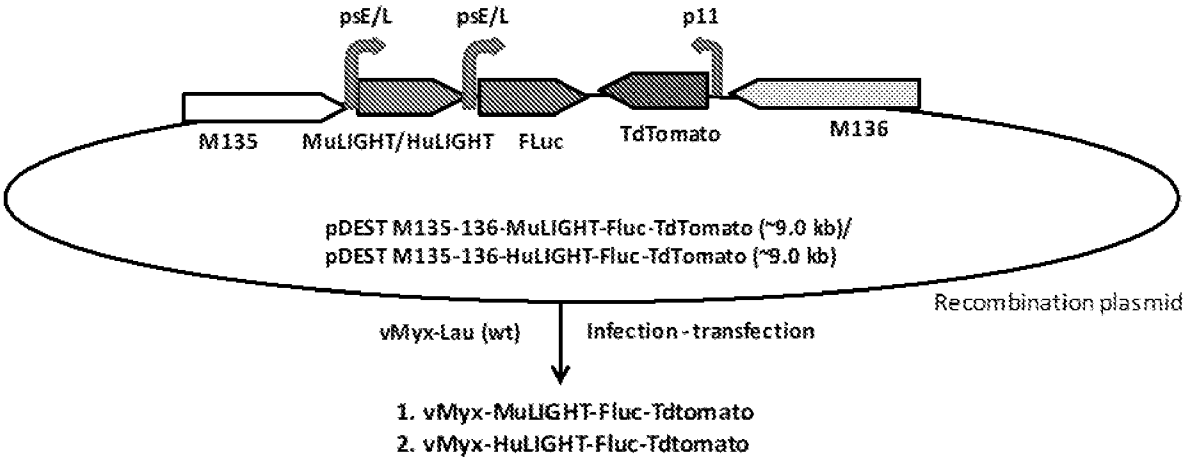

psE/L
psE/L
p11
M135
MuLIGHT/HuLIGHT
FLuc
TdTomato
M136
pDEST M135-136-MuLIGHT-Fluc-TdTomato (~9.0 kb)/
pDEST M135-136-HuLIGHT-Fluc-TdTomato (~9.0 kb)
Recombination plasmid
vMyx-Lau (wt)
Infection - transfection
1. vMyx-MuLIGHT-Fluc-Tdtomato
2. vMyx-HuLIGHT-Fluc-Tdtomato

FIG. 3

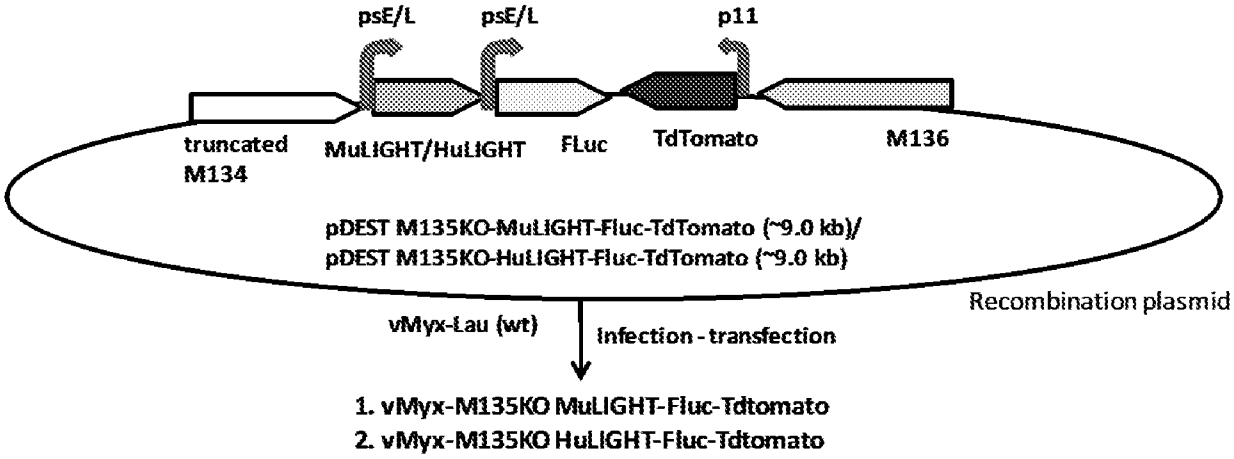

psE/L
psE/L
p11
truncated M134
MuLIGHT/HuLIGHT
FLuc
TdTomato
M136
pDEST M135KO-MuLIGHT-Fluc-TdTomato (~9.0 kb)/
pDEST M135KO-HuLIGHT-Fluc-TdTomato (~9.0 kb)
Recombination plasmid
vMyx-Lau (wt)
Infection - transfection
1. vMyx-M135KO MuLIGHT-Fluc-Tdtomato
2. vMyx-M135KO HuLIGHT-Fluc-Tdtomato

FIG. 4

FIG. 5A

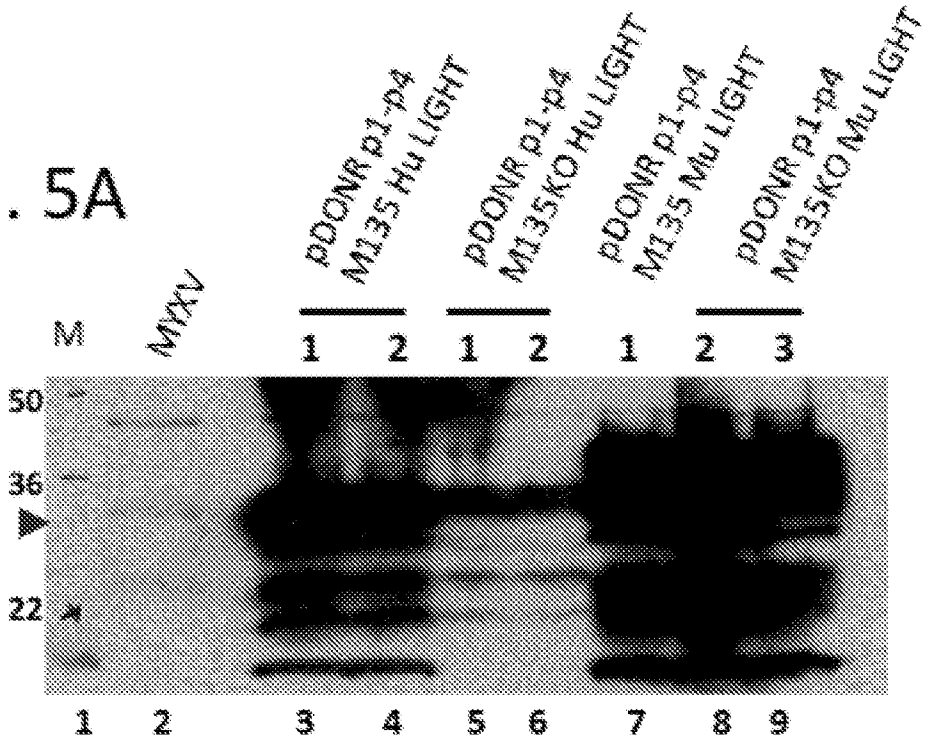

M
MYXV
pDONR p1-p4 M135 Hu LIGHT
pDONR p1-p4 M135KO Hu LIGHT
pDONR p1-p4 M135 Mu LIGHT
pDONR p1-p4 M135KO Mu LIGHT
1 2 1 2 1 2 3
50
36
22
1 2 3 4 5 6 7 8 9

FIG. 5B

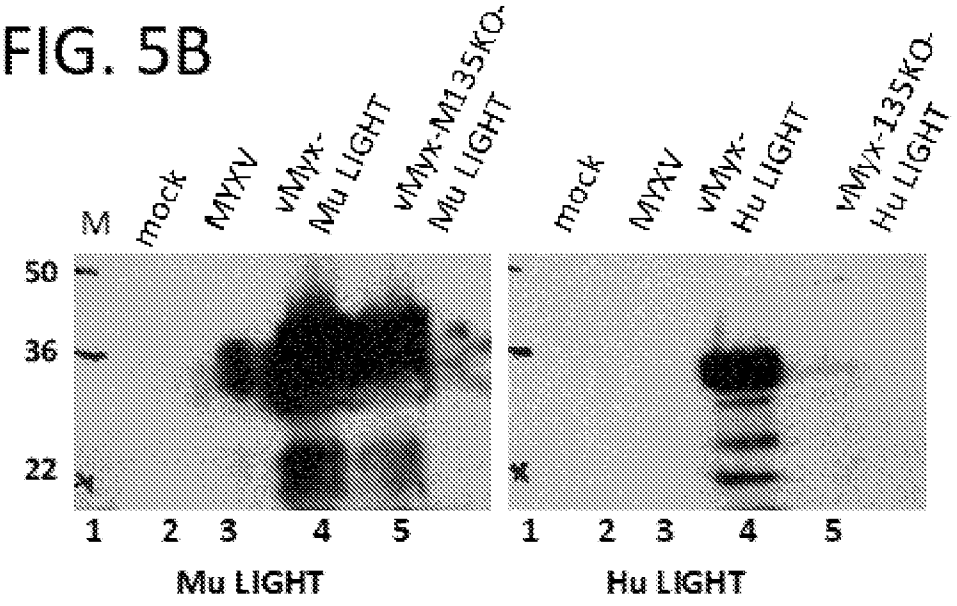

M
mock
MYXV
vMyx-Mu LIGHT
vMyx-M135KO-Mu LIGHT
mock
MYXV
vMyx-Hu LIGHT
vMyx-135KO-Hu LIGHT
50
36
22
1 2 3 4 5
1 2 3 4 5
Mu LIGHT
Hu LIGHT

FIG. 6A

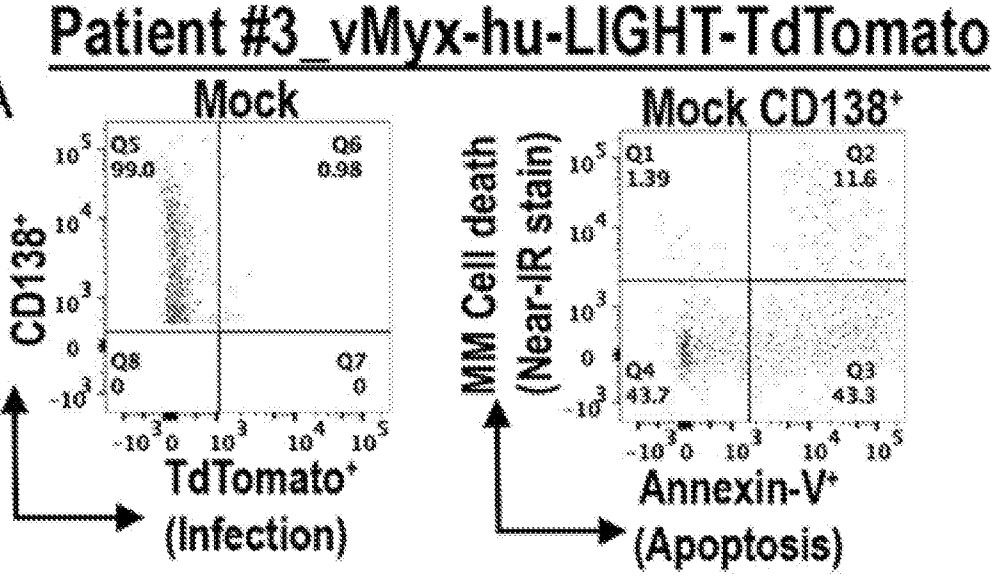


FIG. 6B

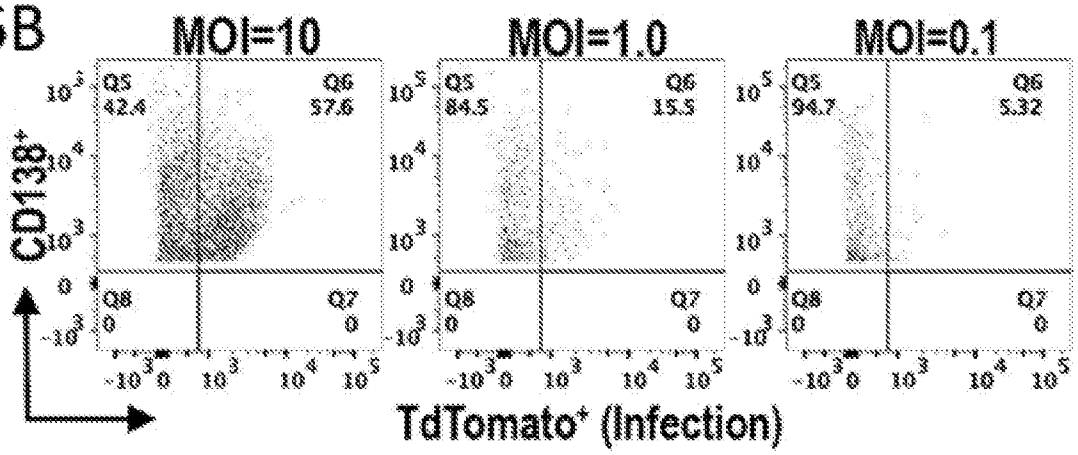


FIG. 6C

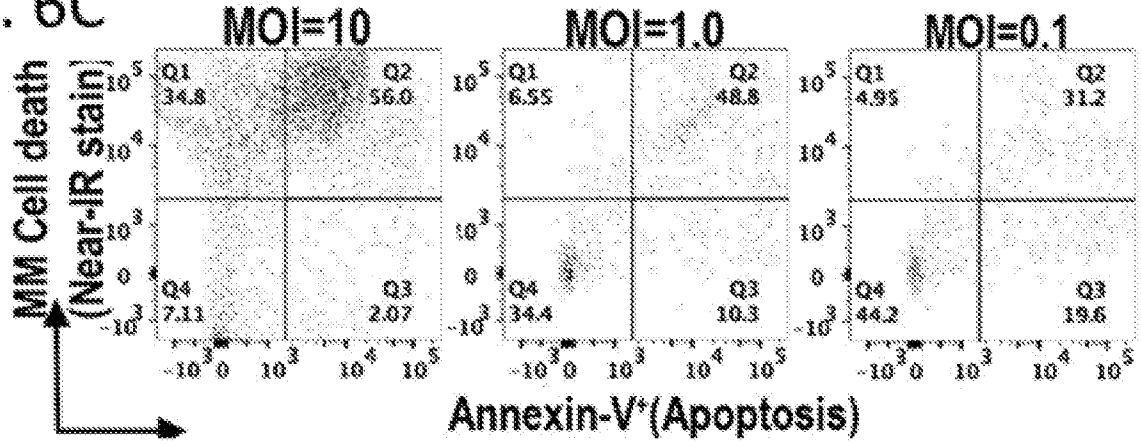


FIG. 7A

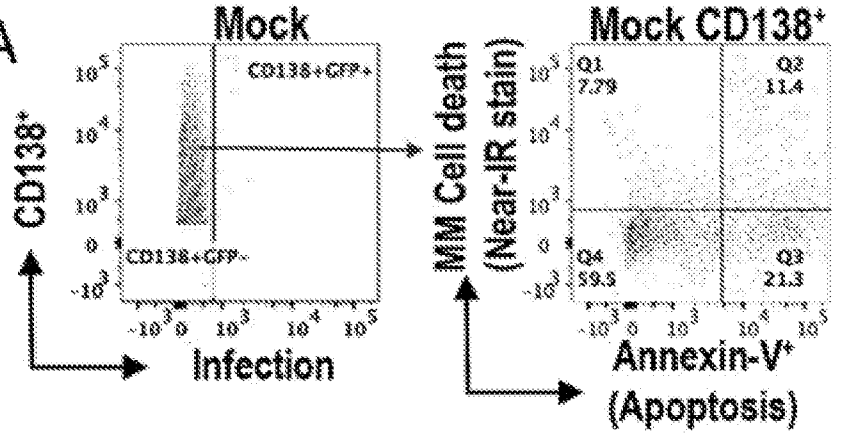

Patient #3_vMyx-huLIGHT gating on CD138+TdTomato-
Mock
CD138+GFP+
CD138+GFP-
CD138+
Infection
Mock CD138+
Q1
7.79
Q2
11.4
Q4
59.5
Q3
21.3
MM Cell death
(Near-IR stain)
Annexin-V+
(Apoptosis)

FIG. 7B

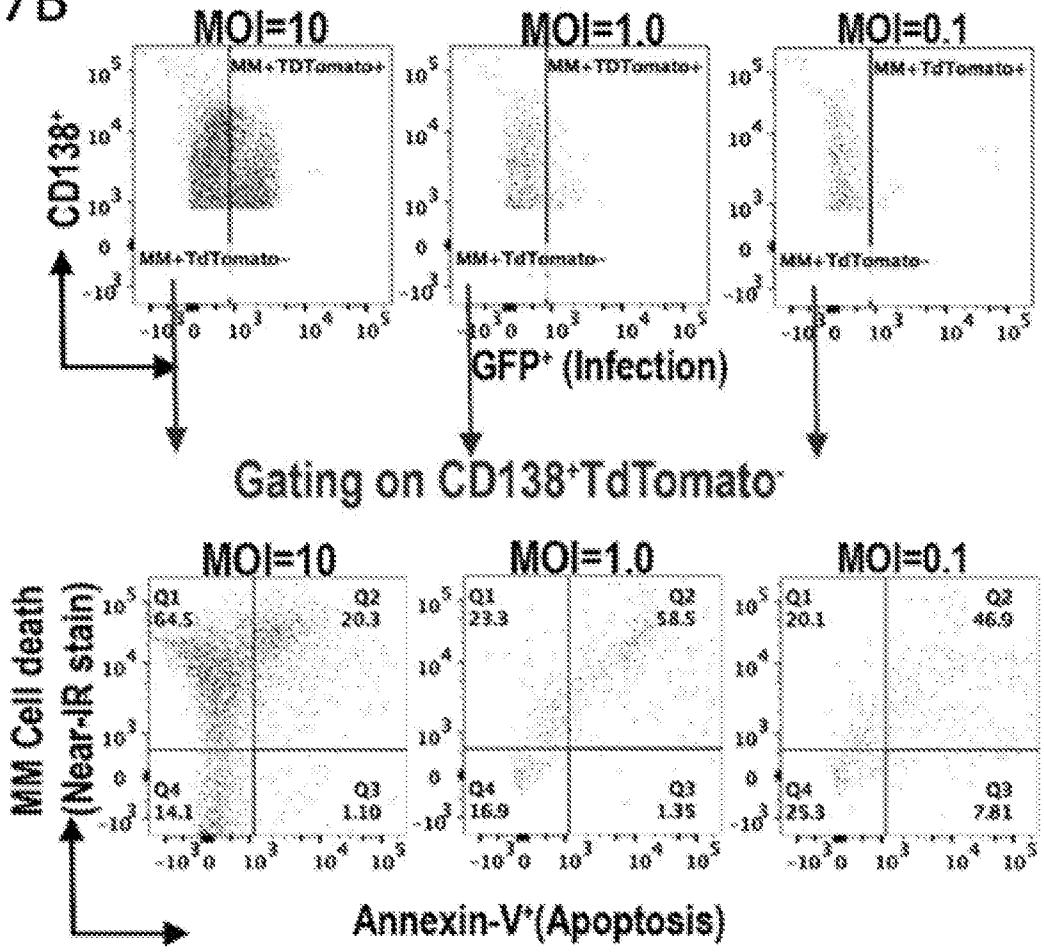

MOI=10
MOI=1.0
MOI=0.1
MM+TDTomato+
MM+TdTomato-
CD138+
GFP+ (Infection)
Gating on CD138+TdTomato-
MM Cell death
(Near-IR stain)
Q1
64.5
Q2
20.3
Q4
14.1
Q3
1.10
Q1
23.3
Q2
58.5
Q4
16.9
Q3
1.35
Q1
20.1
Q2
46.9
Q4
25.3
Q3
7.81
Annexin-V+(Apoptosis)

FIG. 8A

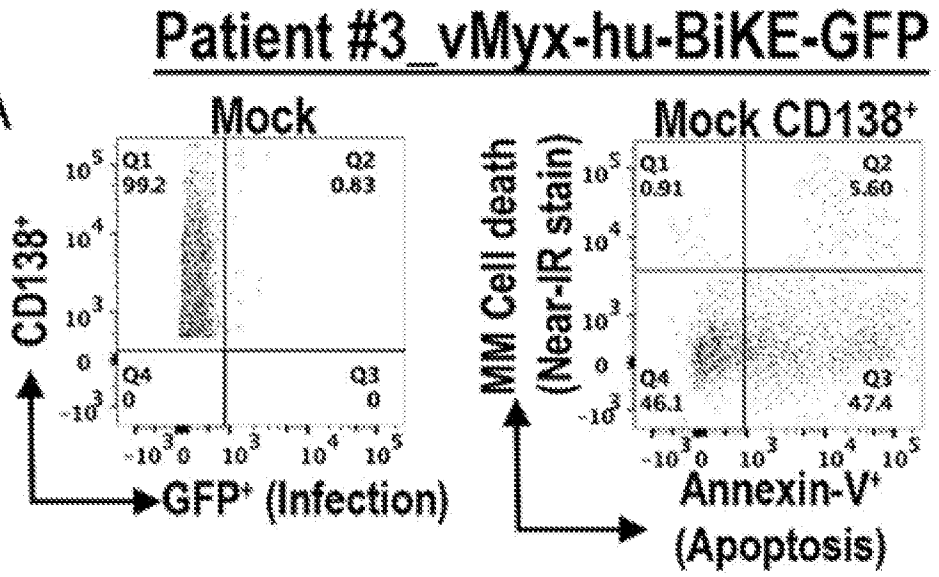


FIG. 8B

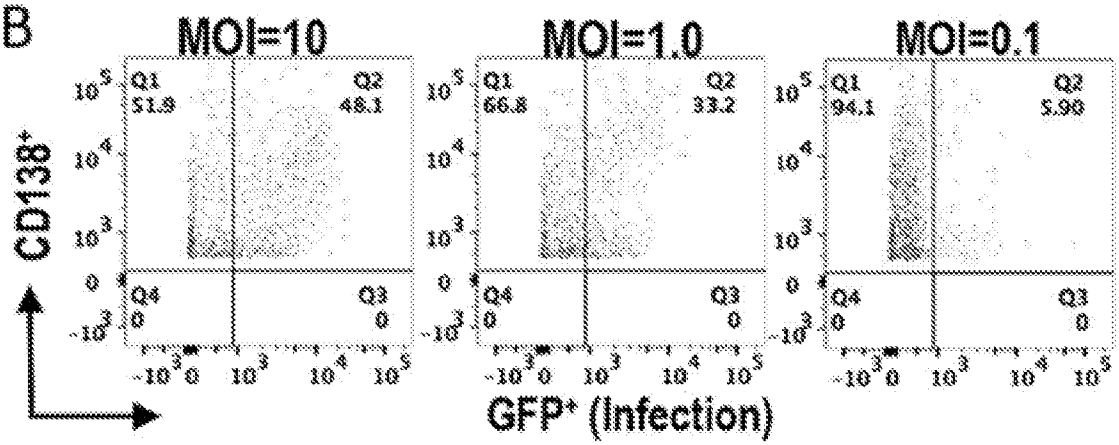
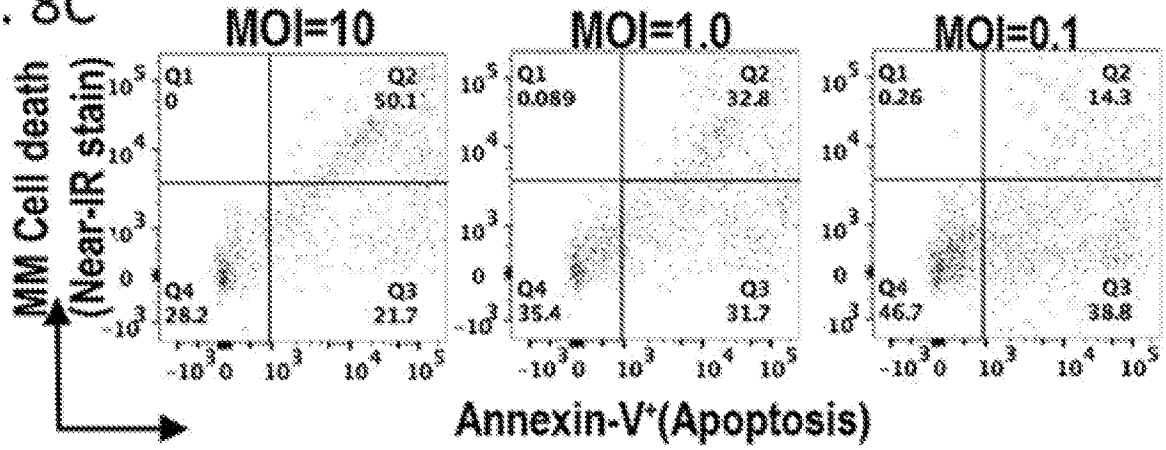


FIG. 8C



Patient #3_vMyx-huBiKE-GFP gating on CD138+GFP-

FIG. 9A

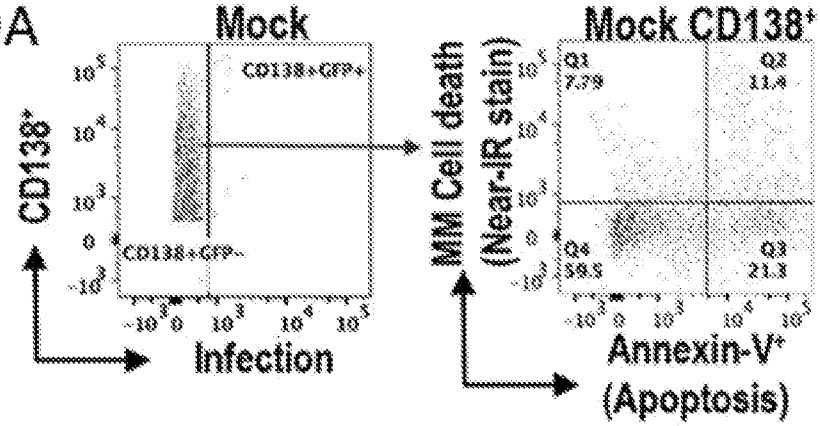


FIG. 9B

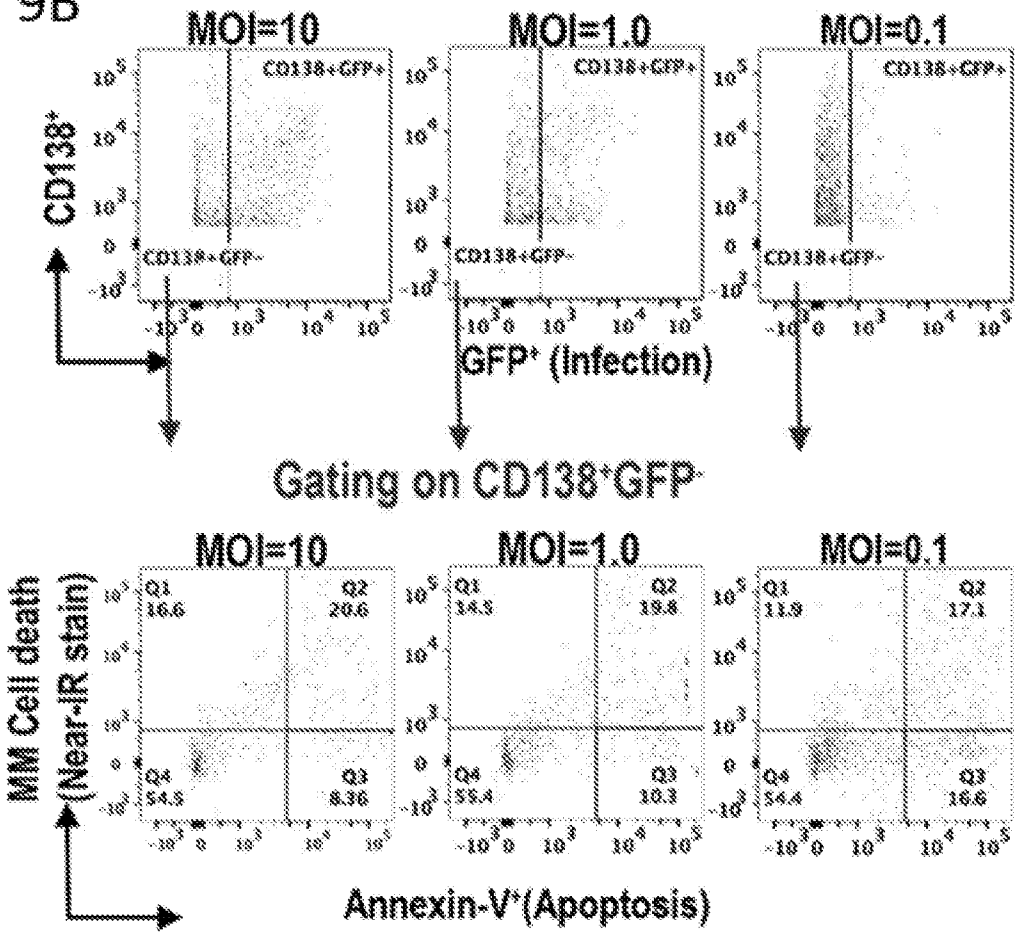


FIG. 10A

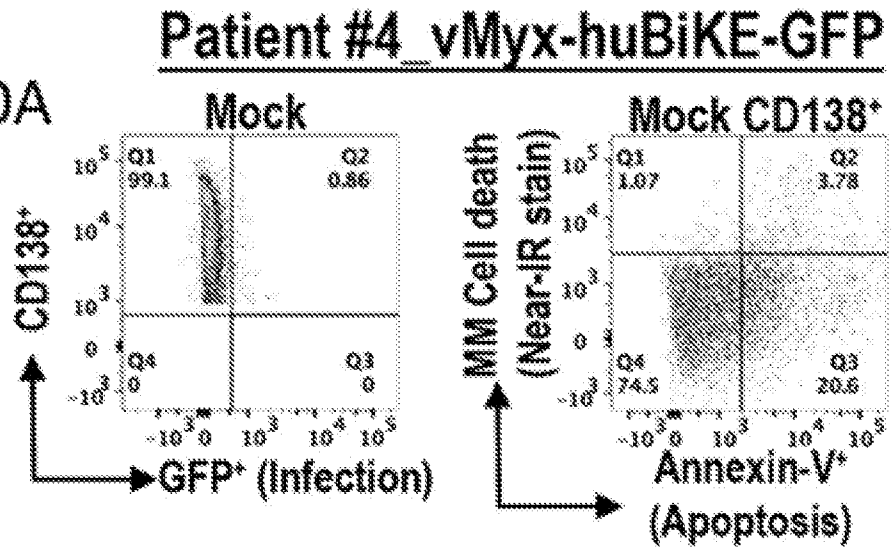


FIG. 10B

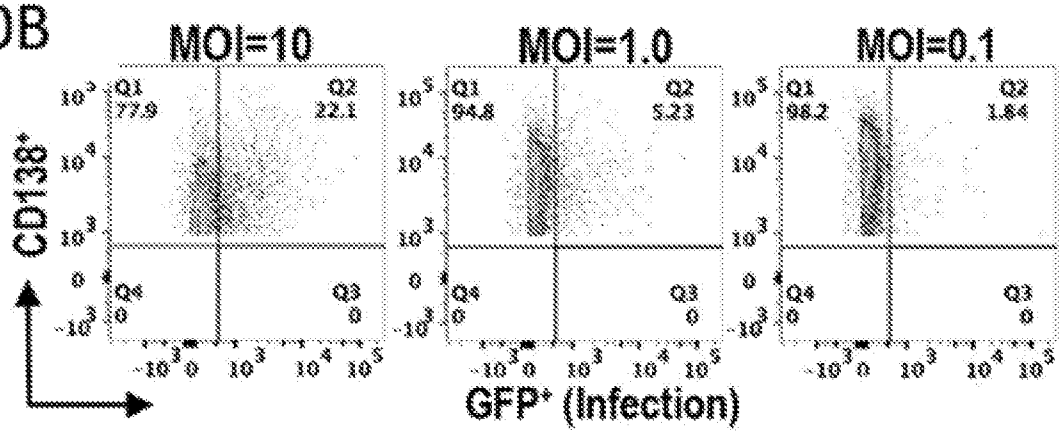
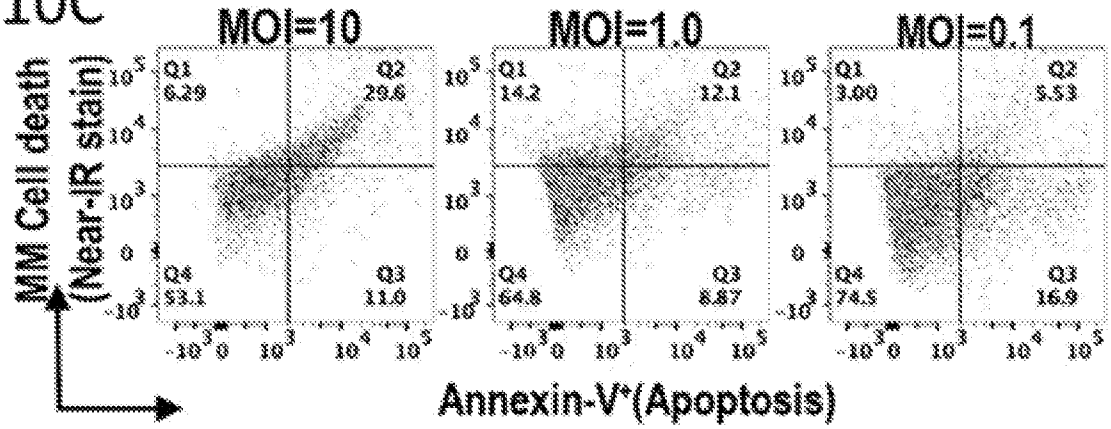


FIG. 10C



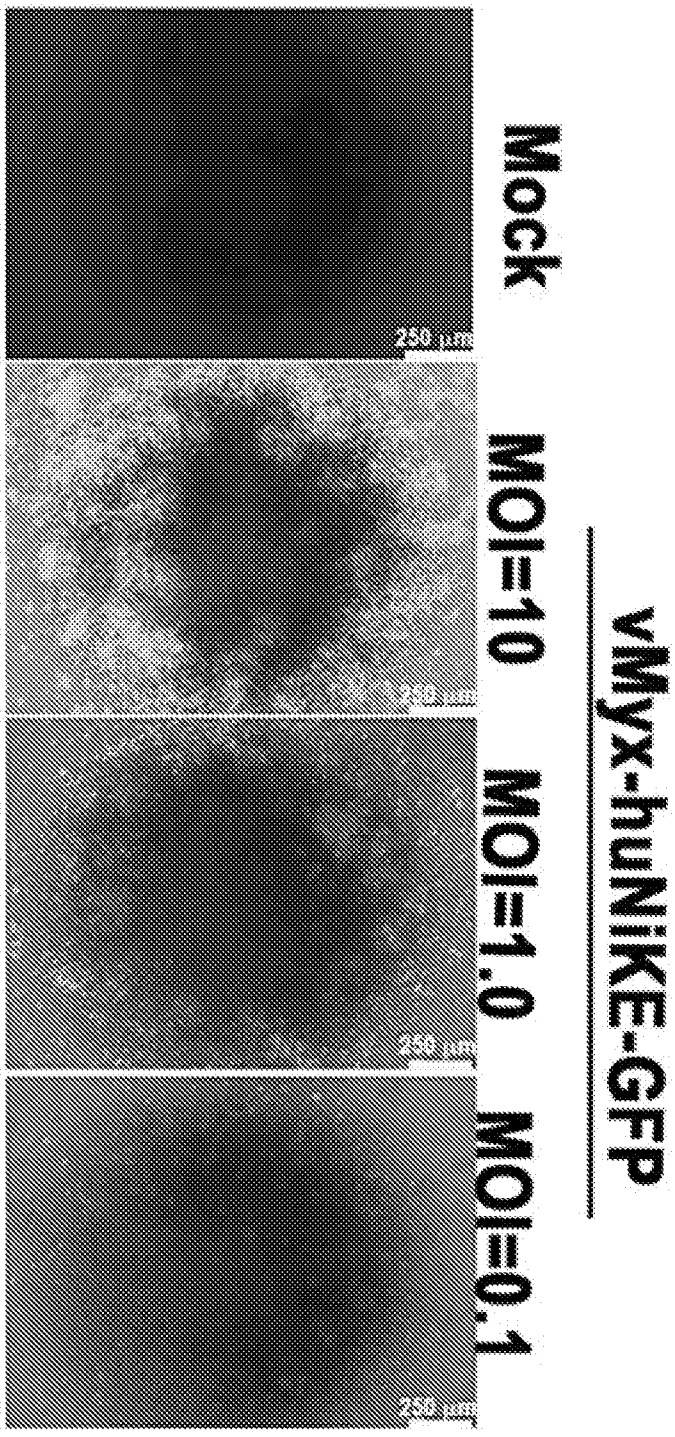

Mock
MOI=10
MOI=1.0
MOI=0.1
250 µm
250 µm
250 µm
250 µm
vMyx-huNiKE-GFP

FIG. 10D

FIG. 11A

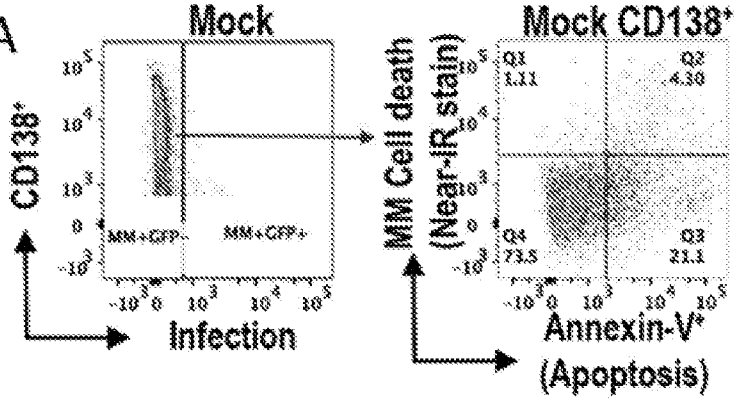


FIG. 11B

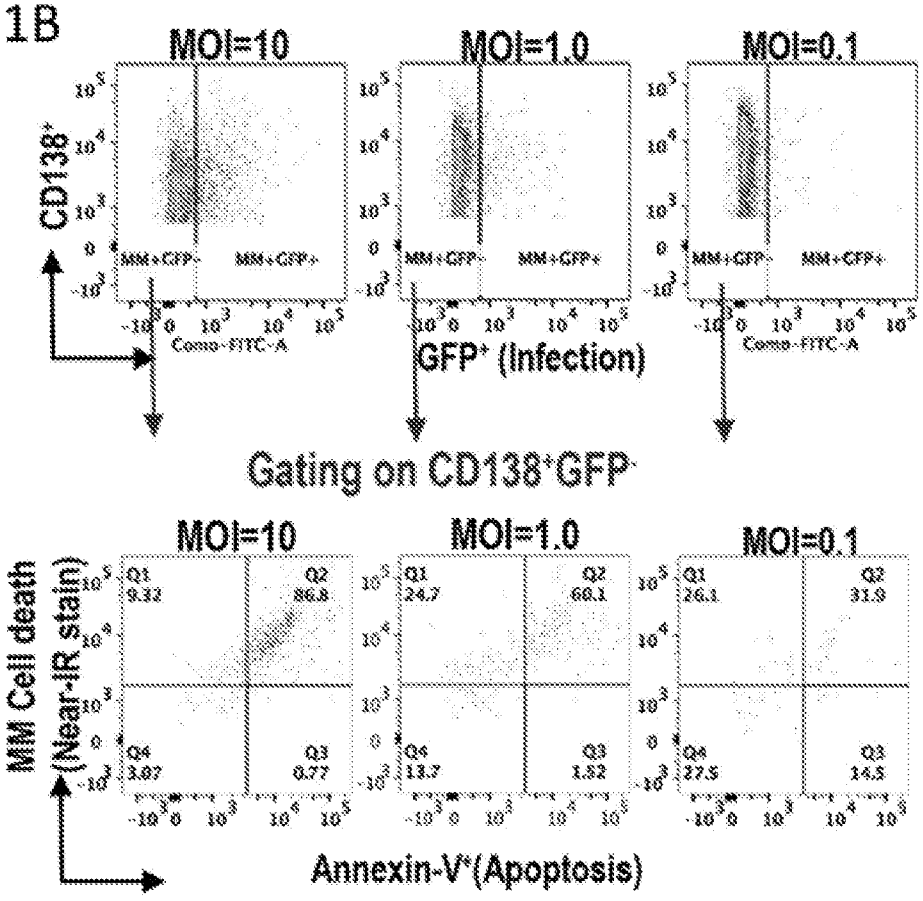


FIG. 12A

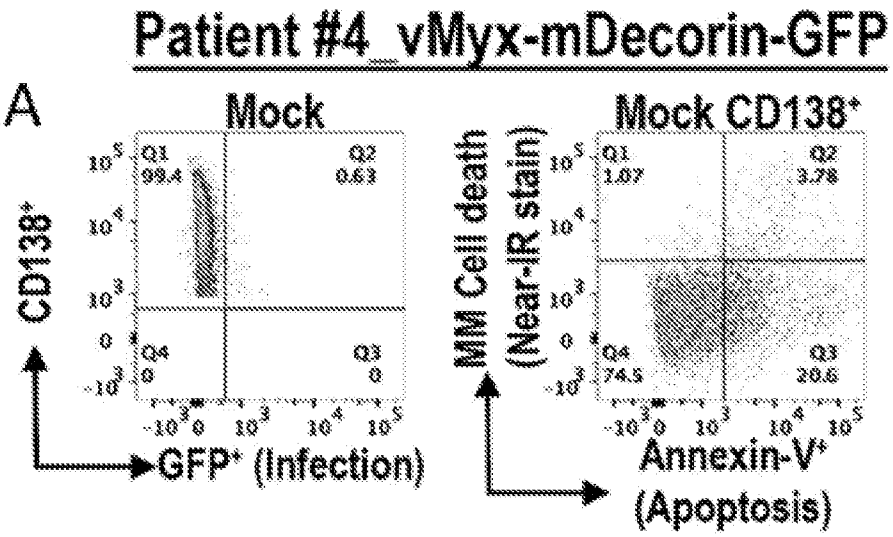


FIG. 12B

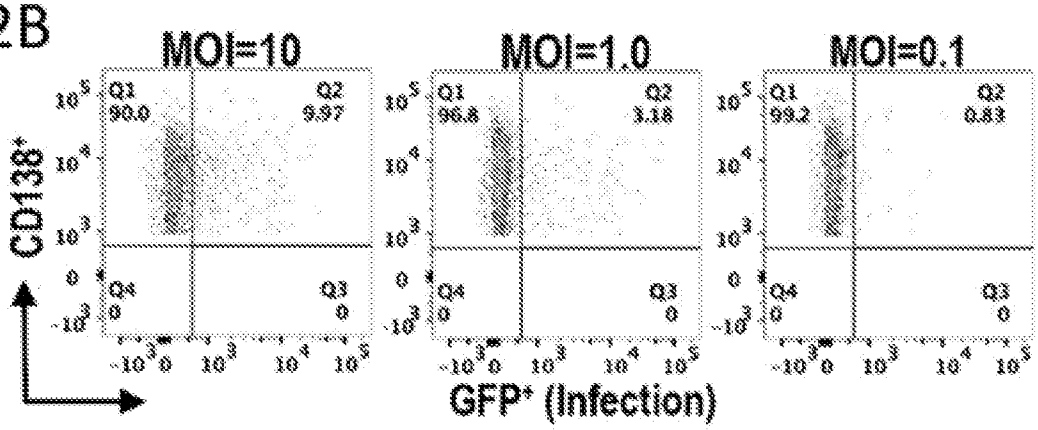
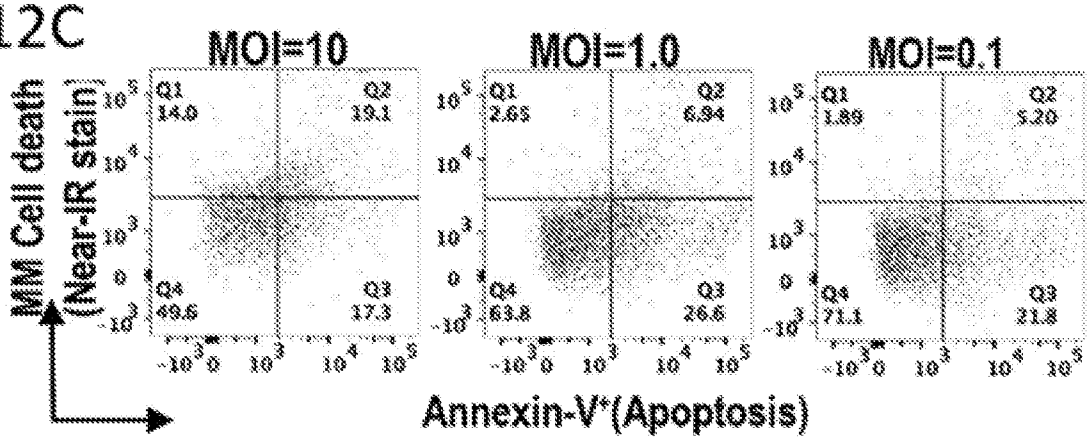


FIG. 12C



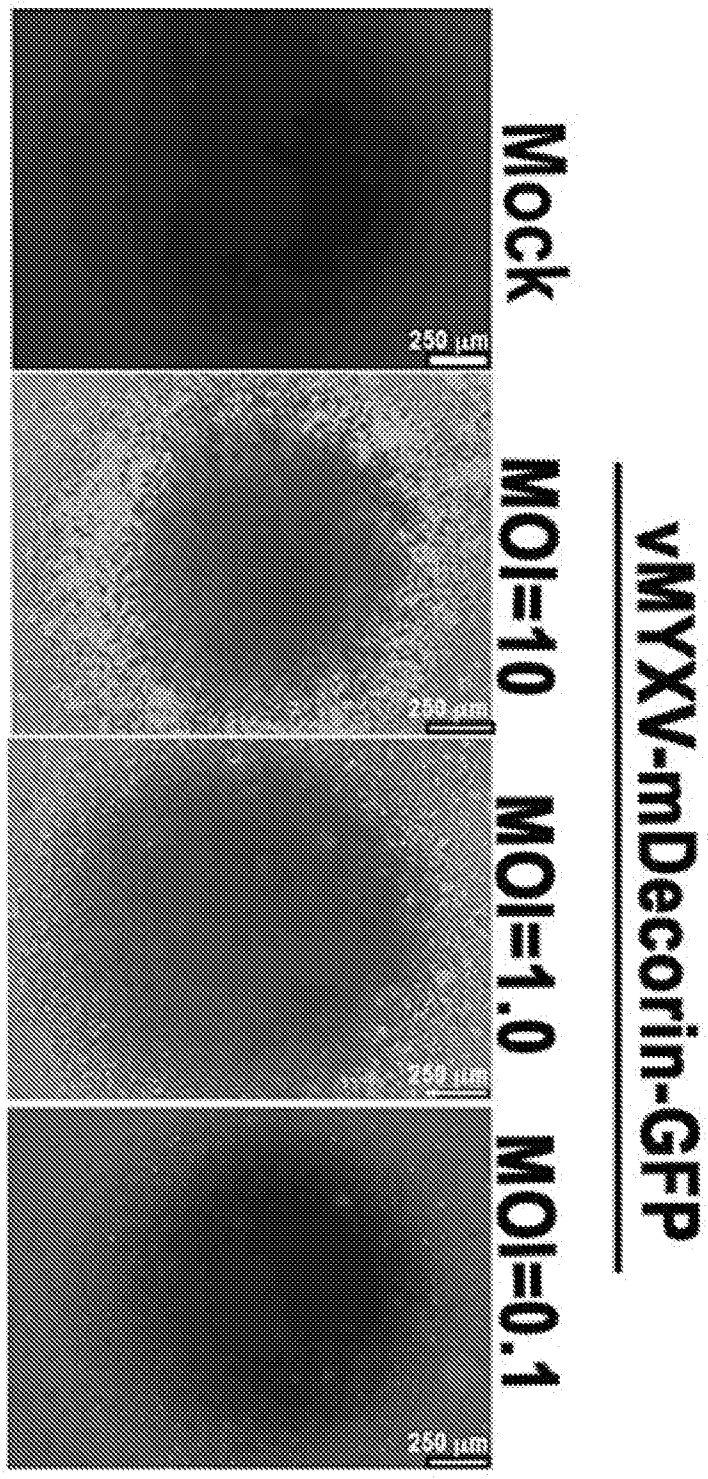

vMYXV-mDecorin-GFP
Mock
MOI=10
MOI=1.0
MOI=0.1
250 µm
250 µm
250 µm
250 µm

FIG. 12D

Patient #4_vMyx-mDecorin-GFP gating on CD138+GFP-

FIG. 13A

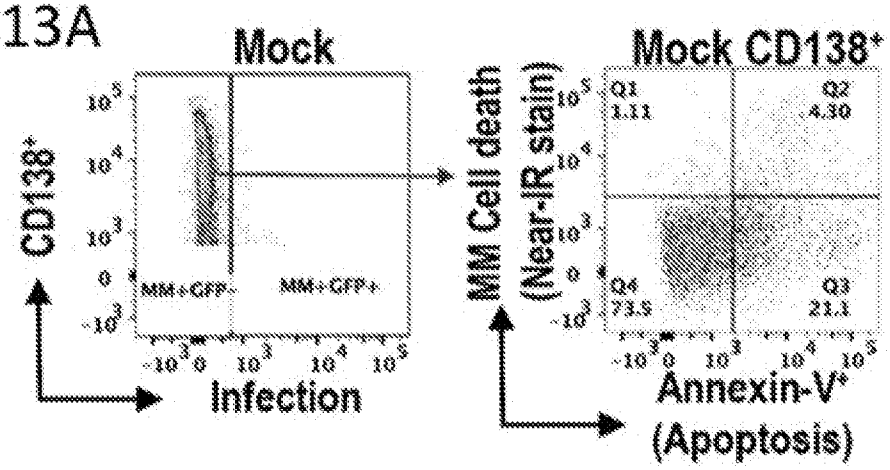
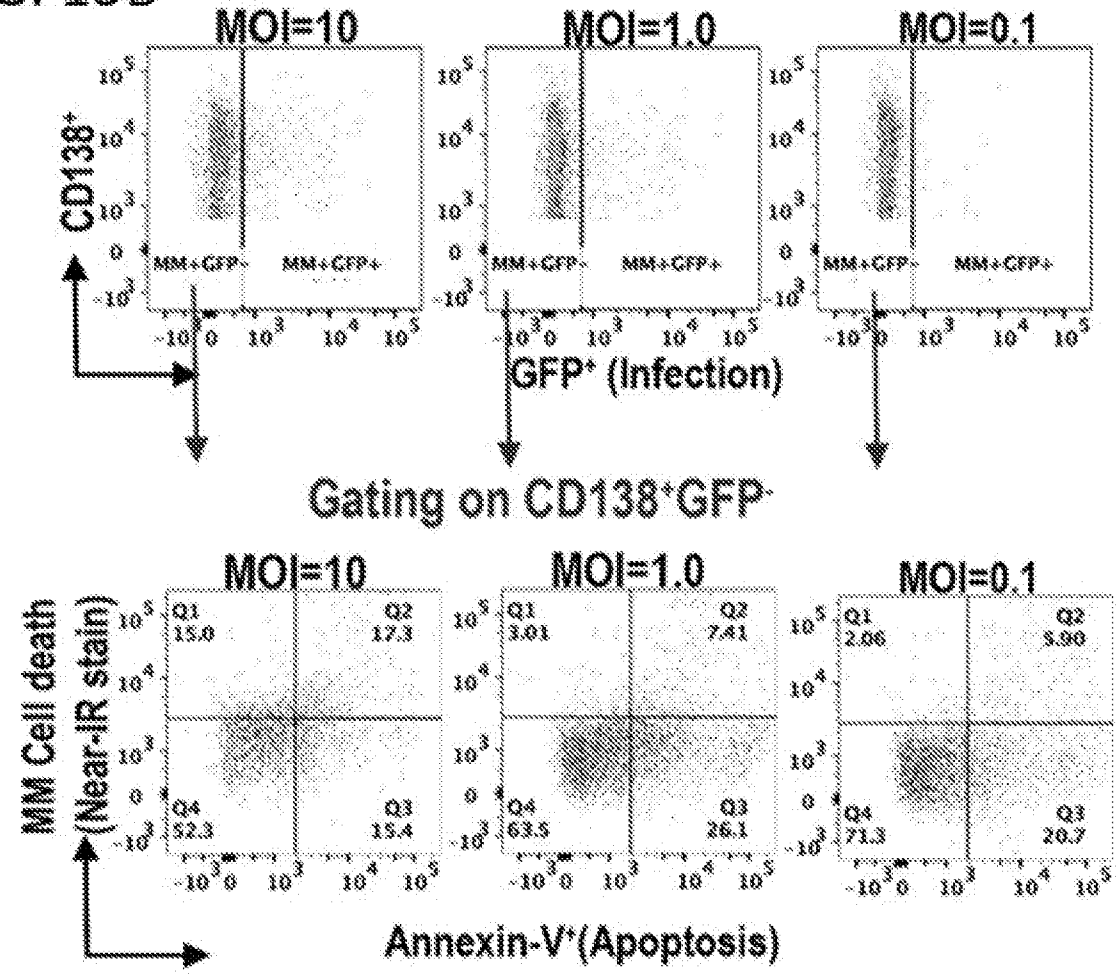


FIG. 13B



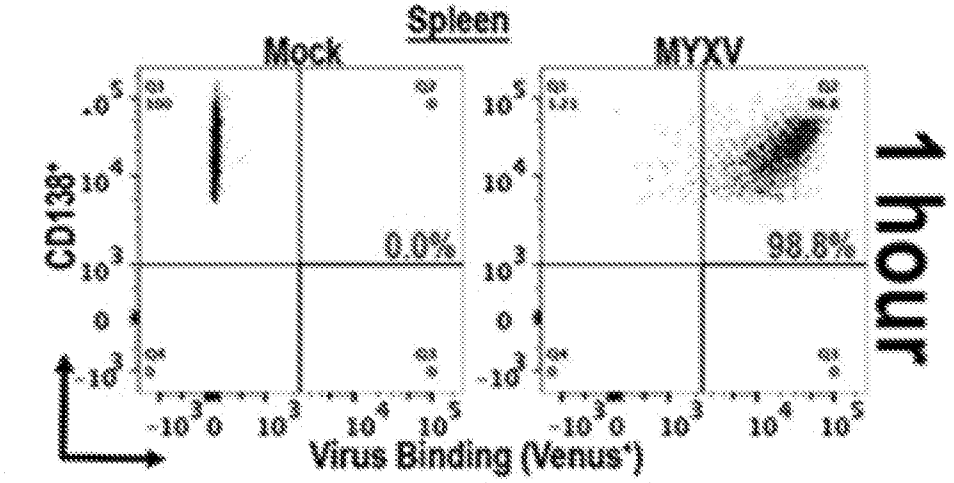


FIG. 14A

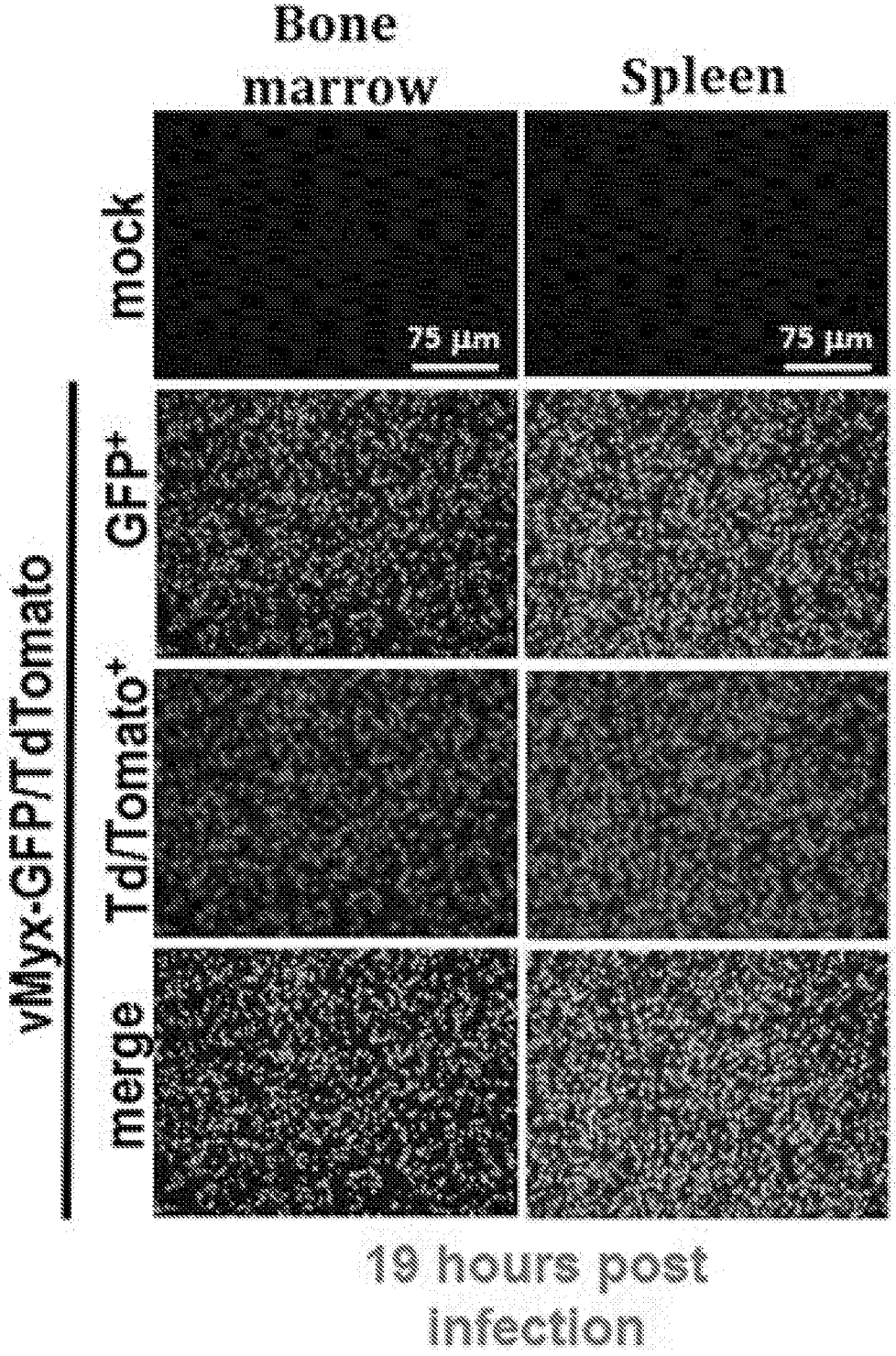

Bone marrow
Spleen
mock
GFP+
Td/Tomato+
merge
vMyx-GFP/TdTomato
75 µm
75 µm
19 hours post infection

FIG. 14B

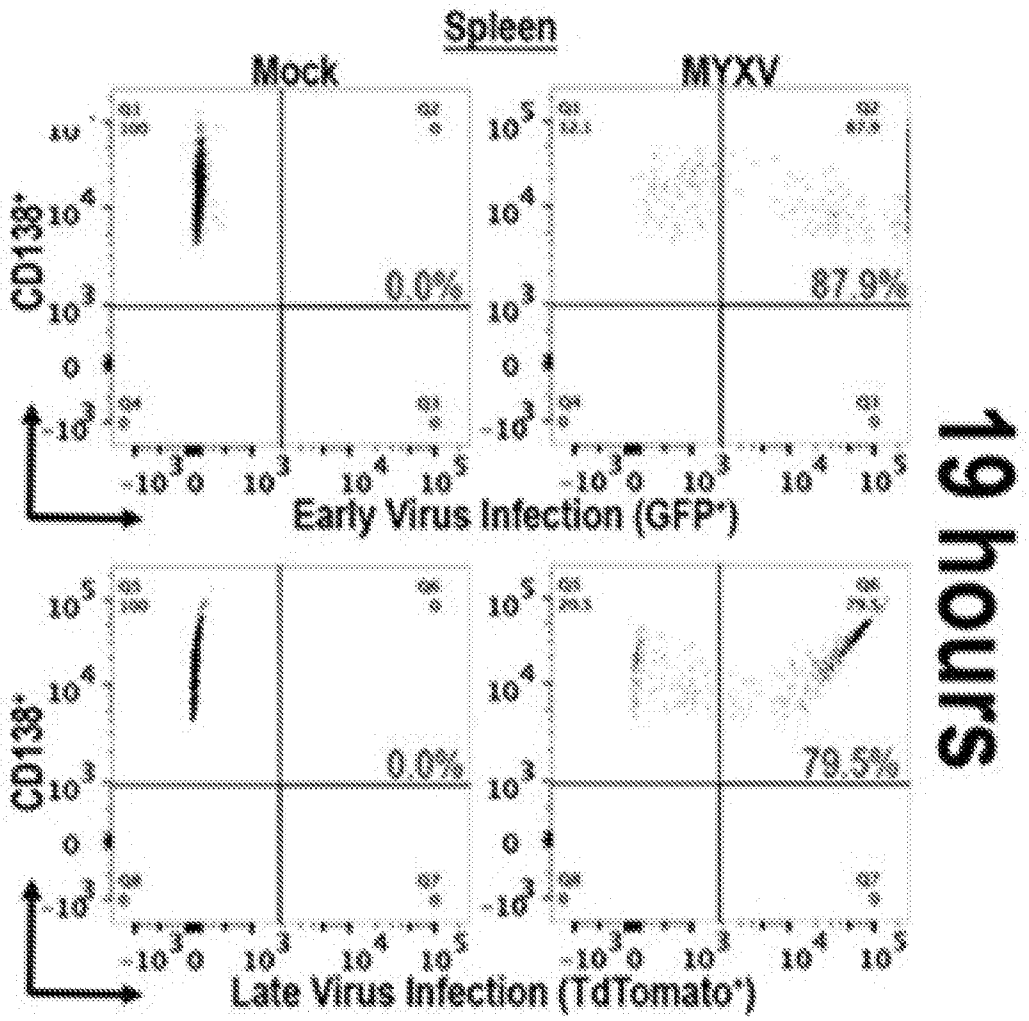
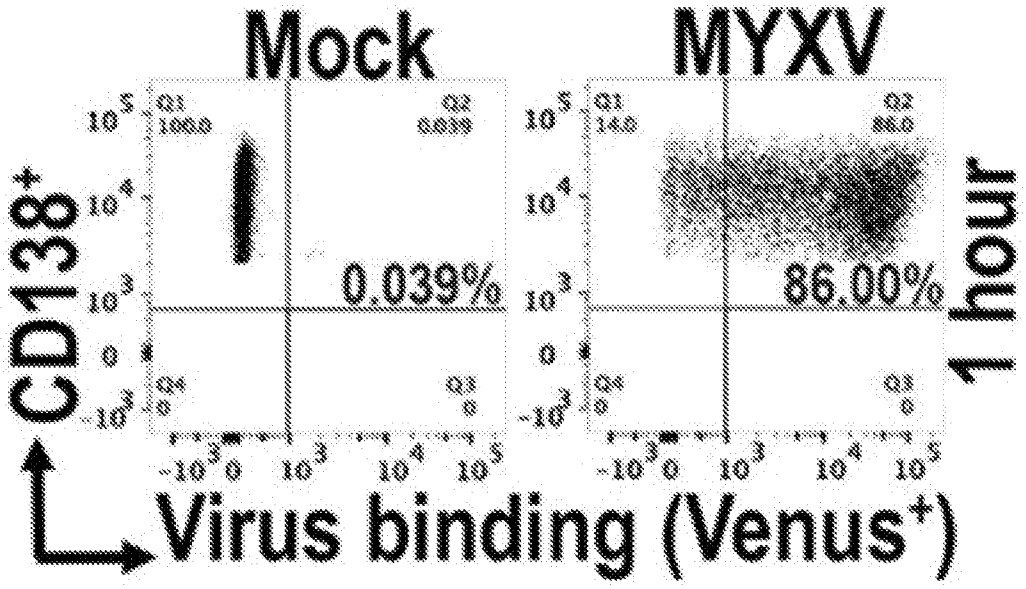

Spleen
Mock
MYXV
CD138+
0.0%
87.9%
Early Virus Infection (GFP+)
19 hours
0.0%
79.5%
Late Virus Infection (TdTomato+)

FIG. 14C


Mock
MYXV
CD138+
Virus binding (Venus+)
0.039%
86.00%
1 hour

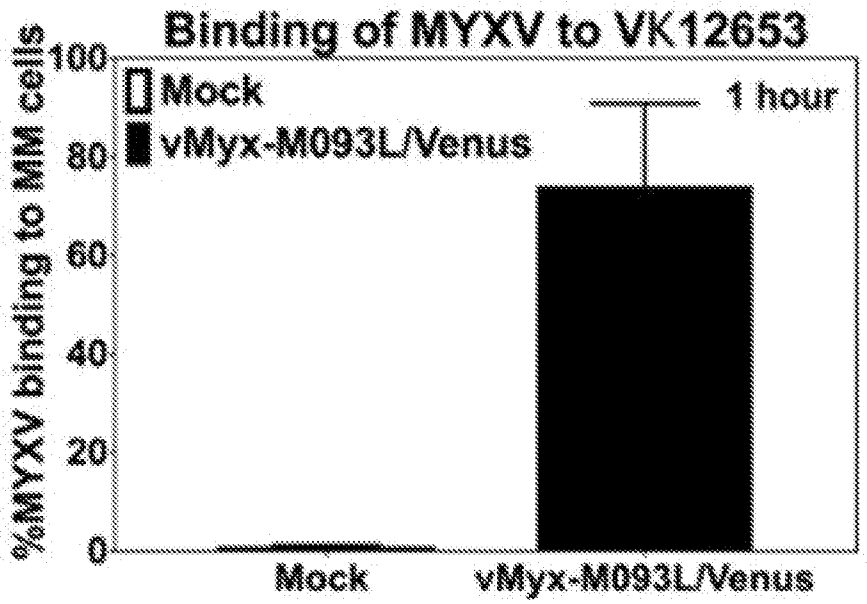
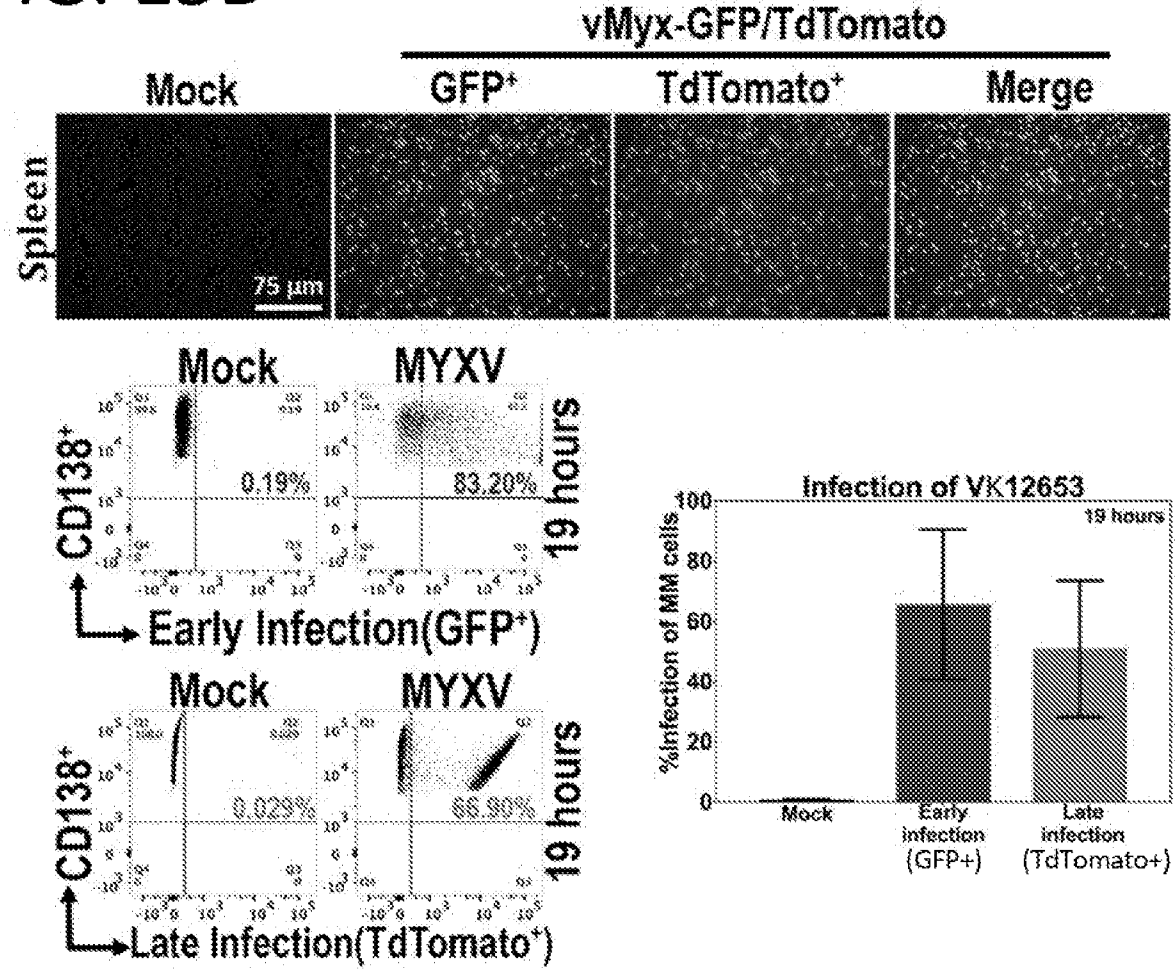

Binding of MYXV to VK12653
%MYXV binding to MM cells
Mock
vMyx-M093L/Venus
1 hour
0
20
40
60
80
100
Mock
vMyx-M093L/Venus

FIG. 15A

FIG. 15B


vMyx-GFP/TdTomato
Mock
GFP+
TdTomato+
Merge
Spleen
75 µm
Mock
MYXV
CD138+
0.19%
83.20%
19 hours
Early Infection(GFP+)
Mock
MYXV
CD138+
0.029%
66.90%
19 hours
Late Infection(TdTomato+)
Infection of VK12653
19 hours
%Infection of MM cells
100
80
60
40
20
0
Mock
Early infection (GFP+)
Late infection (TdTomato+)

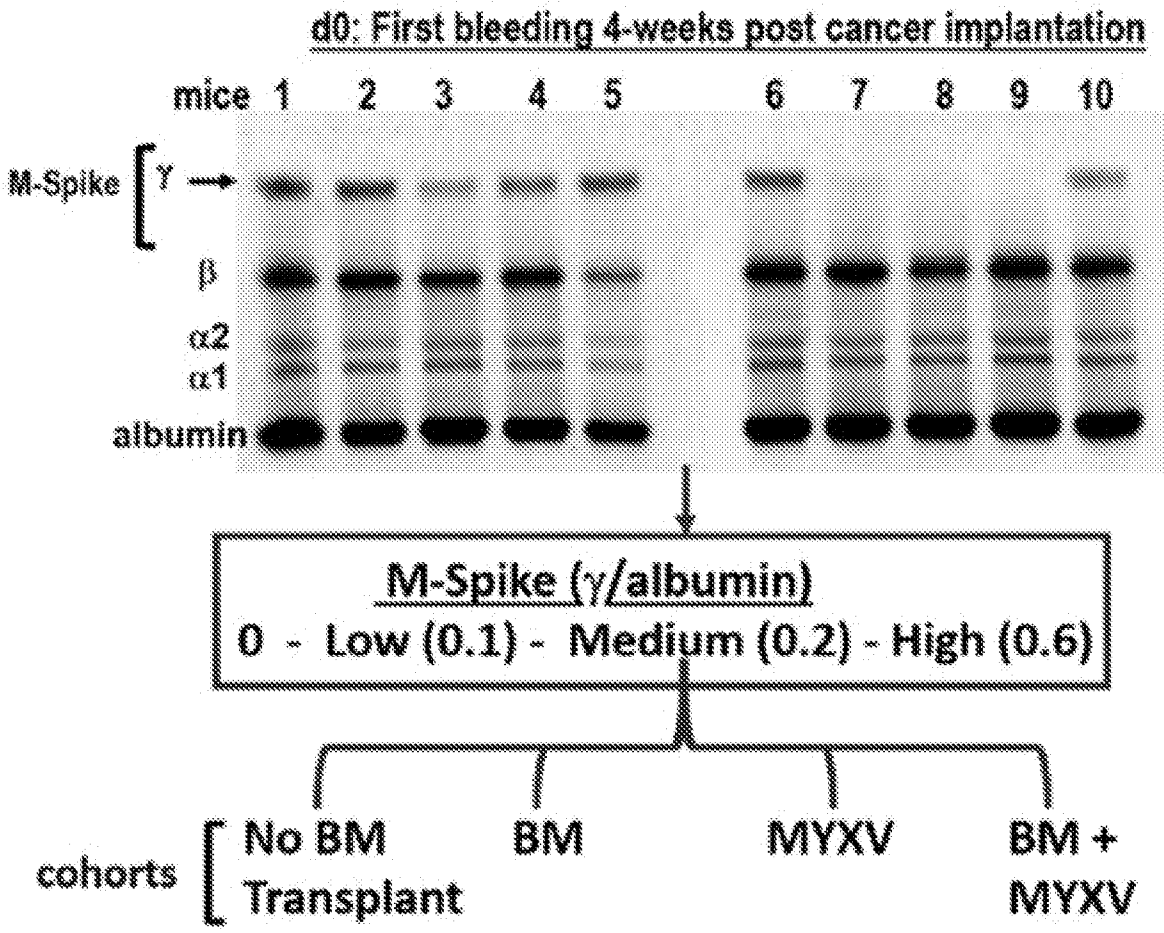

d0: First bleeding 4-weeks post cancer implantation
mice 1 2 3 4 5 6 7 8 9 10
M-Spike
γ
β
α2
α1
albumin
M-Spike (γ/albumin)
0 - Low (0.1) - Medium (0.2) - High (0.6)
cohorts
No BM Transplant
BM
MYXV
BM + MYXV

FIG. 16A

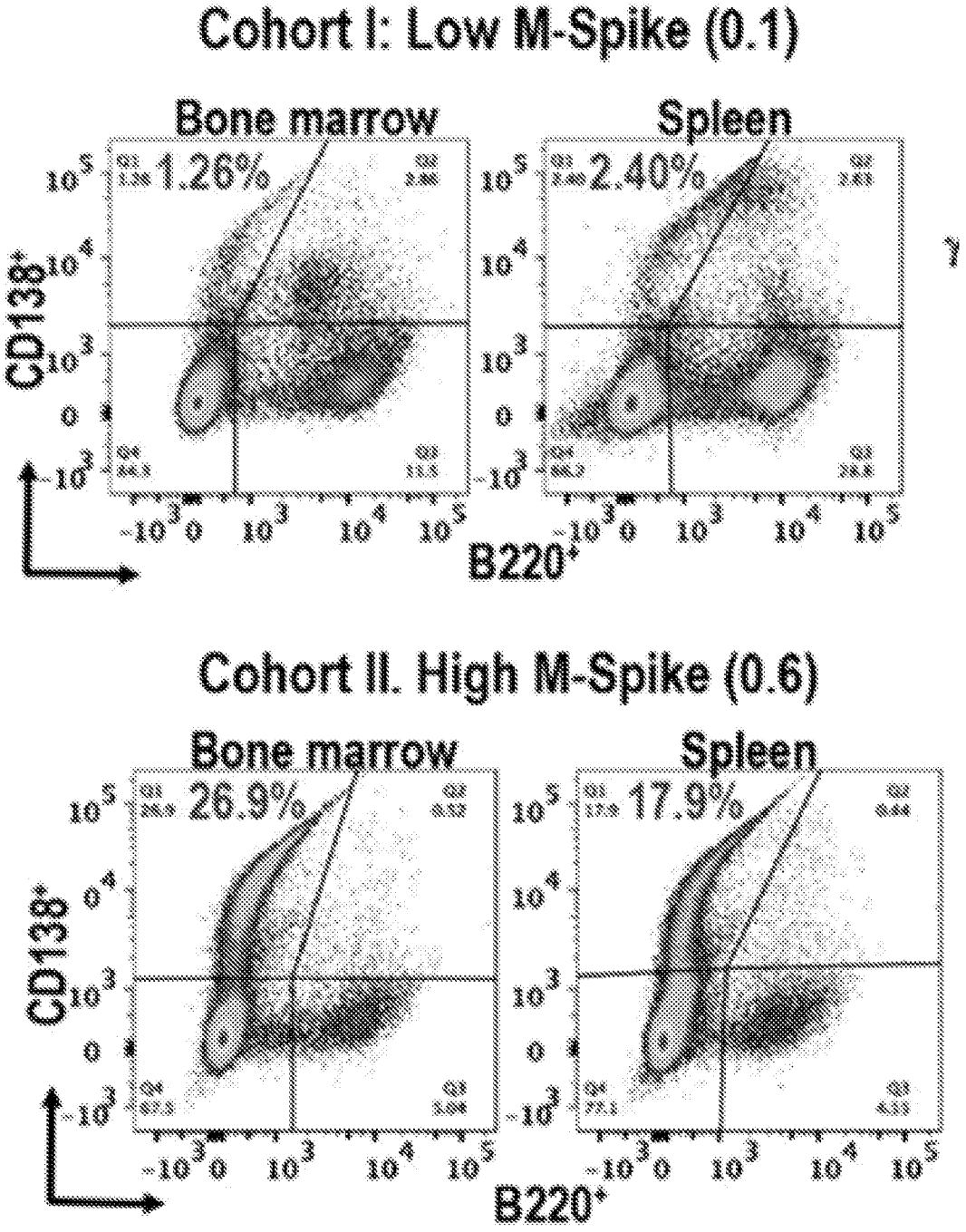

Cohort I: Low M-Spike (0.1)
Bone marrow
Spleen
1.26%
2.40%
CD138+
B220+
Cohort II. High M-Spike (0.6)
Bone marrow
Spleen
26.9%
17.9%
CD138+
B220+

FIG. 16B

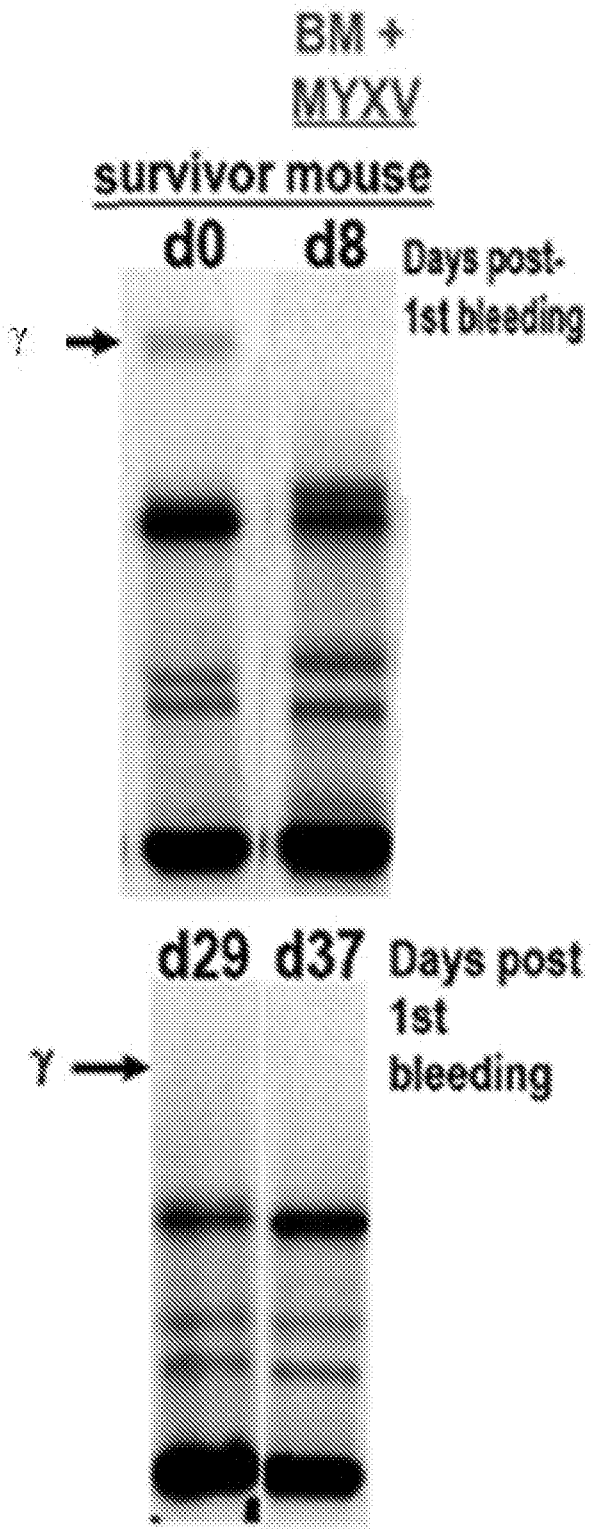

BM +
MYXV
survivor mouse
d0
d8
Days post-
1st bleeding
γ
d29
d37
Days post
1st
bleeding
γ

FIG. 16C