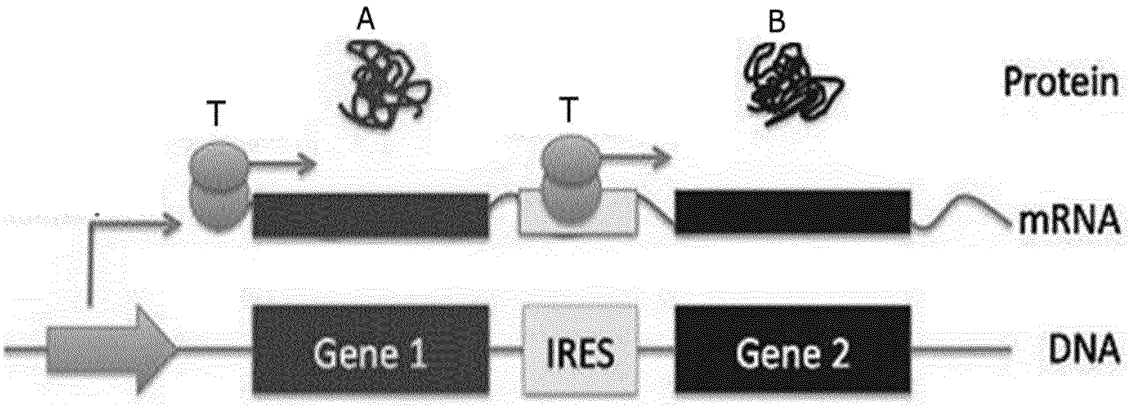

A
B
T
T
Protein
mRNA
Gene 1
IRES
Gene 2
DNA

Fig. 1

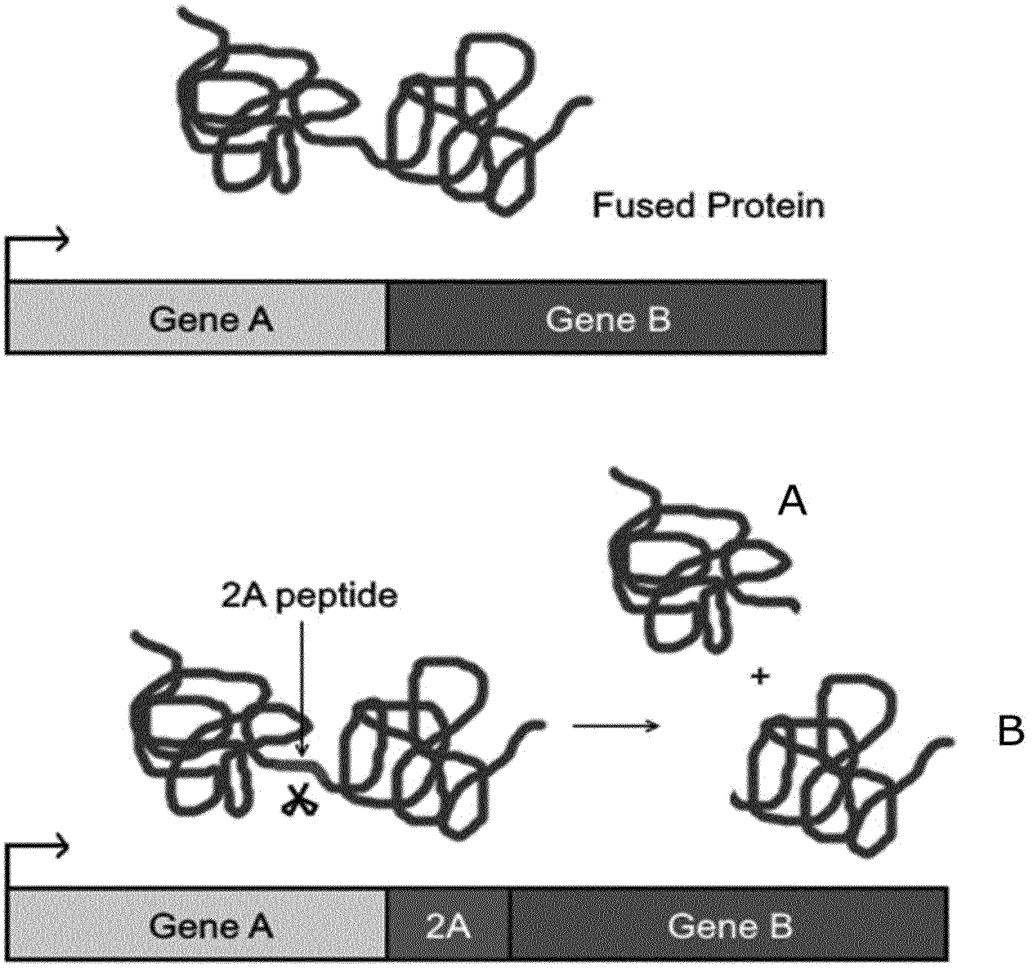

Fused Protein
Gene A
Gene B
A
2A peptide
+
B
Gene A
2A
Gene B

Fig. 2

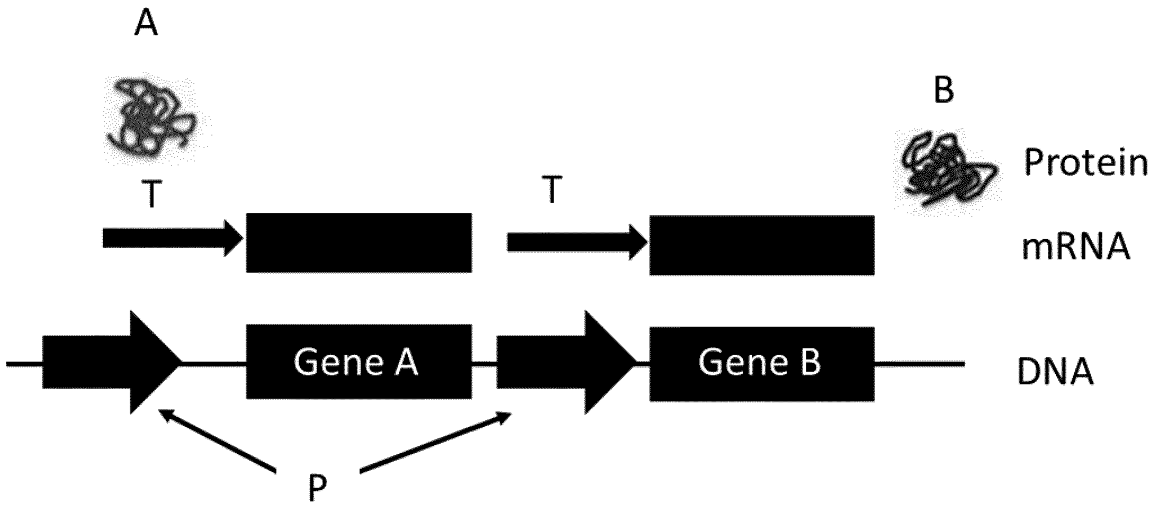

A
B
Protein
T
T
mRNA
Gene A
Gene B
DNA
P

Fig. 3a

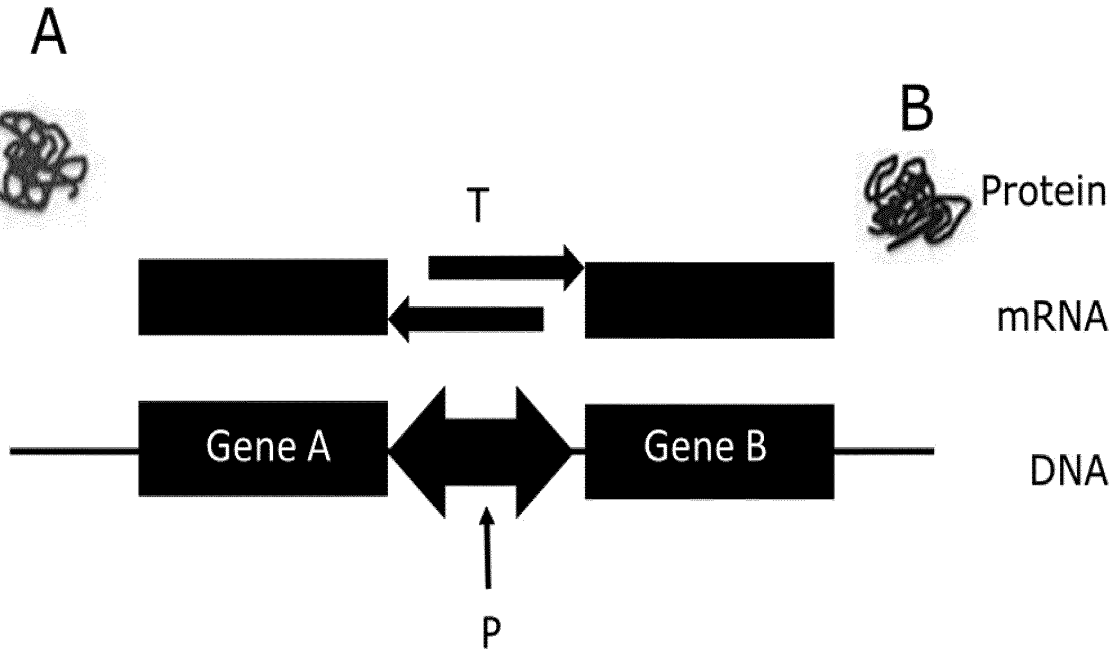

A
B
Protein
T
mRNA
Gene A
Gene B
DNA
P

Fig. 3b

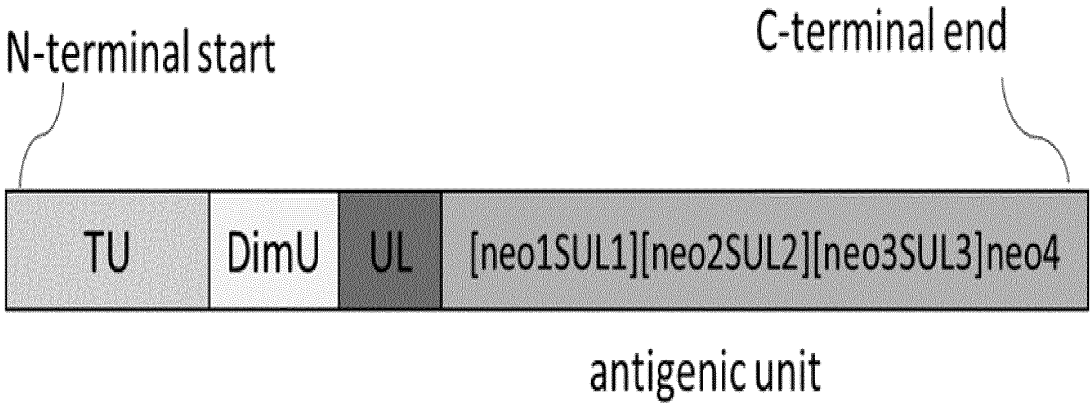

N-terminal start
C-terminal end
TU
DimU
UL
[neo1SUL1][neo2SUL2][neo3SUL3]neo4
antigenic unit

Fig. 4a

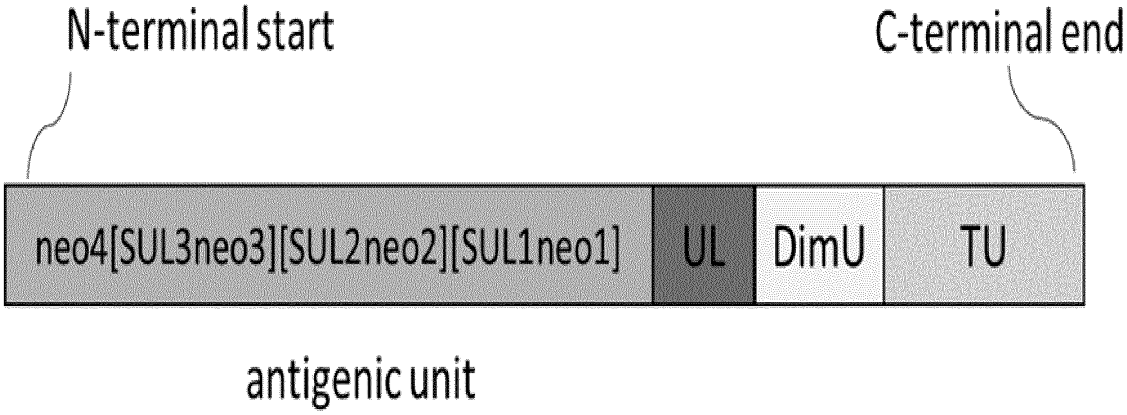

N-terminal start
C-terminal end
neo4[SUL3neo3][SUL2neo2][SUL1neo1]
UL
DimU
TU
antigenic unit

Fig. 4b

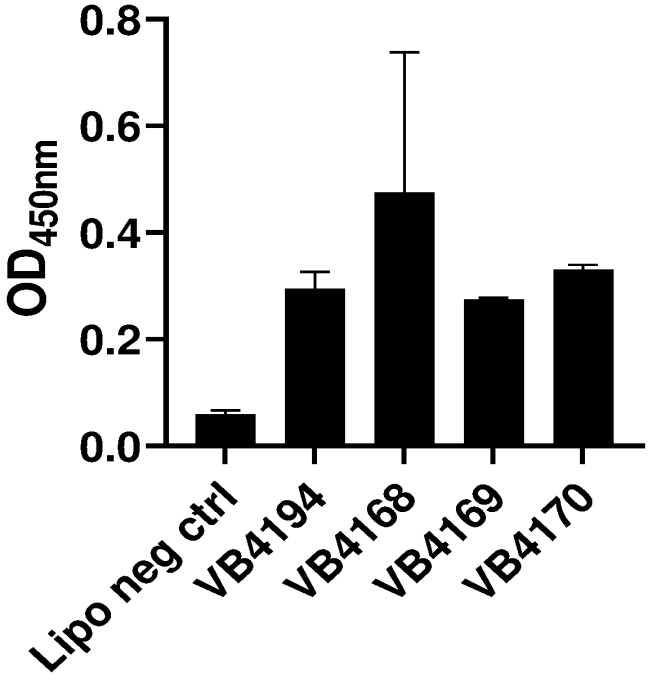

0.8
0.6
0.4
0.2
0.0
OD450nm
Lipo neg ctrl
VB4194
VB4168
VB4169
VB4170

Fig. 5

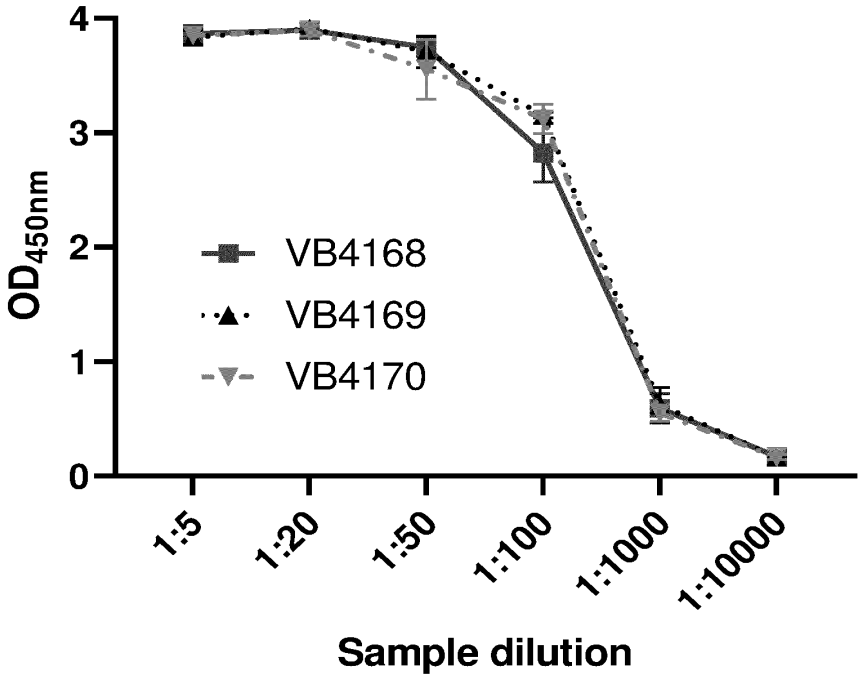

4
3
2
1
0
OD450nm
VB4168
VB4169
VB4170
1:5
1:20
1:50
1:100
1:1000
1:10000
Sample dilution

Fig. 6

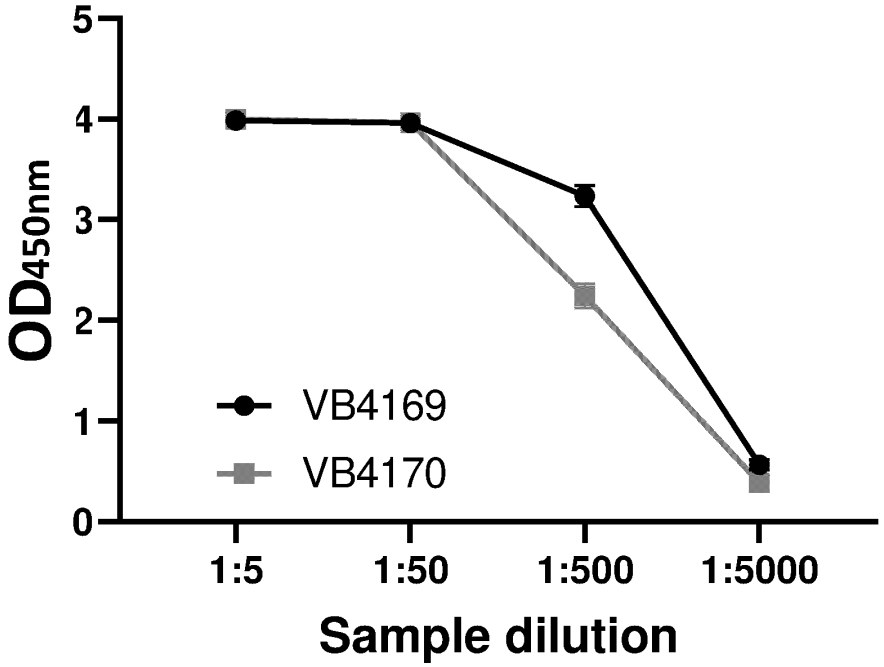

5
4
3
2
1
0
OD450nm
VB4169
VB4170
1:5
1:50
1:500
1:5000
Sample dilution

Fig. 7

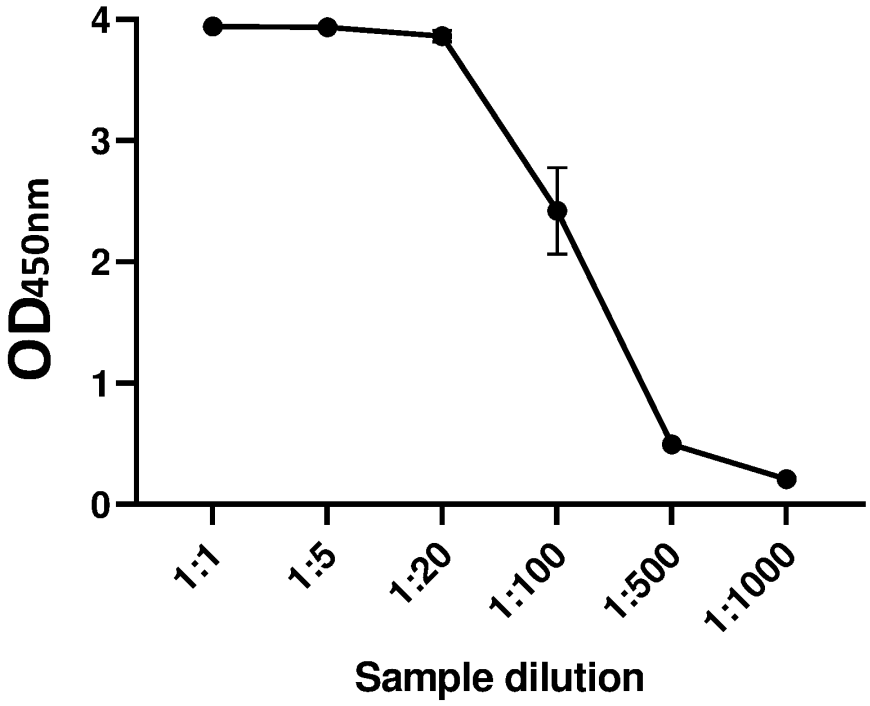

4
3
2
1
0
OD450nm
1:1
1:5
1:20
1:100
1:500
1:1000
Sample dilution

Fig. 8

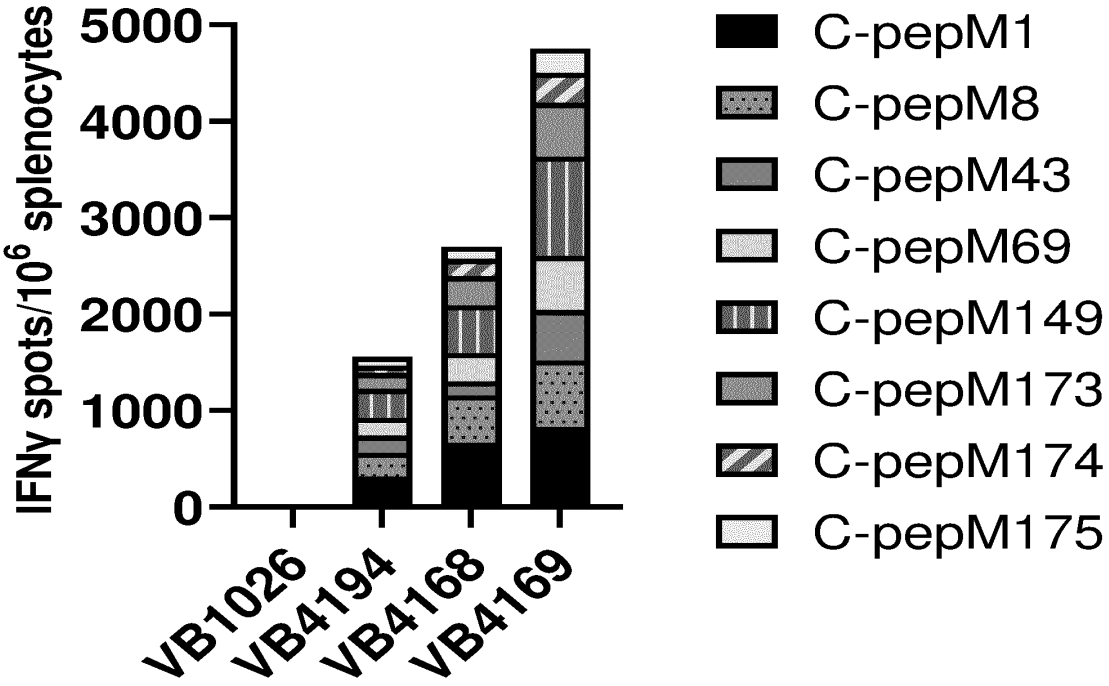

IFNγ spots/10^6 splenocytes
5000
4000
3000
2000
1000
0
VB1026
VB4194
VB4168
VB4169
C-pepM1
C-pepM8
C-pepM43
C-pepM69
C-pepM149
C-pepM173
C-pepM174
C-pepM175

Fig. 9

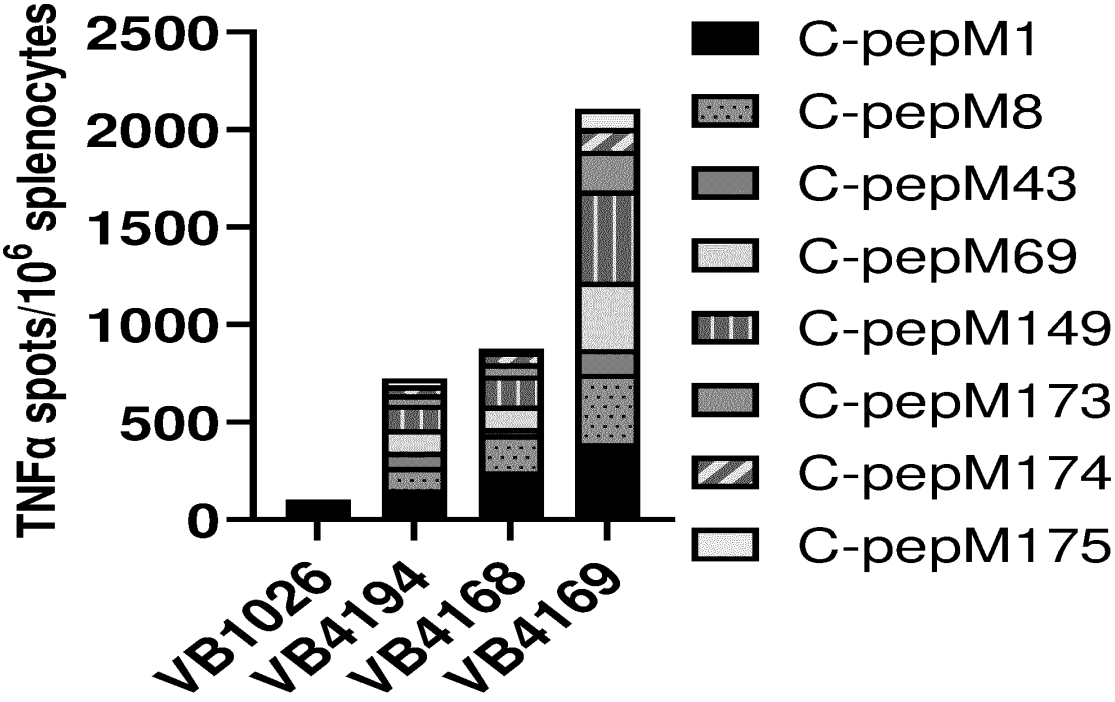

TNFα spots/10^6 splenocytes
2500
2000
1500
1000
500
0
VB1026
VB4194
VB4168
VB4169
C-pepM1
C-pepM8
C-pepM43
C-pepM69
C-pepM149
C-pepM173
C-pepM174
C-pepM175

Fig. 10

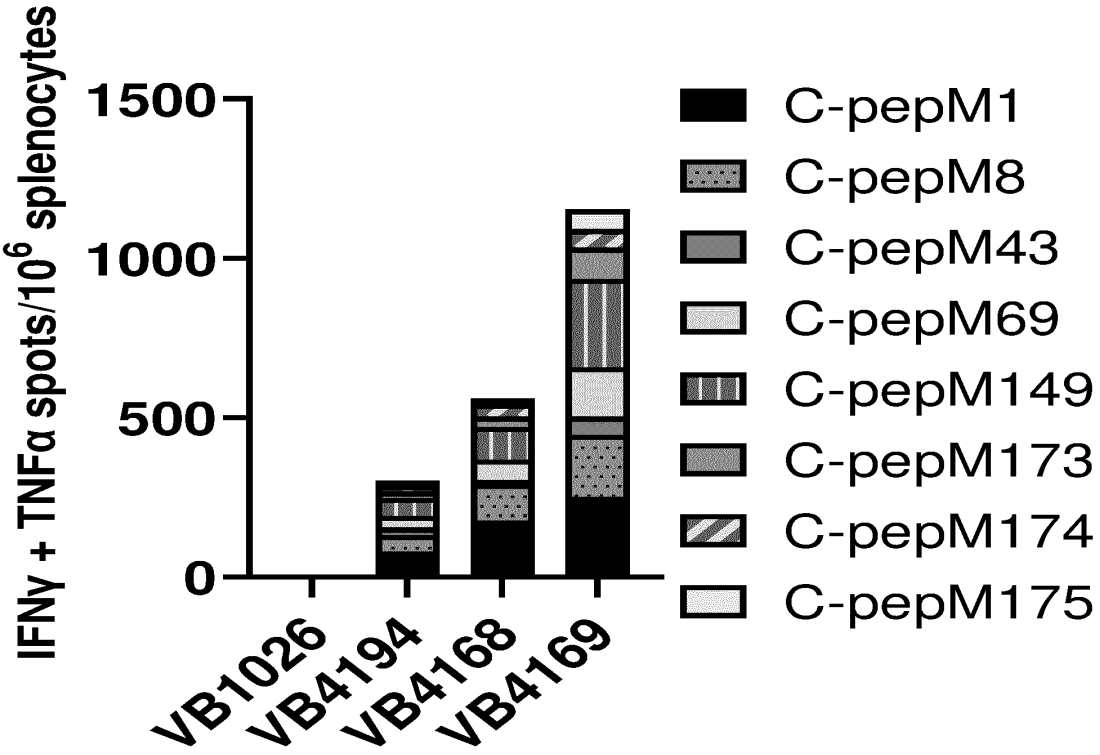

IFNγ + TNFα spots/10^6 splenocytes
1500
1000
500
0
VB1026
VB4194
VB4168
VB4169
C-pepM1
C-pepM8
C-pepM43
C-pepM69
C-pepM149
C-pepM173
C-pepM174
C-pepM175

Fig. 11

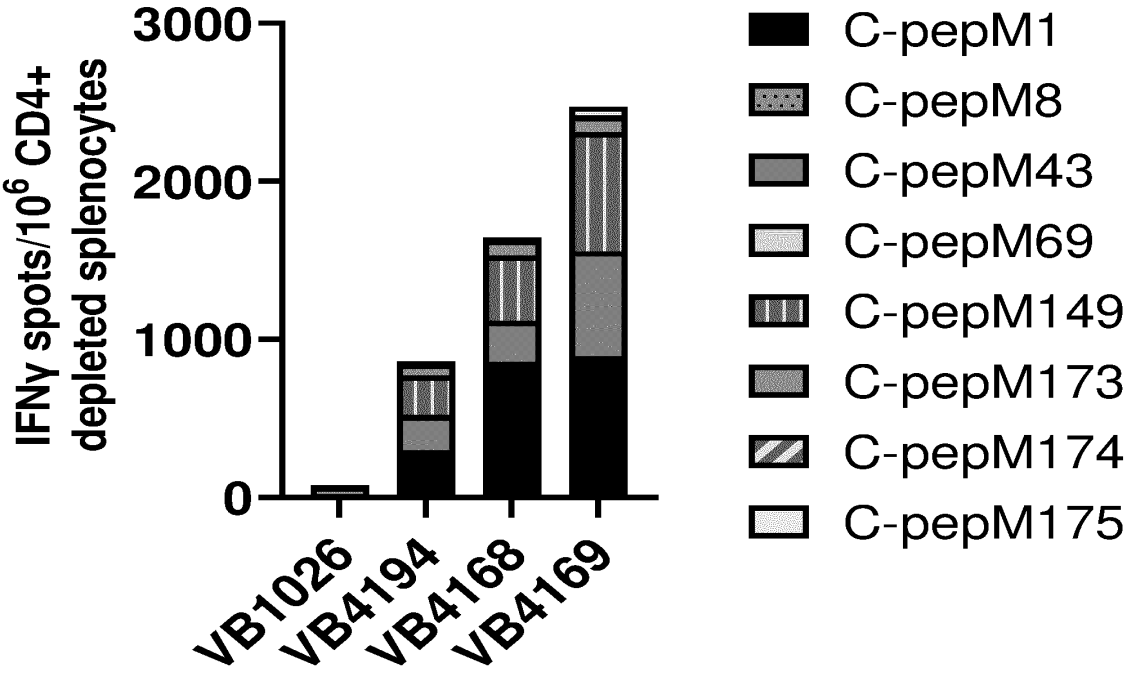

IFNγ spots/10^6 CD4+ depleted splenocytes
3000
2000
1000
0
VB1026
VB4194
VB4168
VB4169
C-pepM1
C-pepM8
C-pepM43
C-pepM69
C-pepM149
C-pepM173
C-pepM174
C-pepM175

Fig. 12

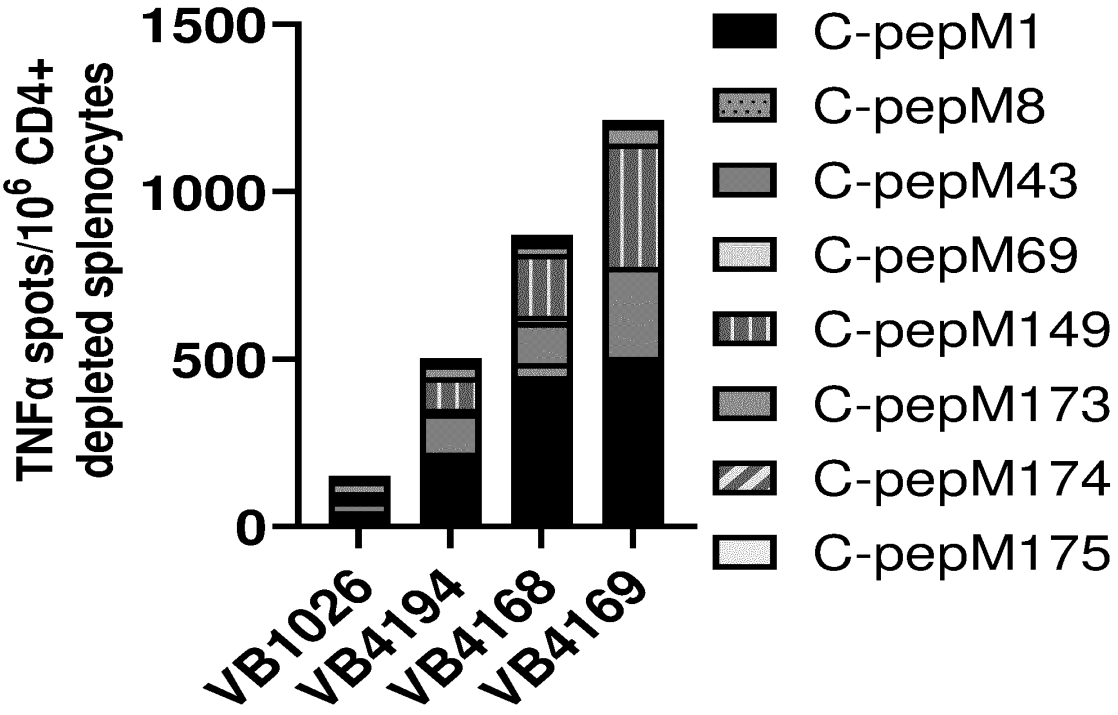

TNFα spots/10^6 CD4+ depleted splenocytes
1500
1000
500
0
VB1026
VB4194
VB4168
VB4169
C-pepM1
C-pepM8
C-pepM43
C-pepM69
C-pepM149
C-pepM173
C-pepM174
C-pepM175

Fig. 13

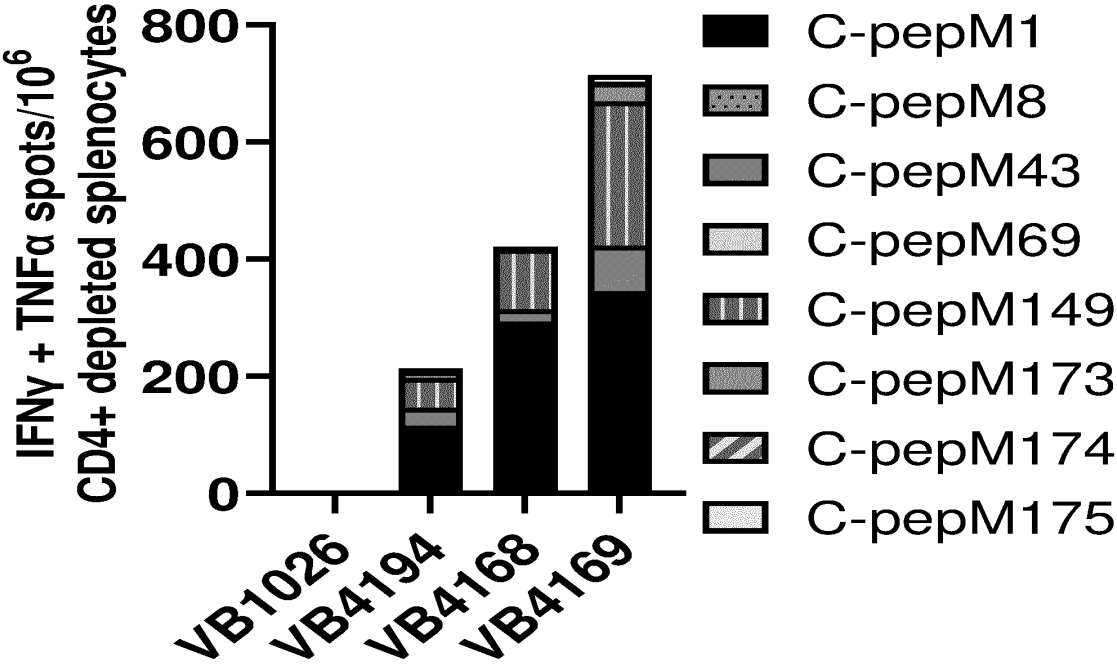

IFNγ + TNFα spots/10^6 CD4+ depleted splenocytes
800
600
400
200
0
VB1026
VB4194
VB4168
VB4169
C-pepM1
C-pepM8
C-pepM43
C-pepM69
C-pepM149
C-pepM173
C-pepM174
C-pepM175

Fig. 14

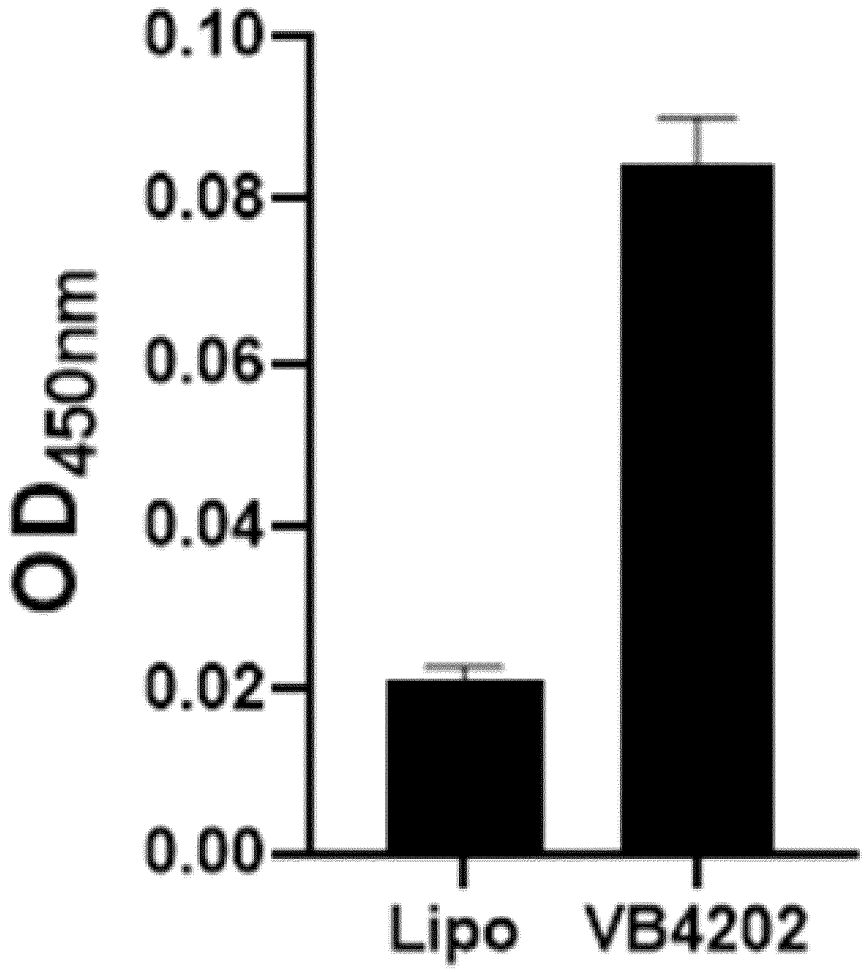


Fig. 15

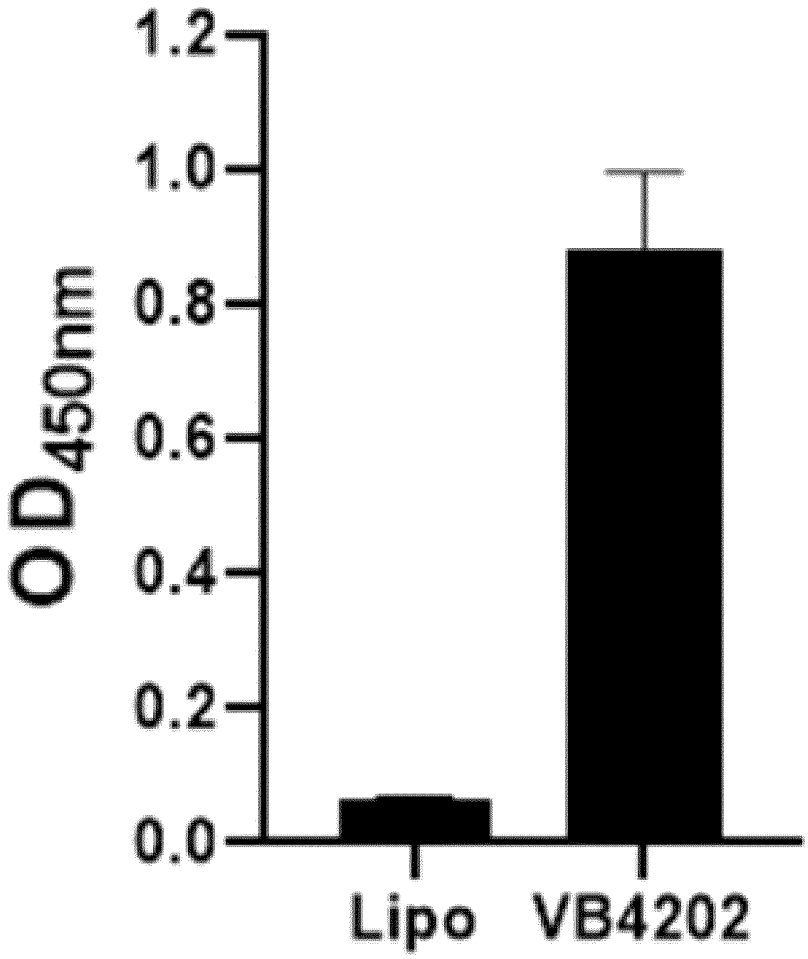


Fig. 16

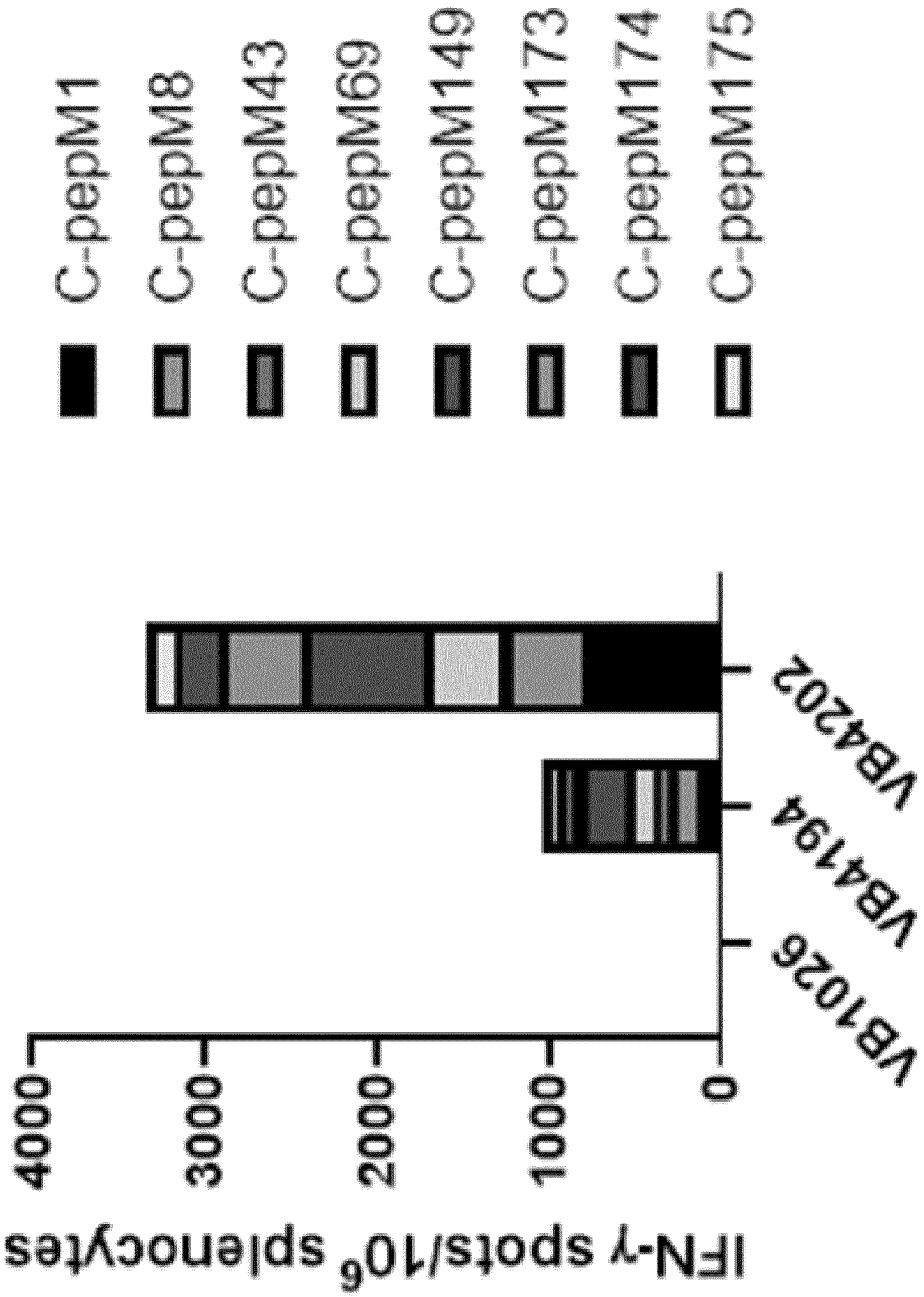

C-pepM1
C-pepM8
C-pepM43
C-pepM69
C-pepM149
C-pepM173
C-pepM174
C-pepM175
IFN-γ spots/10^6 splenocytes
4000
3000
2000
1000
0
VB1026
VB4194
VB4202

Fig. 17

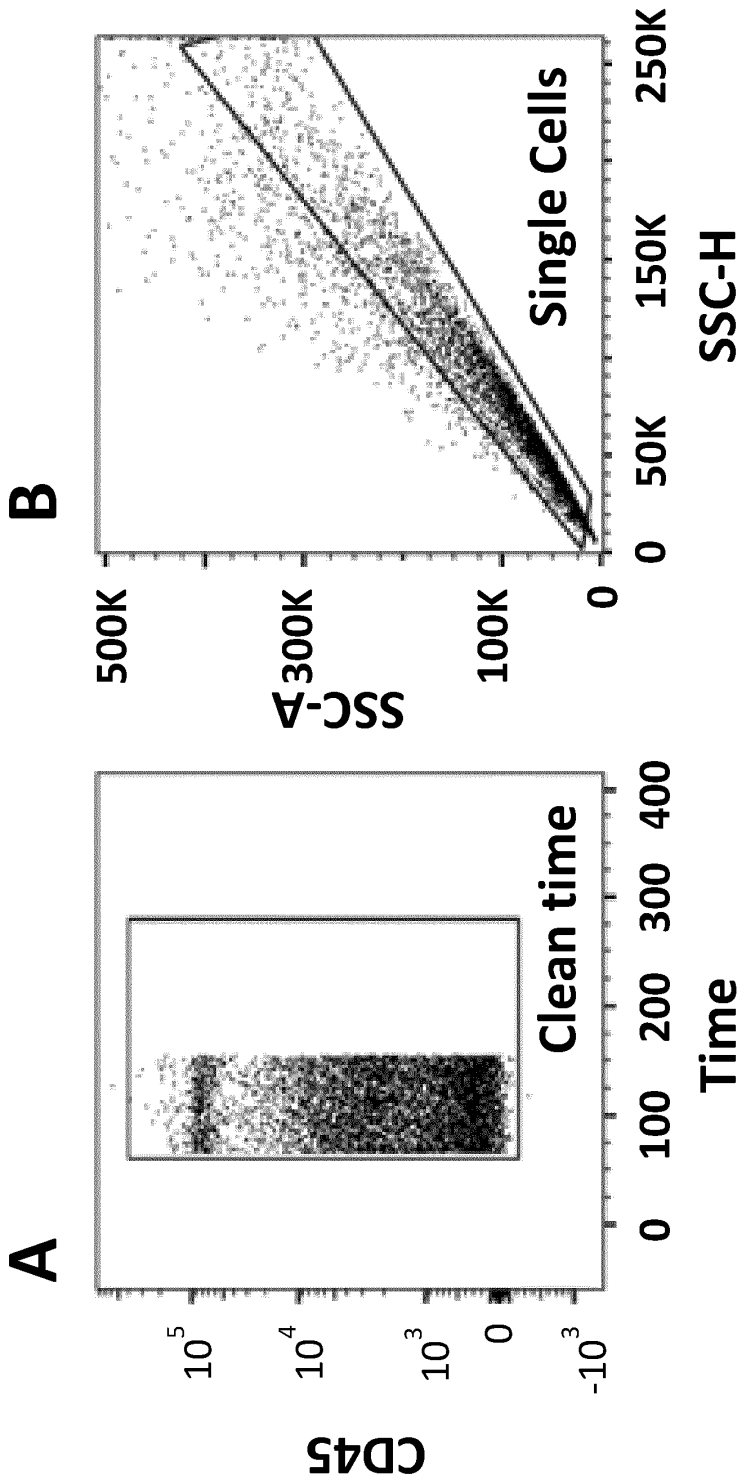

A
CD45
10^5
10^4
10^3
0
-10^3
Clean time
0
100
200
300
400
Time
B
SSC-A
500K
300K
100K
0
Single Cells
0
50K
150K
250K
SSC-H

Fig. 18

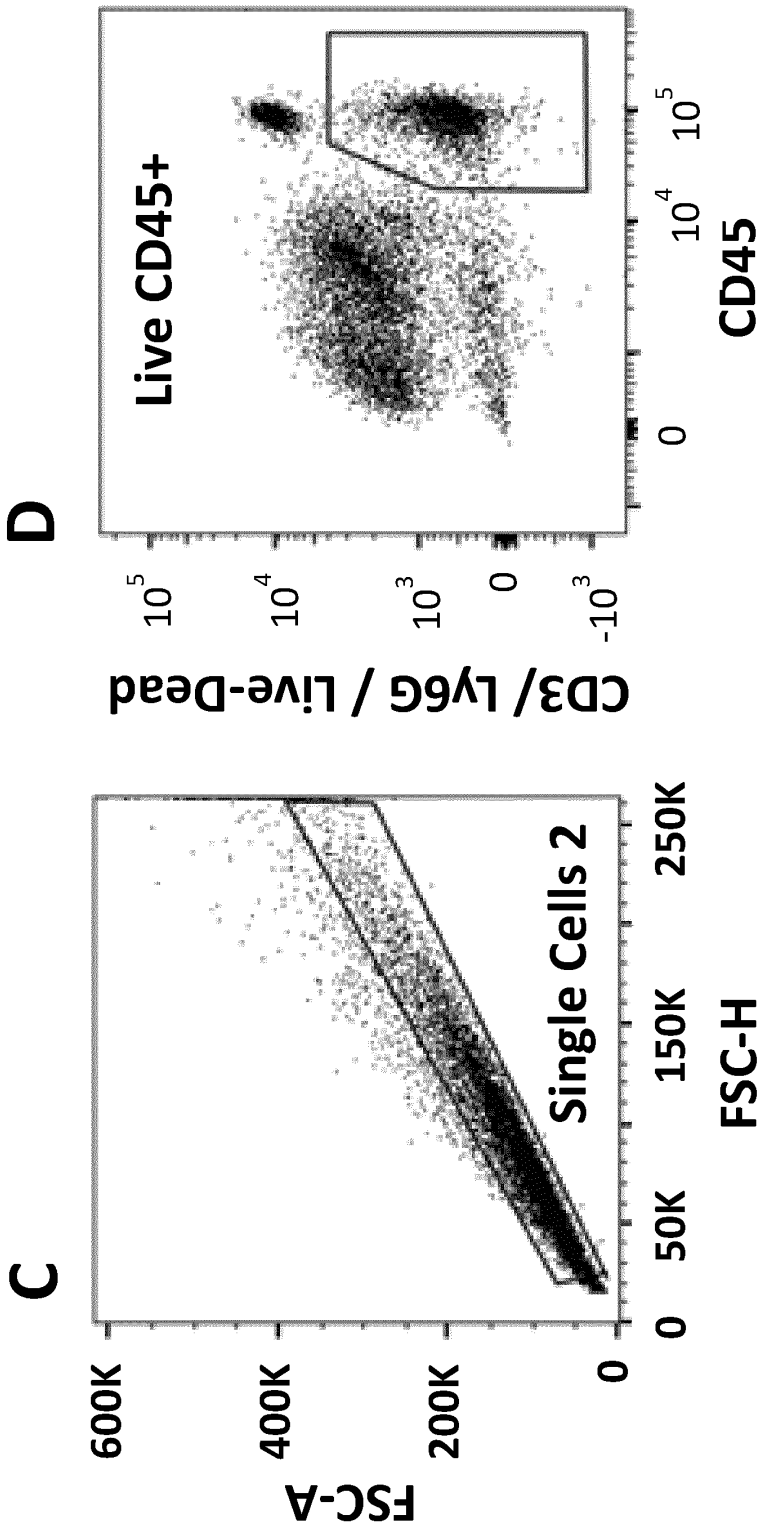

C
FSC-A
600K
400K
200K
0
0
50K
150K
250K
FSC-H
Single Cells 2
D
CD3/ Ly6G / Live-Dead
10^5
10^4
10^3
0
-10^3
0
10^4
10^5
CD45
Live CD45+

Fig. 18 (Cont.)

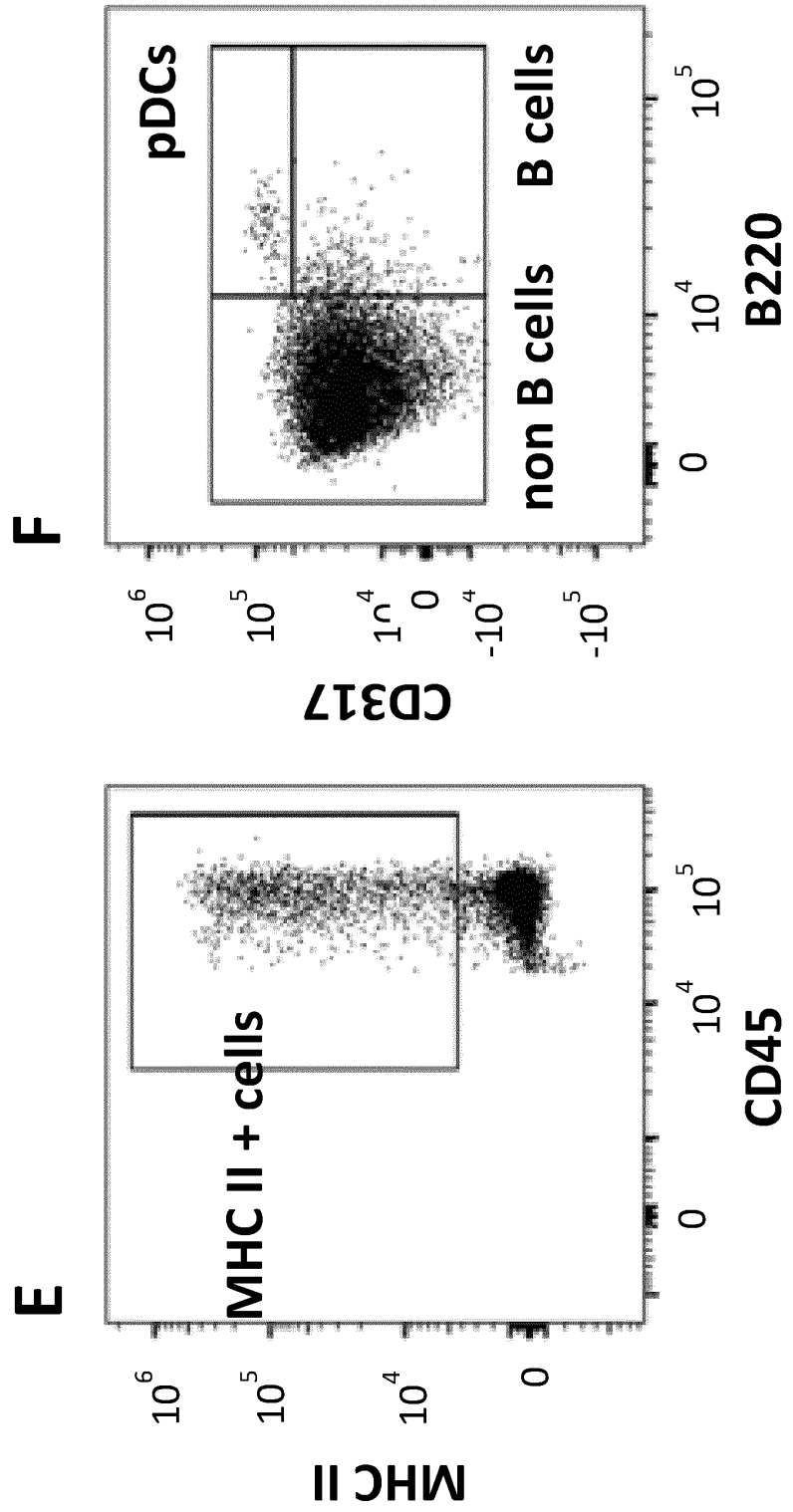


Fig. 18 (Cont.)

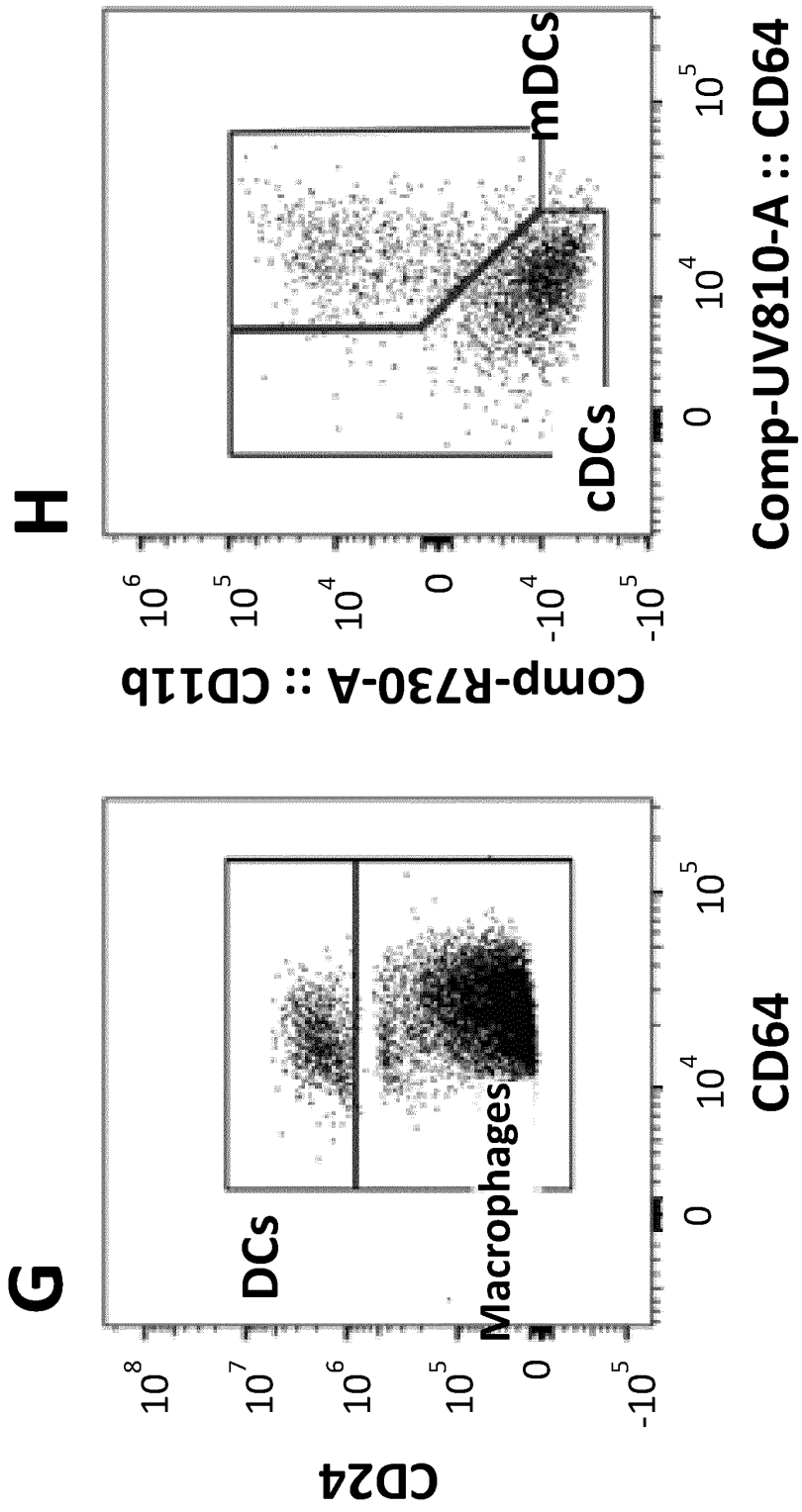

G
DCs
Macrophages
CD24
CD64
H
mDCs
cDCs
Comp-R730-A :: CD11b
Comp-UV810-A :: CD64

Fig. 18 (Cont.)

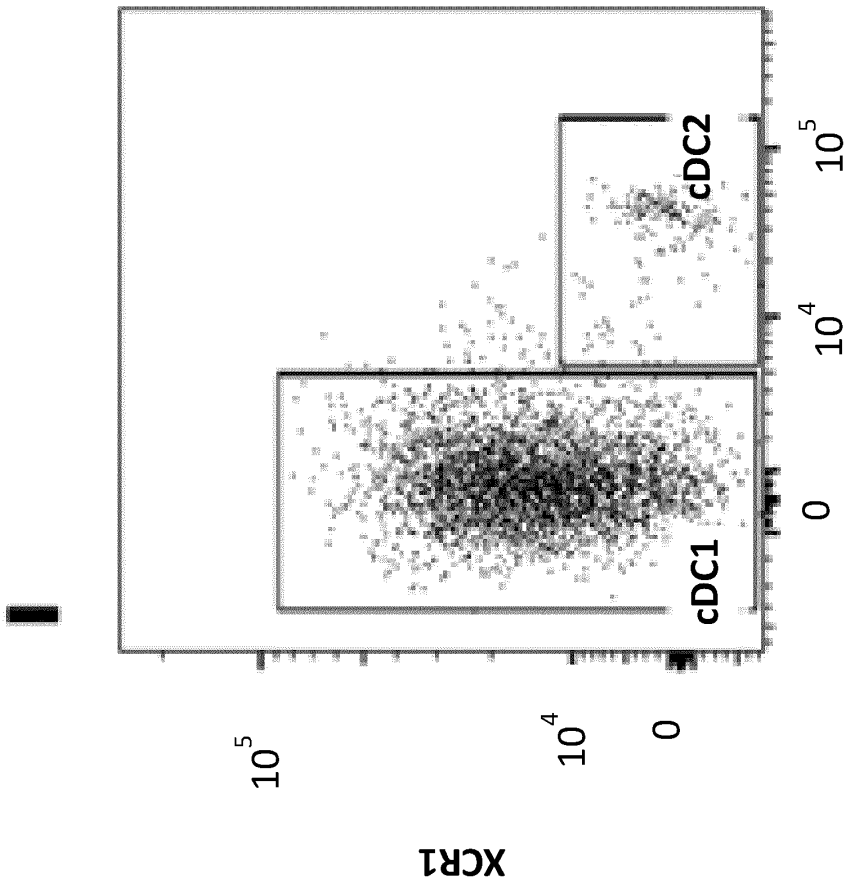


Fig. 18 (Cont.)

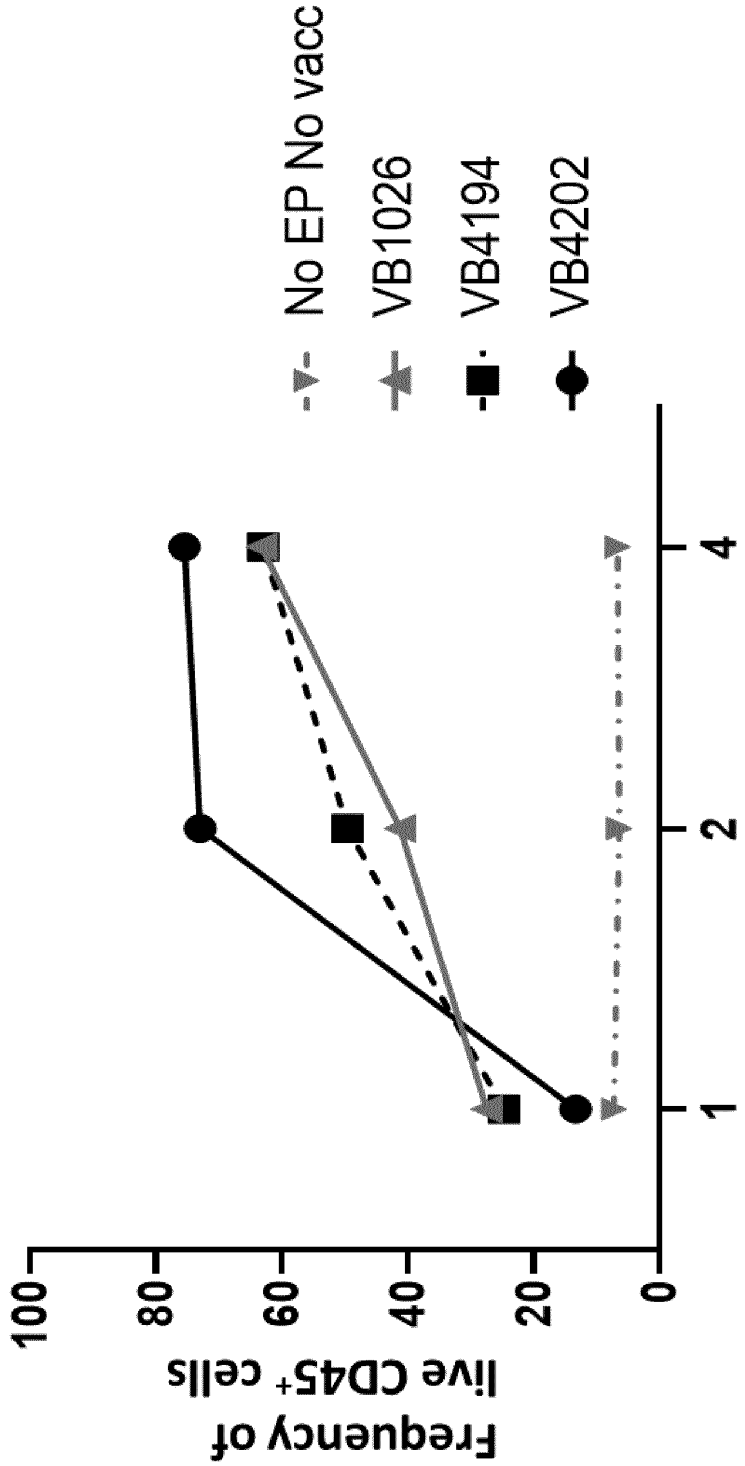

No EP No vacc
VB1026
VB4194
VB4202
Frequency of
live CD45+ cells
100
80
60
40
20
0
1
2
4
Days

Fig. 19

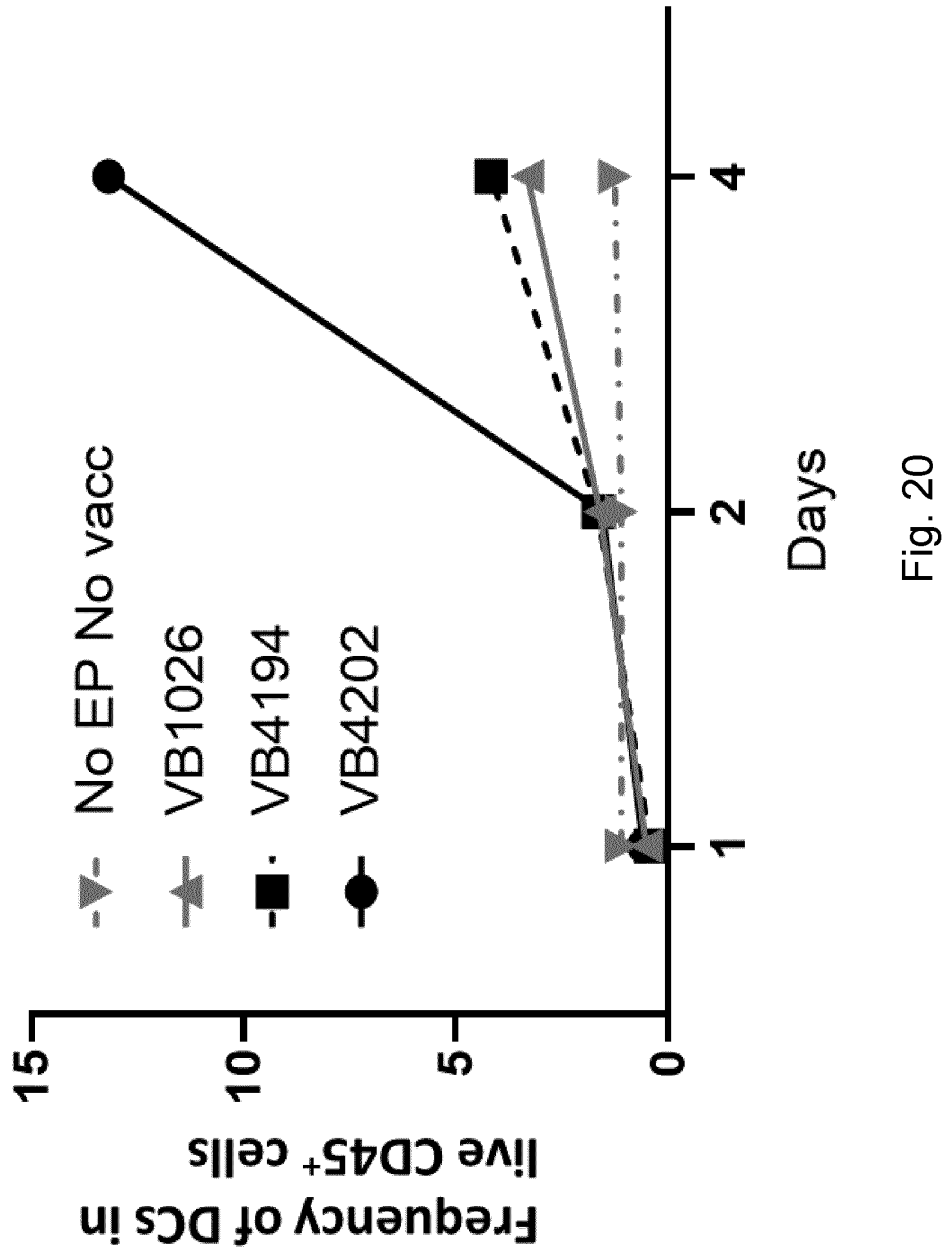

Frequency of DCs in live CD45+ cells
15
10
5
0
1
2
4
Days
No EP No vacc
VB1026
VB4194
VB4202

Fig. 20

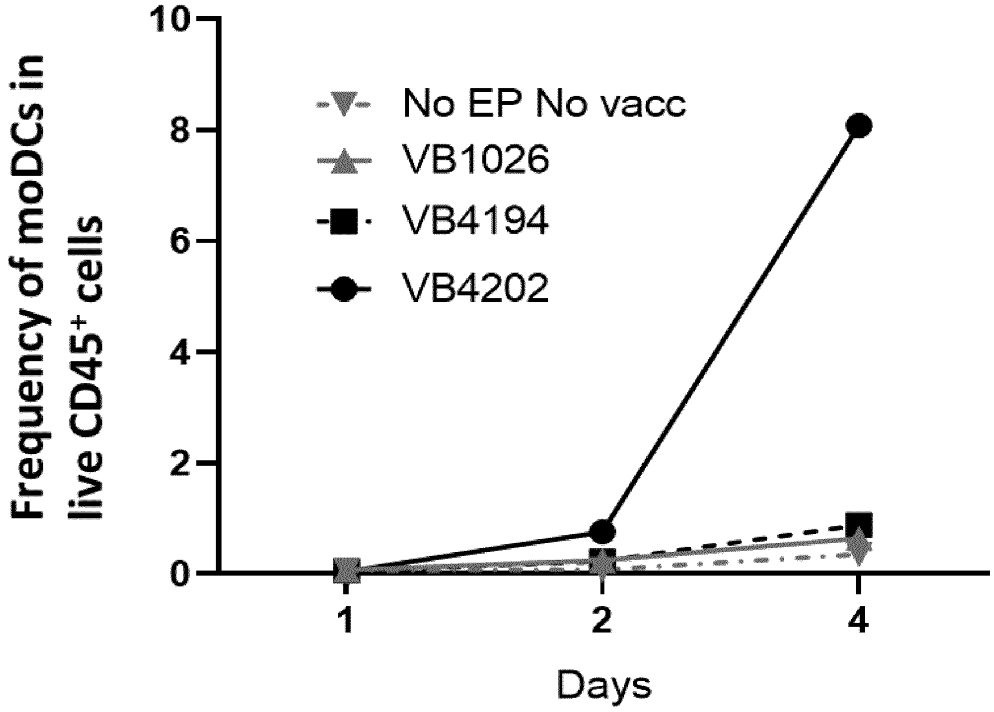

Frequency of moDCs in live CD45+ cells
10
8
6
4
2
0
No EP No vacc
VB1026
VB4194
VB4202
1
2
4
Days

Fig. 21

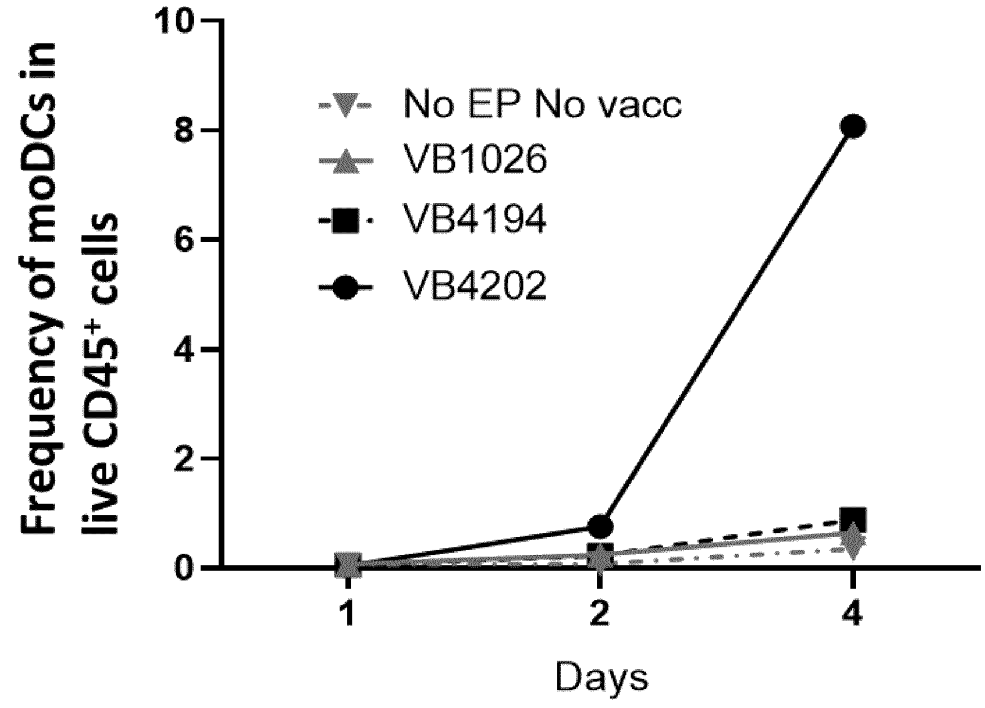

Frequency of moDCs in live CD45+ cells
10
8
6
4
2
0
No EP No vacc
VB1026
VB4194
VB4202
1
2
4
Days

Fig. 22

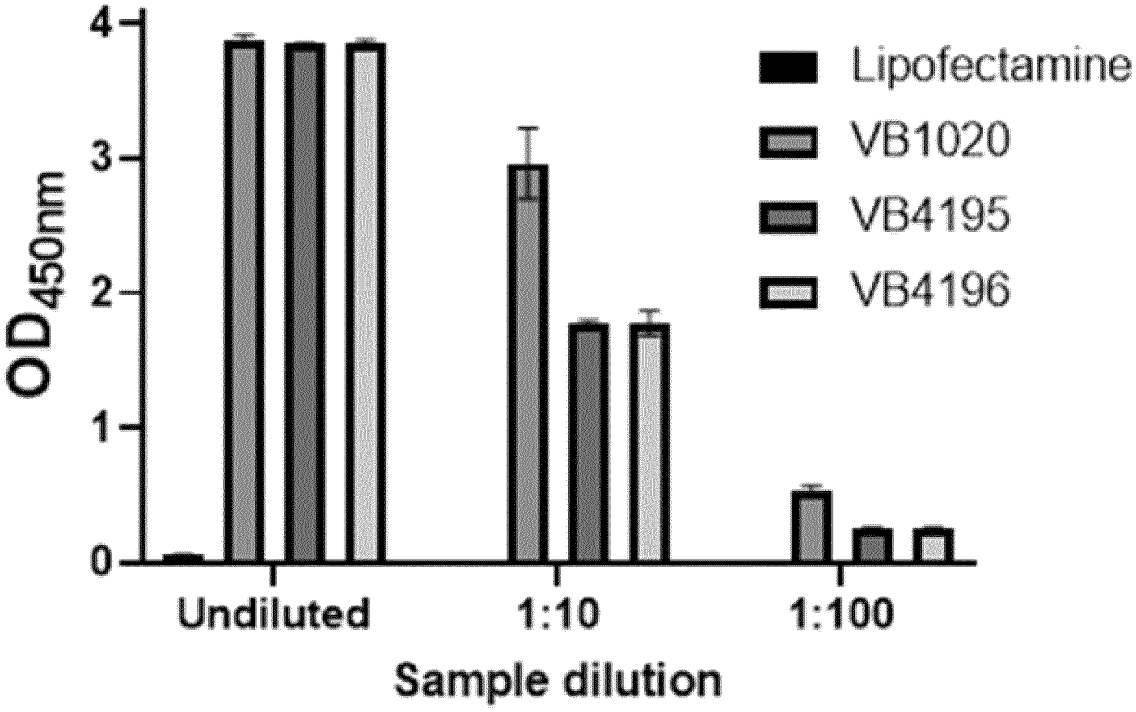

4
3
2
1
0
OD450nm
Lipofectamine
VB1020
VB4195
VB4196
Undiluted
1:10
1:100
Sample dilution

Fig. 23

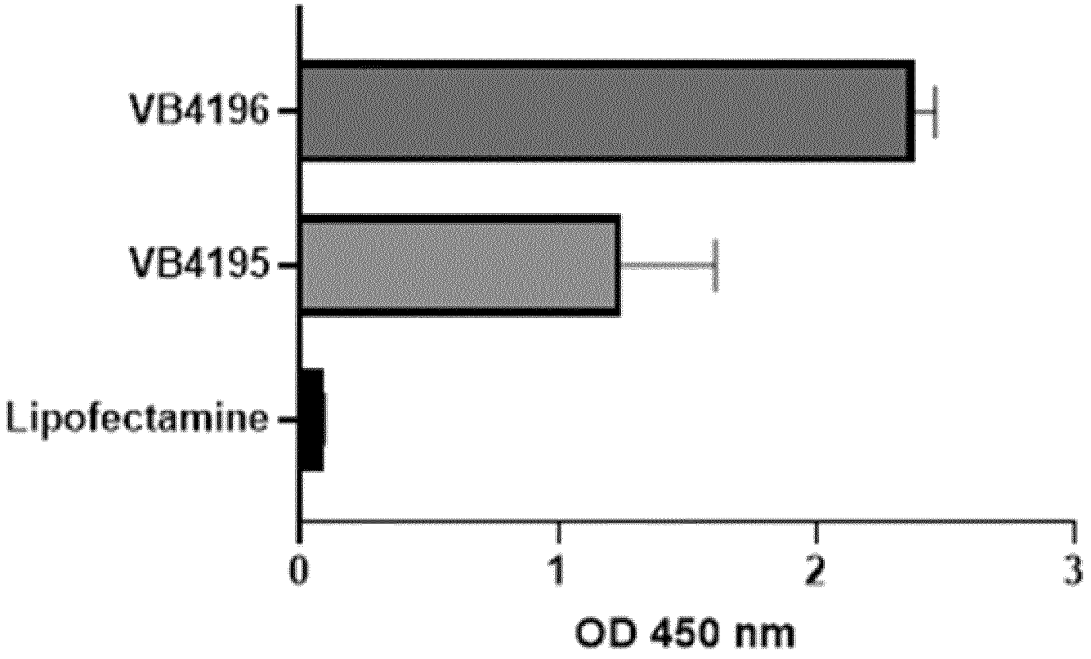

VB4196
VB4195
Lipofectamine
0
1
2
3
OD 450 nm

Fig. 24

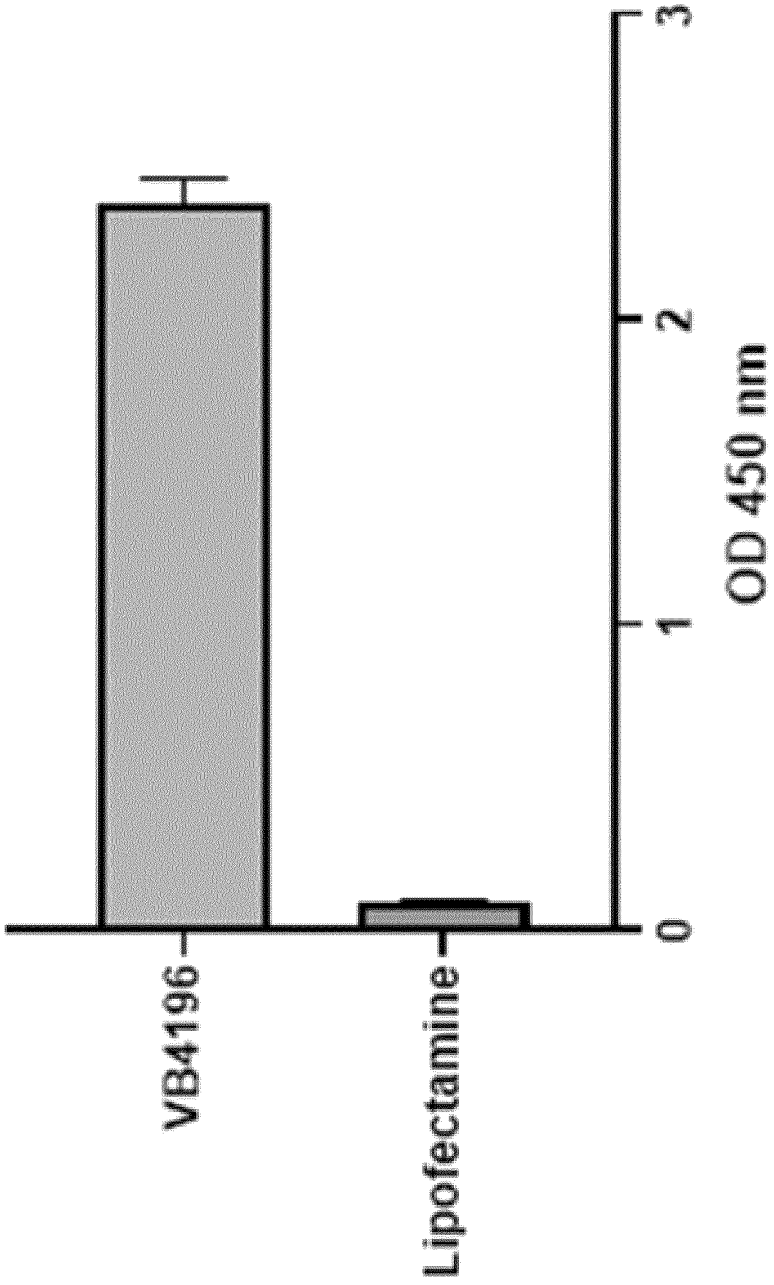


Fig. 25

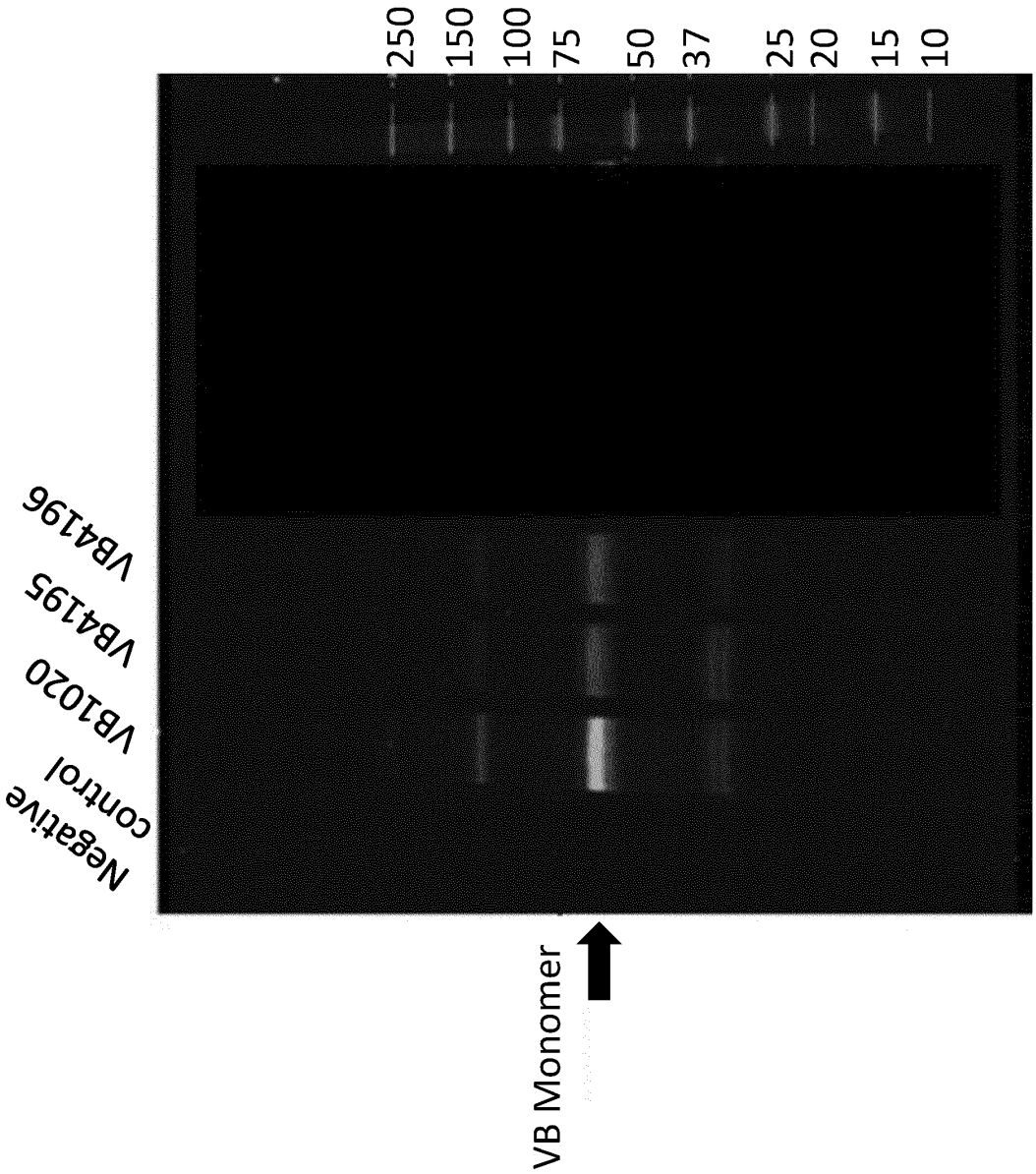

250
150
100
75
50
37
25
20
15
10
Negative control
VB1020
VB4195
VB4196
VB Monomer

Fig. 26

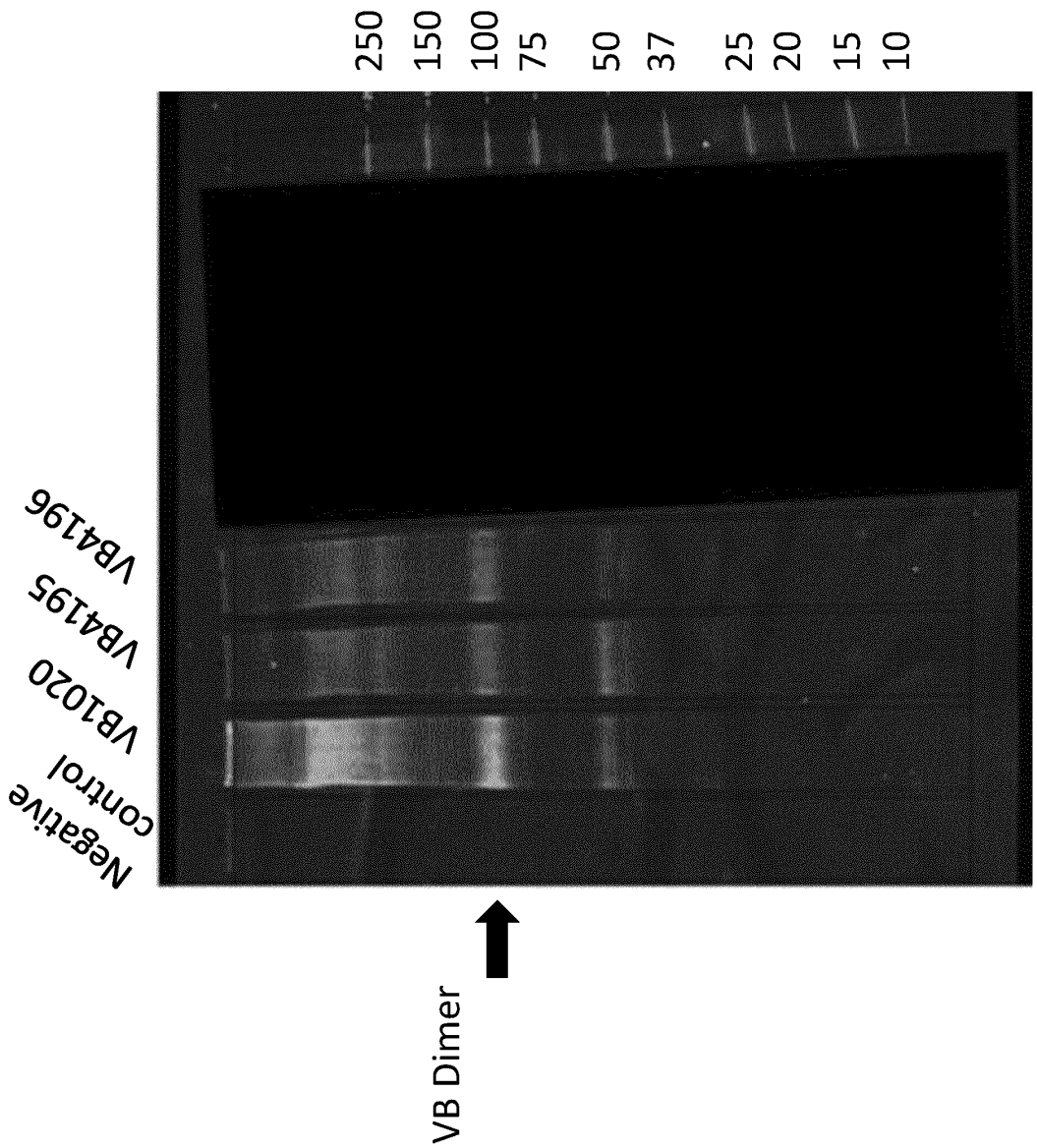

250
150
100
75
50
37
25
20
15
10
Negative control
VB1020
VB4195
VB4196
VB Dimer

Fig. 26 (Cont.)

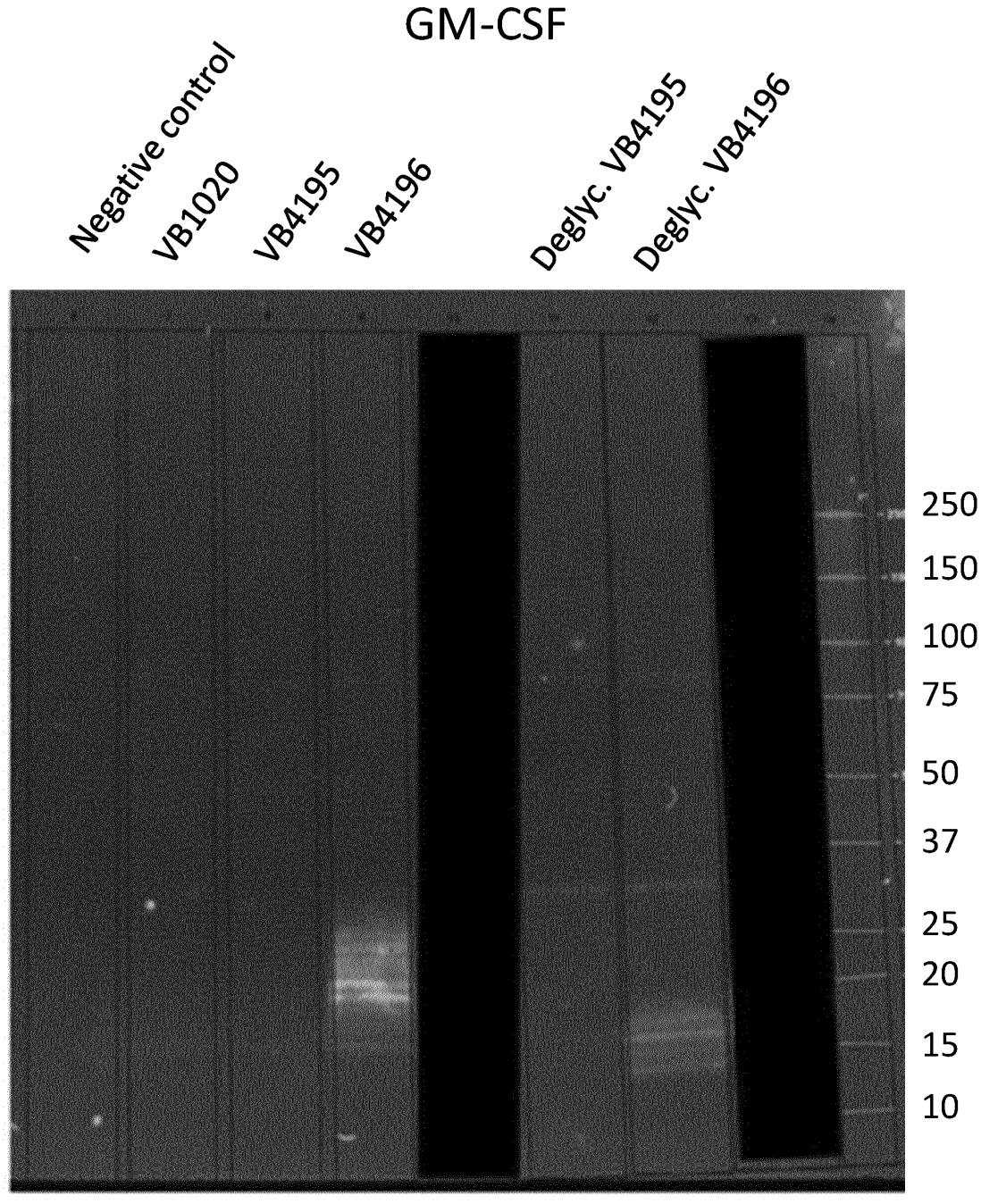

GM-CSF
Negative control
VB1020
VB4195
VB4196
Deglyc. VB4195
Deglyc. VB4196
250
150
100
75
50
37
25
20
15
10

Fig. 27

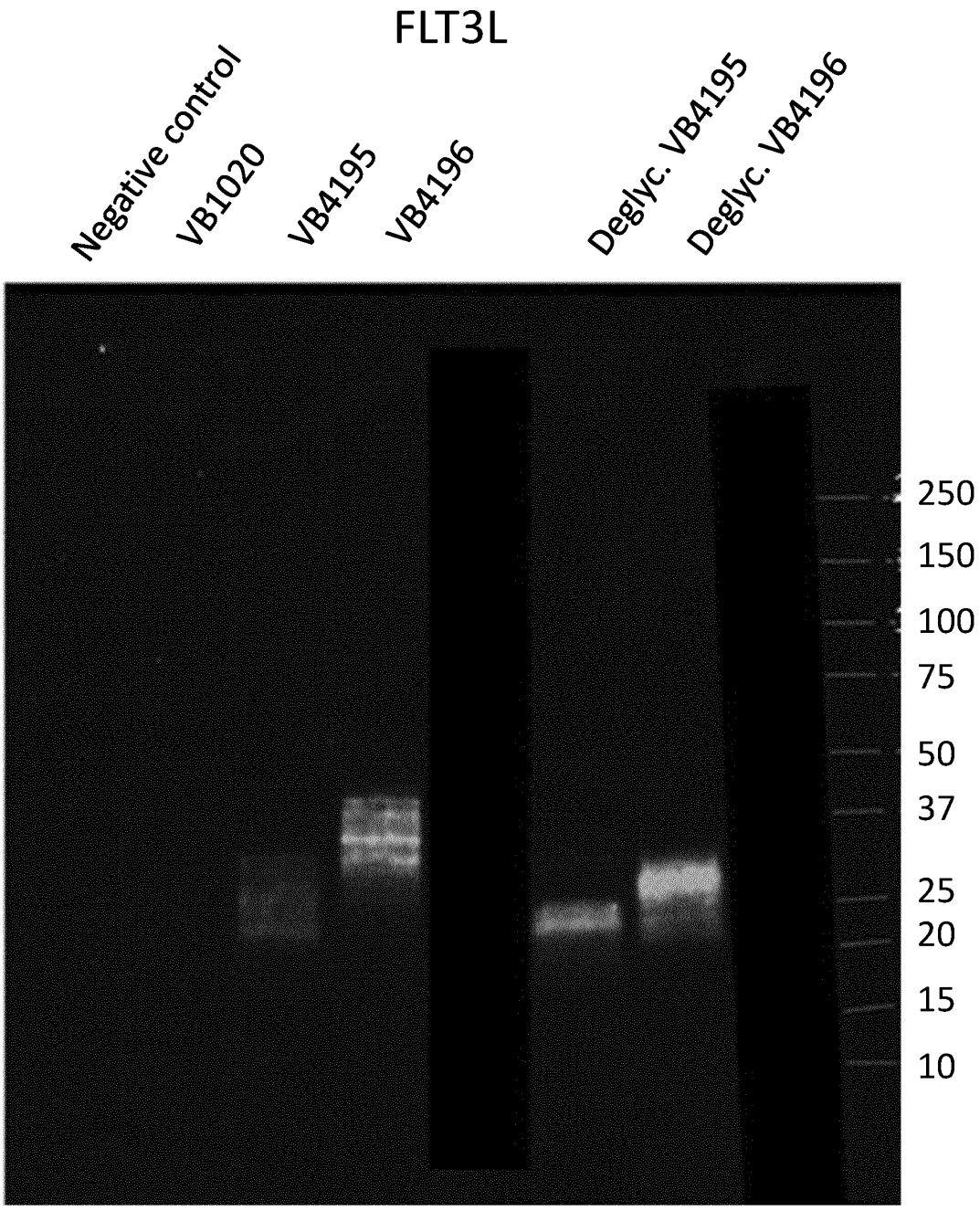

FLT3L
Negative control
VB1020
VB4195
VB4196
Deglyc. VB4195
Deglyc. VB4196
250
150
100
75
50
37
25
20
15
10

Fig. 27 (Cont.)

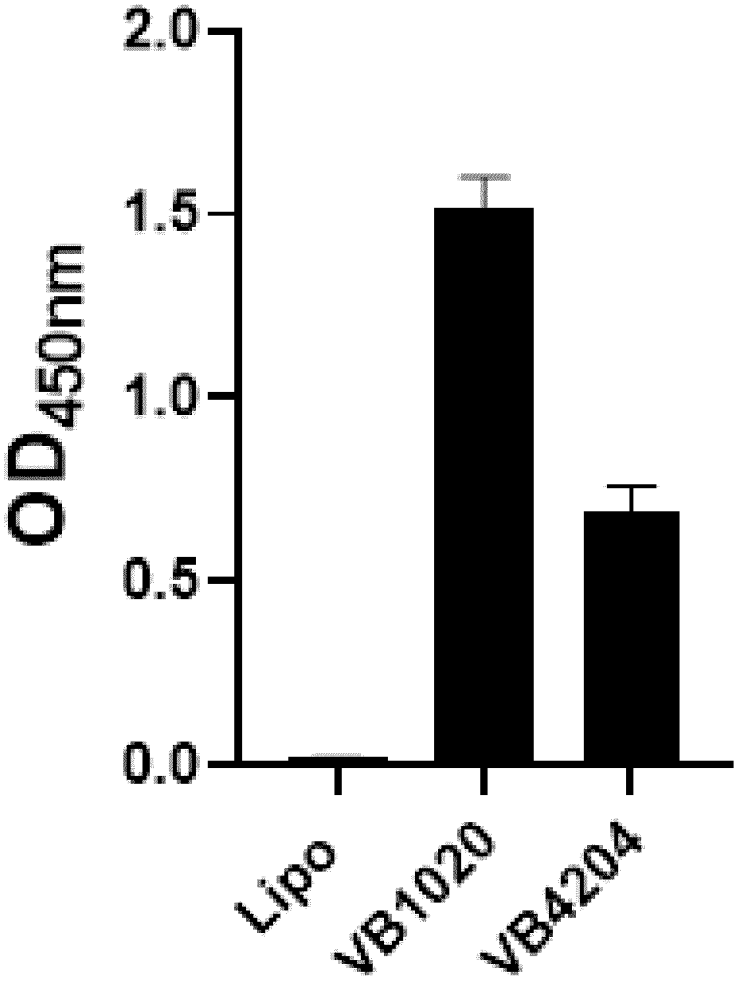


Fig. 28

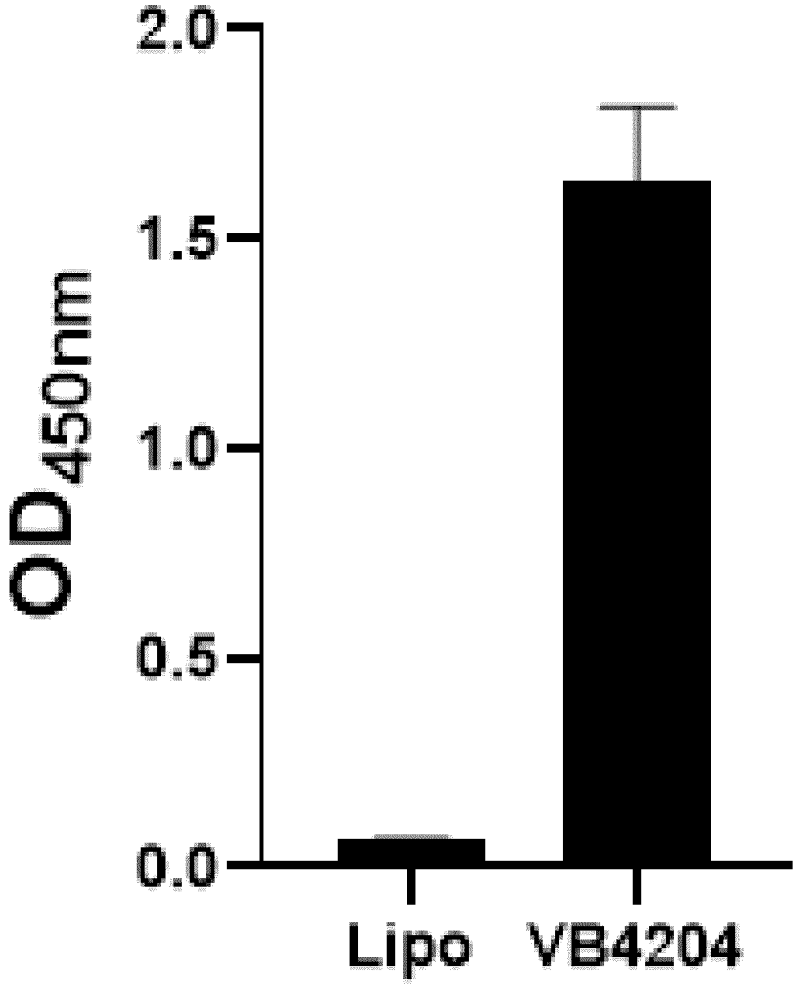


Fig. 29

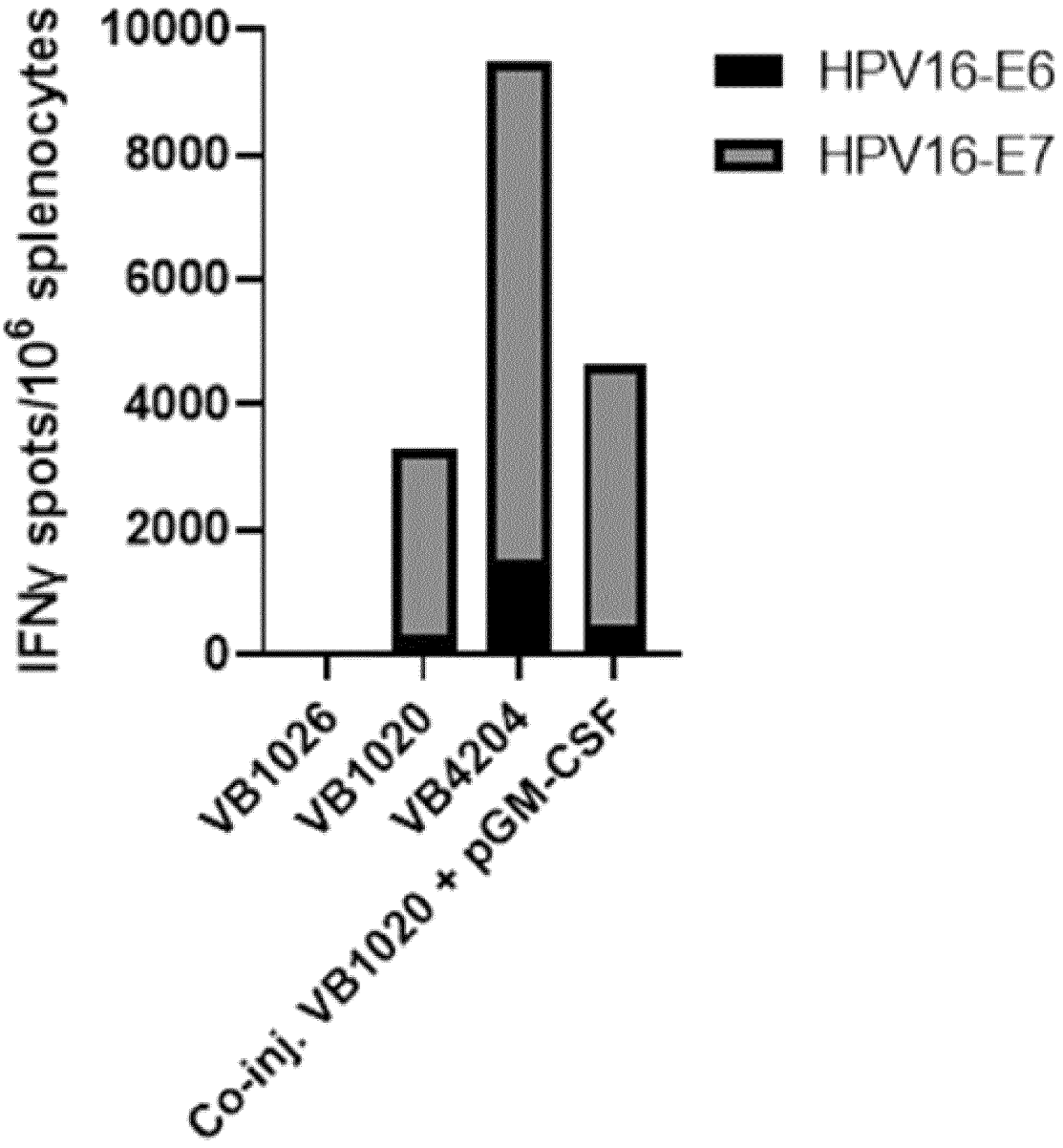

IFNγ spots/10^6 splenocytes
10000
8000
6000
4000
2000
0
HPV16-E6
HPV16-E7
VB1026
VB1020
VB4204
Co-inj. VB1020 + pGM-CSF

Fig. 30

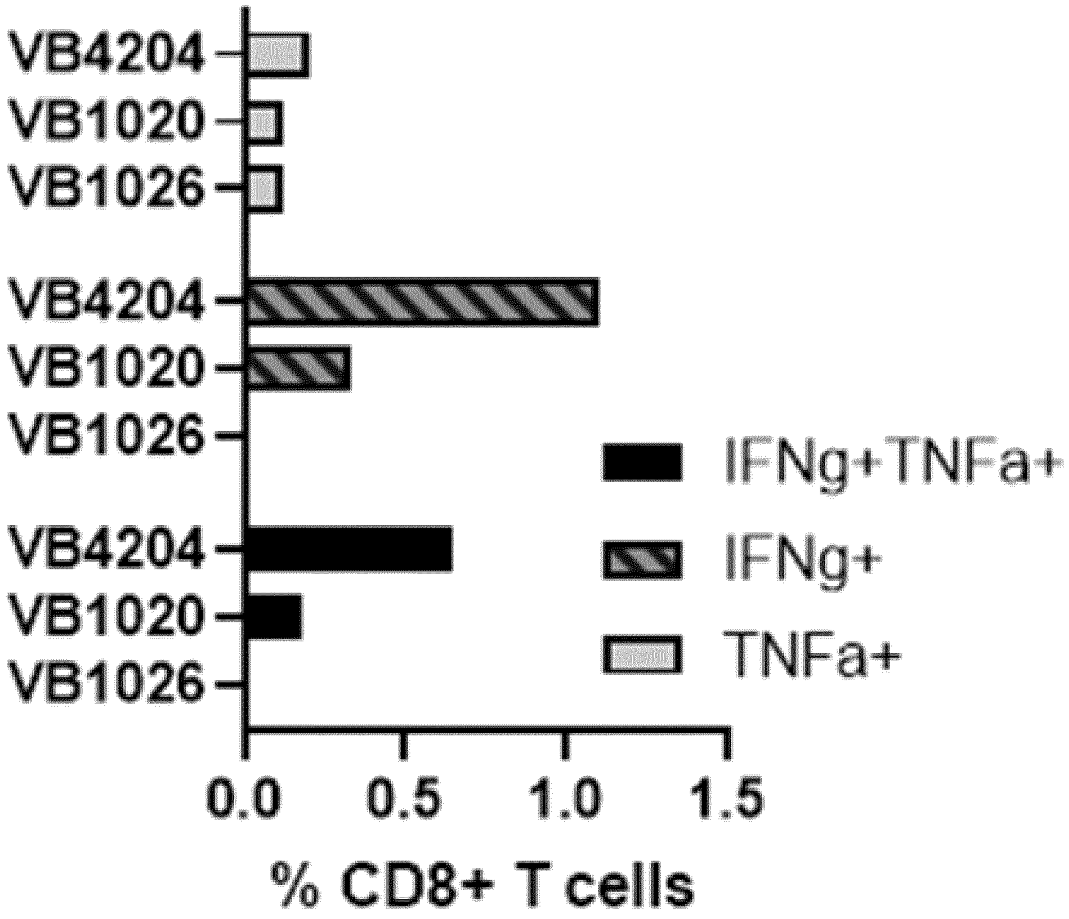

VB4204
VB1020
VB1026
VB4204
VB1020
VB1026
VB4204
VB1020
VB1026
IFNg+TNFa+
IFNg+
TNFa+
0.0
0.5
1.0
1.5
% CD8+ T cells

Fig. 31

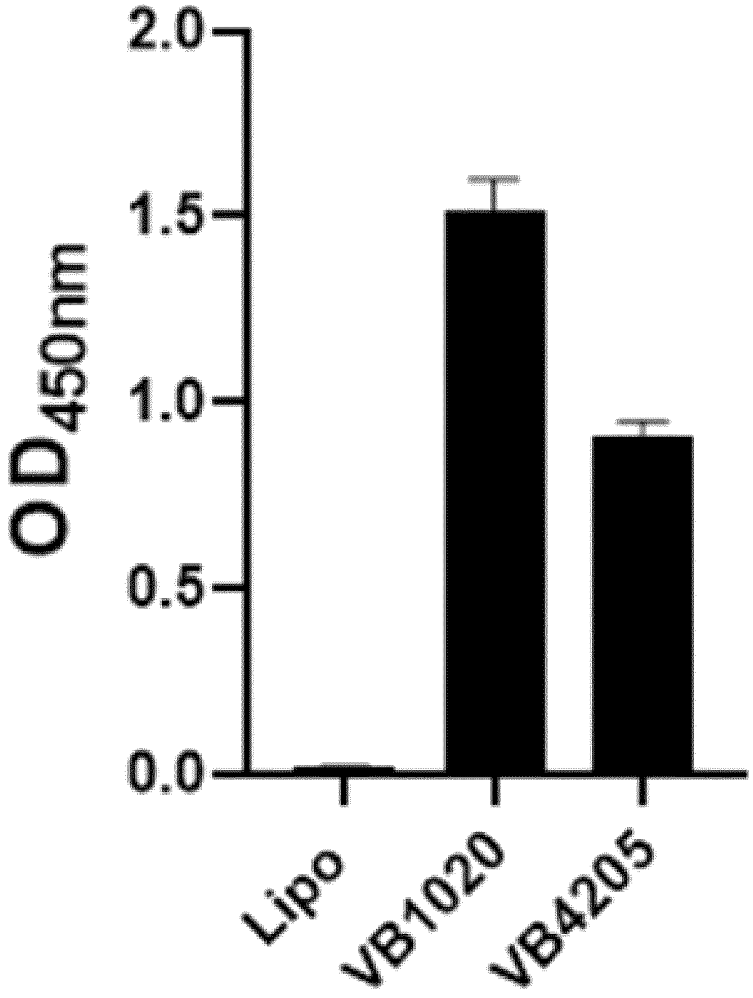


Fig. 32

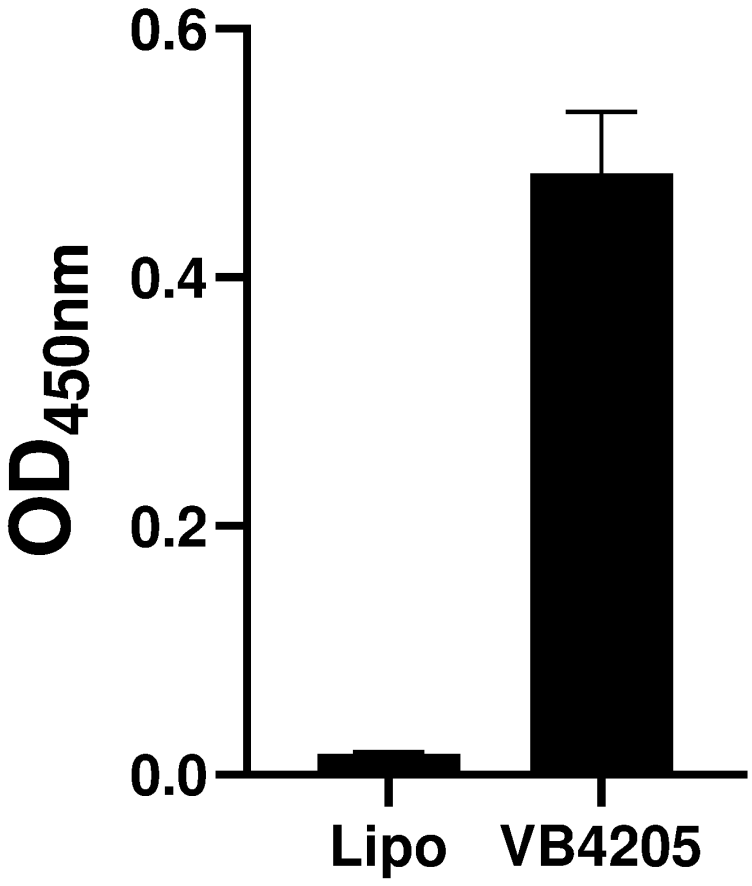


Fig. 33

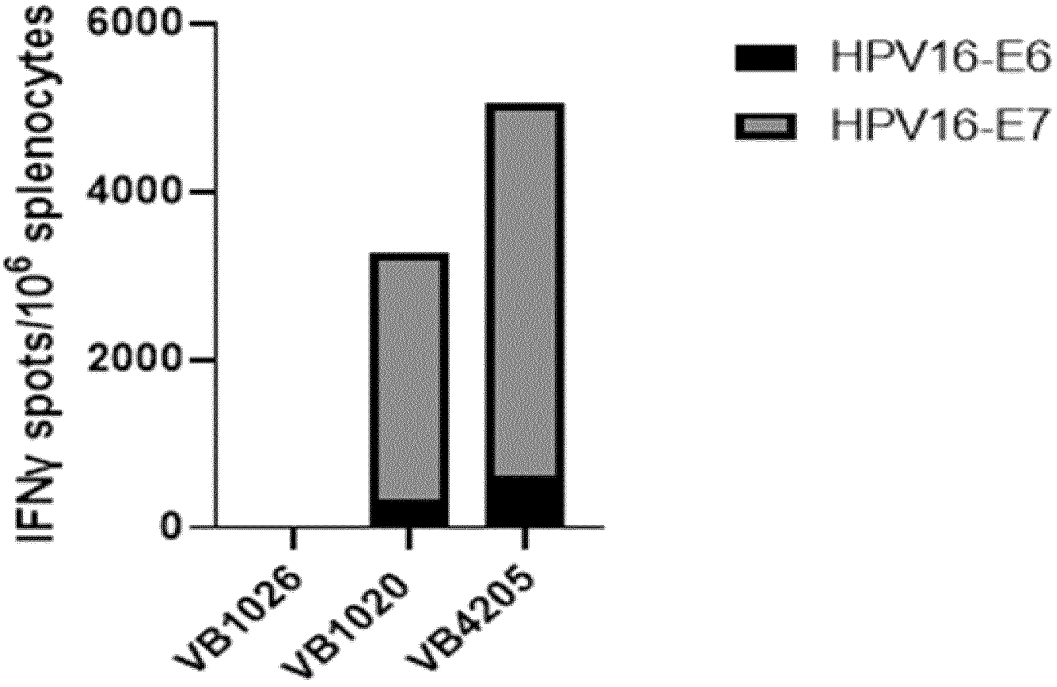

IFNγ spots/10^6 splenocytes
6000
4000
2000
0
HPV16-E6
HPV16-E7
VB1026
VB1020
VB4205

Fig. 34

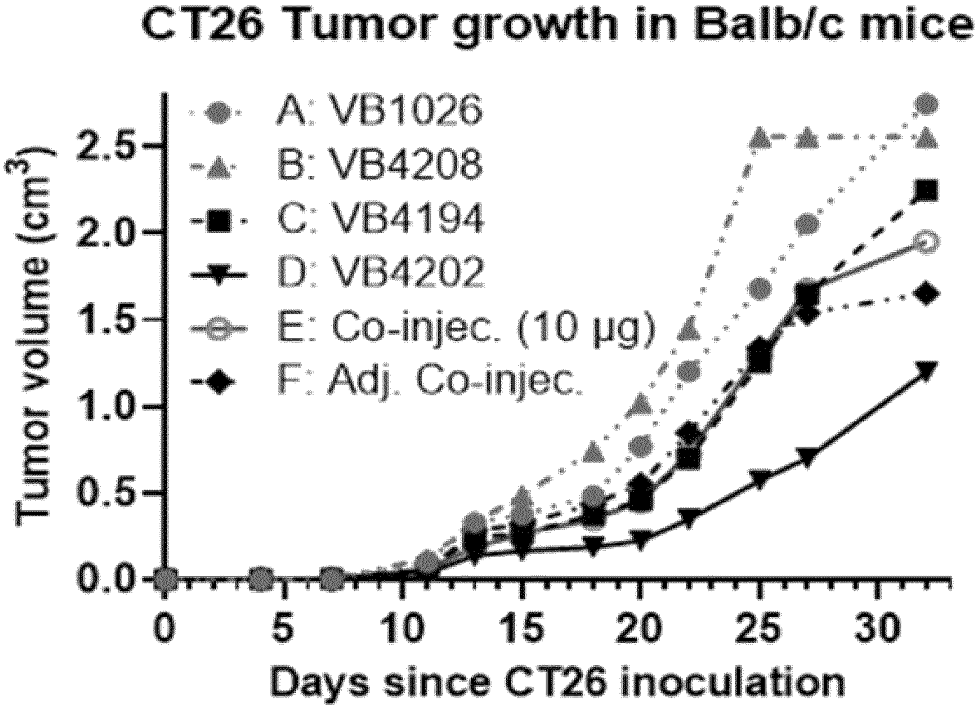

CT26 Tumor growth in Balb/c mice
Tumor volume (cm^3)
2.5
2.0
1.5
1.0
0.5
0.0
A: VB1026
B: VB4208
C: VB4194
D: VB4202
E: Co-injec. (10 µg)
F: Adj. Co-injec.
0
5
10
15
20
25
30
Days since CT26 inoculation

Fig. 35

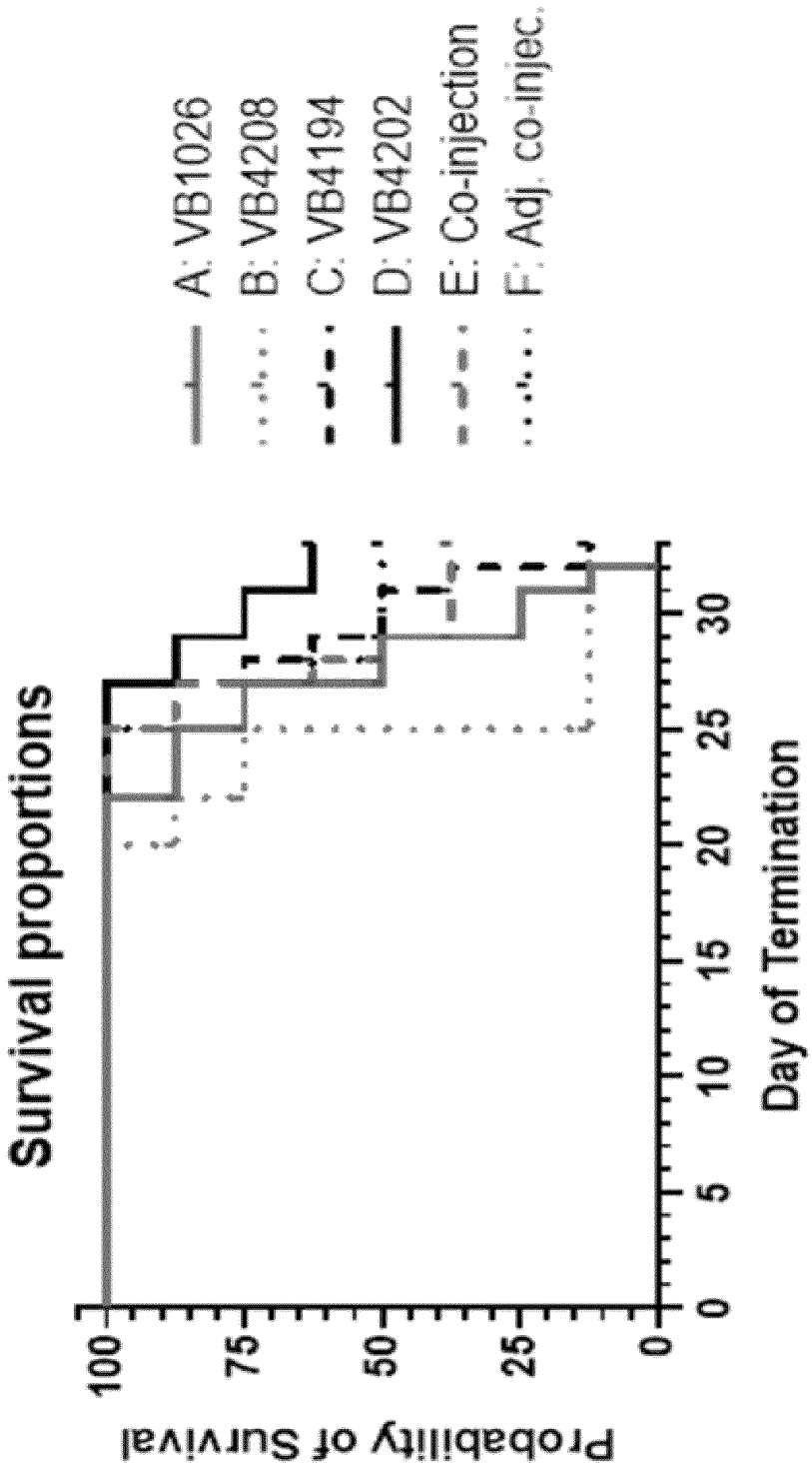

Survival proportions
Probability of Survival
100
75
50
25
0
0
5
10
15
20
25
30
Day of Termination
A: VB1026
B: VB4208
C: VB4194
D: VB4202
E: Co-injection
F: Adj. co-injec.

Fig. 36

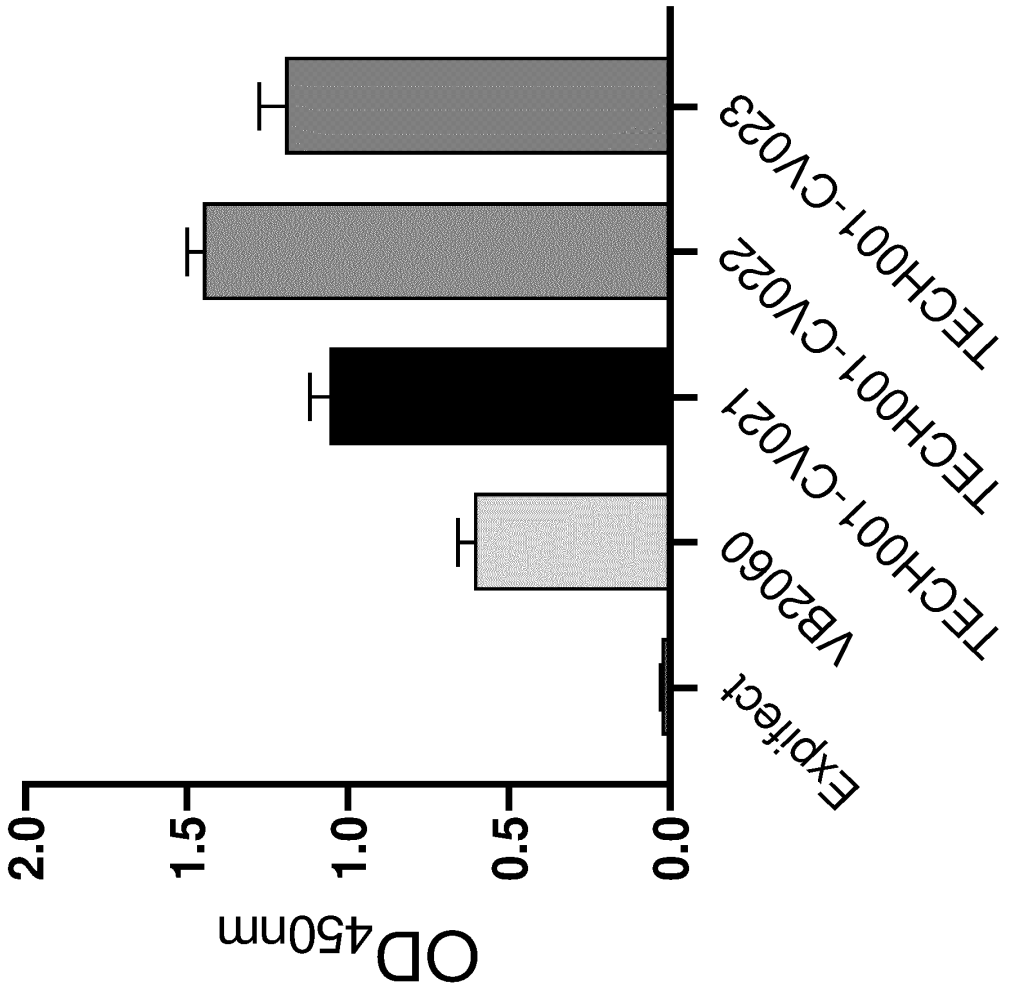

OD450nm
2.0
1.5
1.0
0.5
0.0
Expifect
VB2060
TECH001-CV021
TECH001-CV022
TECH001-CV023

Fig. 37

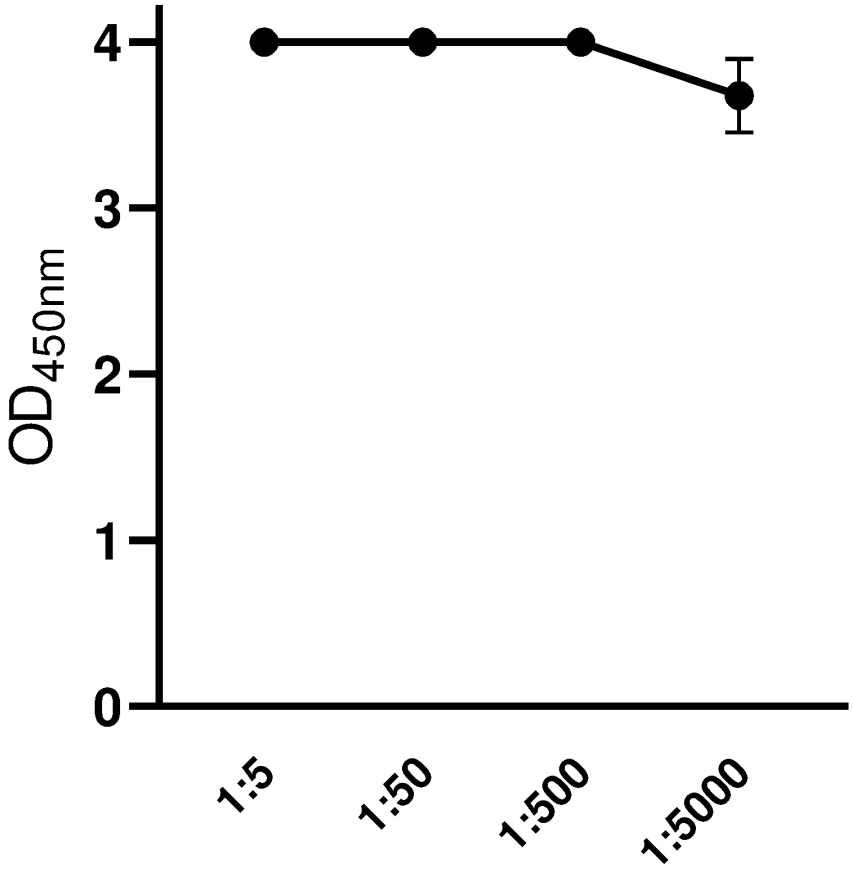


Fig. 38a

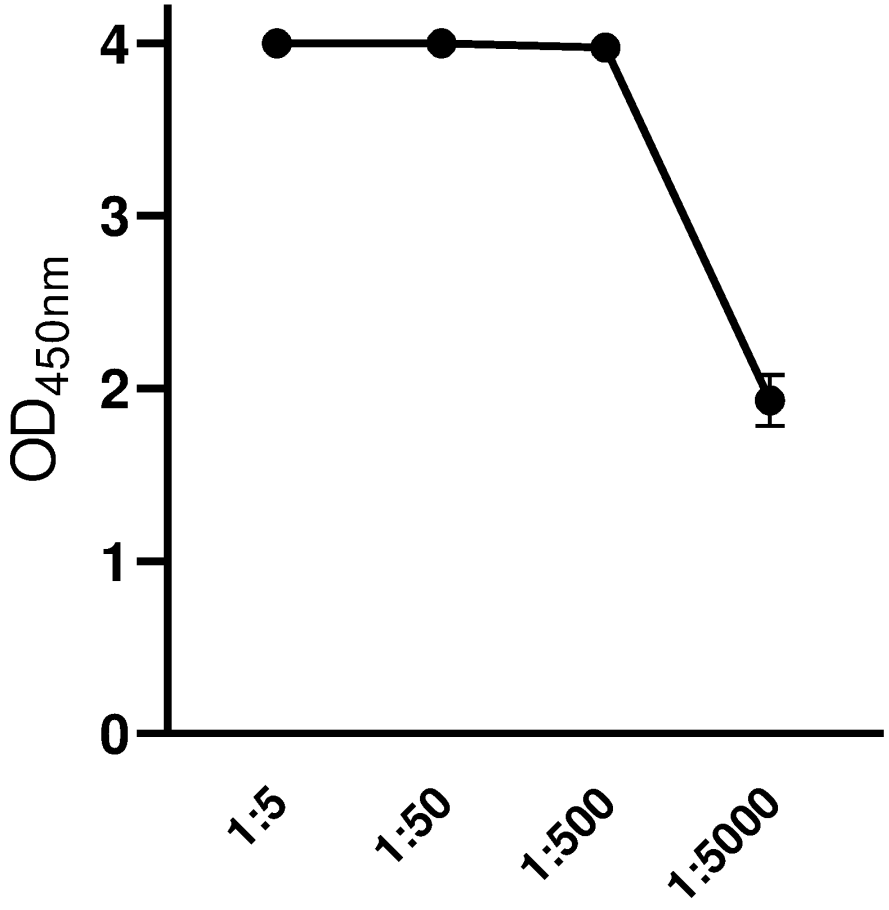


Fig. 38b (CONT.)

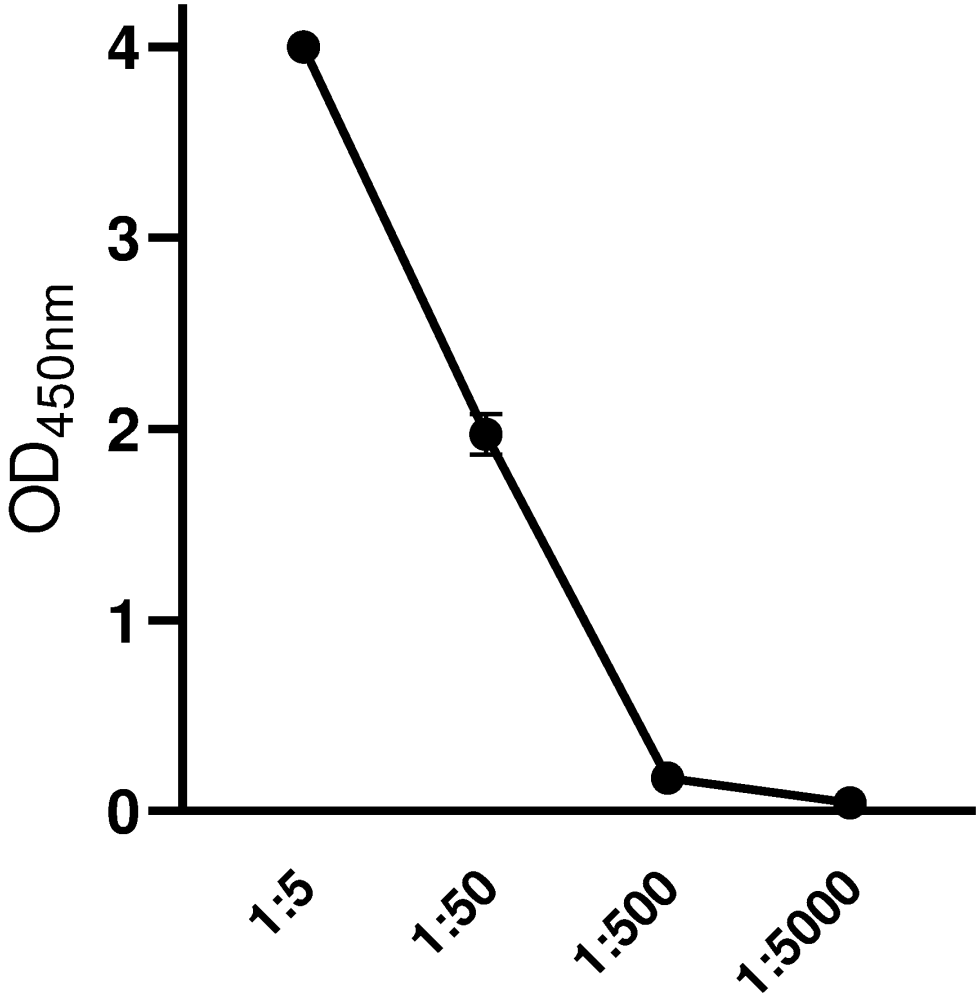


Fig. 38c (CONT.)

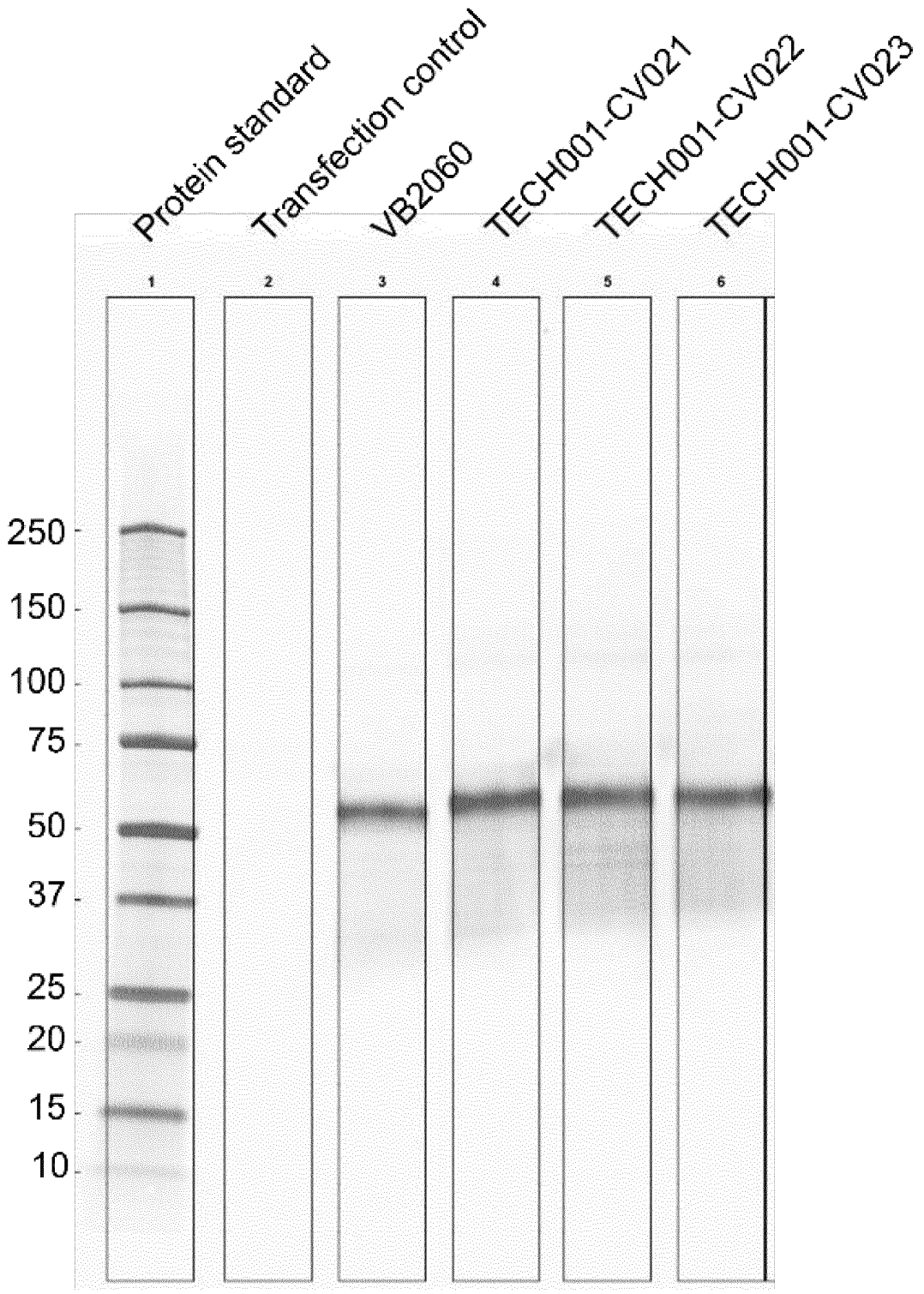

Protein standard
Transfection control
VB2060
TECH001-CV021
TECH001-CV022
TECH001-CV023
1
2
3
4
5
6
250
150
100
75
50
37
25
20
15
10

Fig. 39

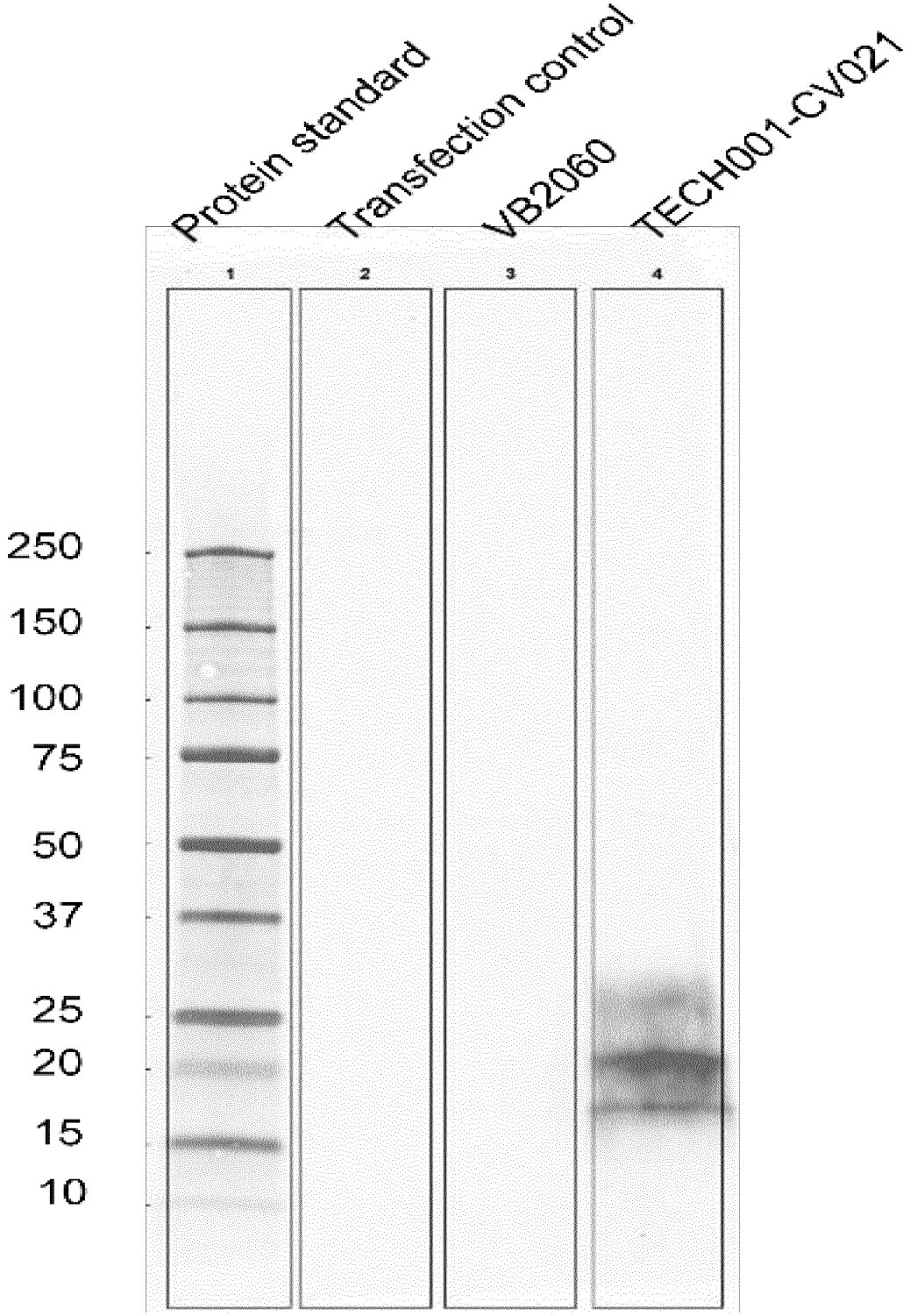

Protein standard
Transfection control
VB2060
TECH001-CV021
1
2
3
4
250
150
100
75
50
37
25
20
15
10

Fig. 40

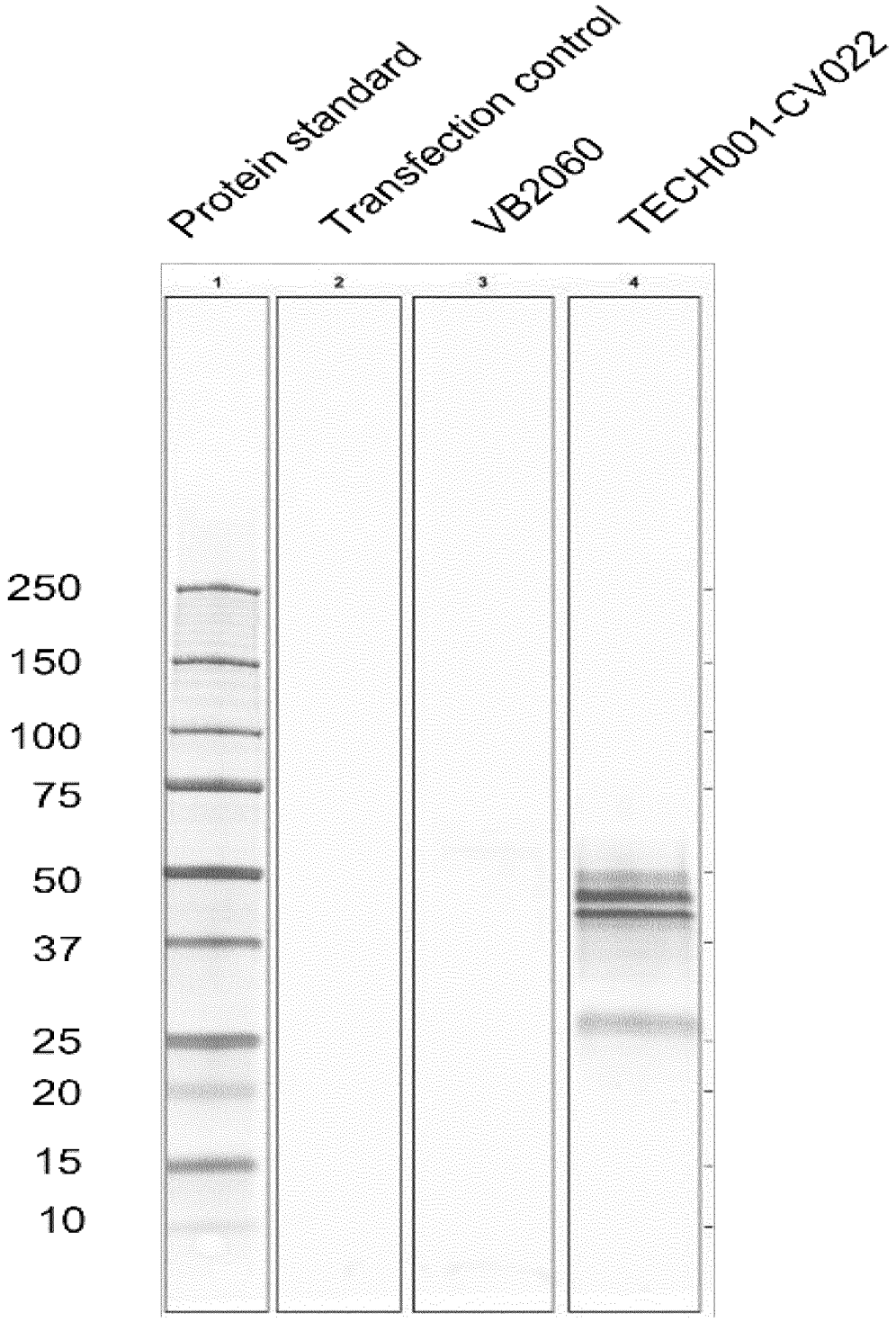

Protein standard
Transfection control
VB2060
TECH001-CV022
1
2
3
4
250
150
100
75
50
37
25
20
15
10

Fig. 41

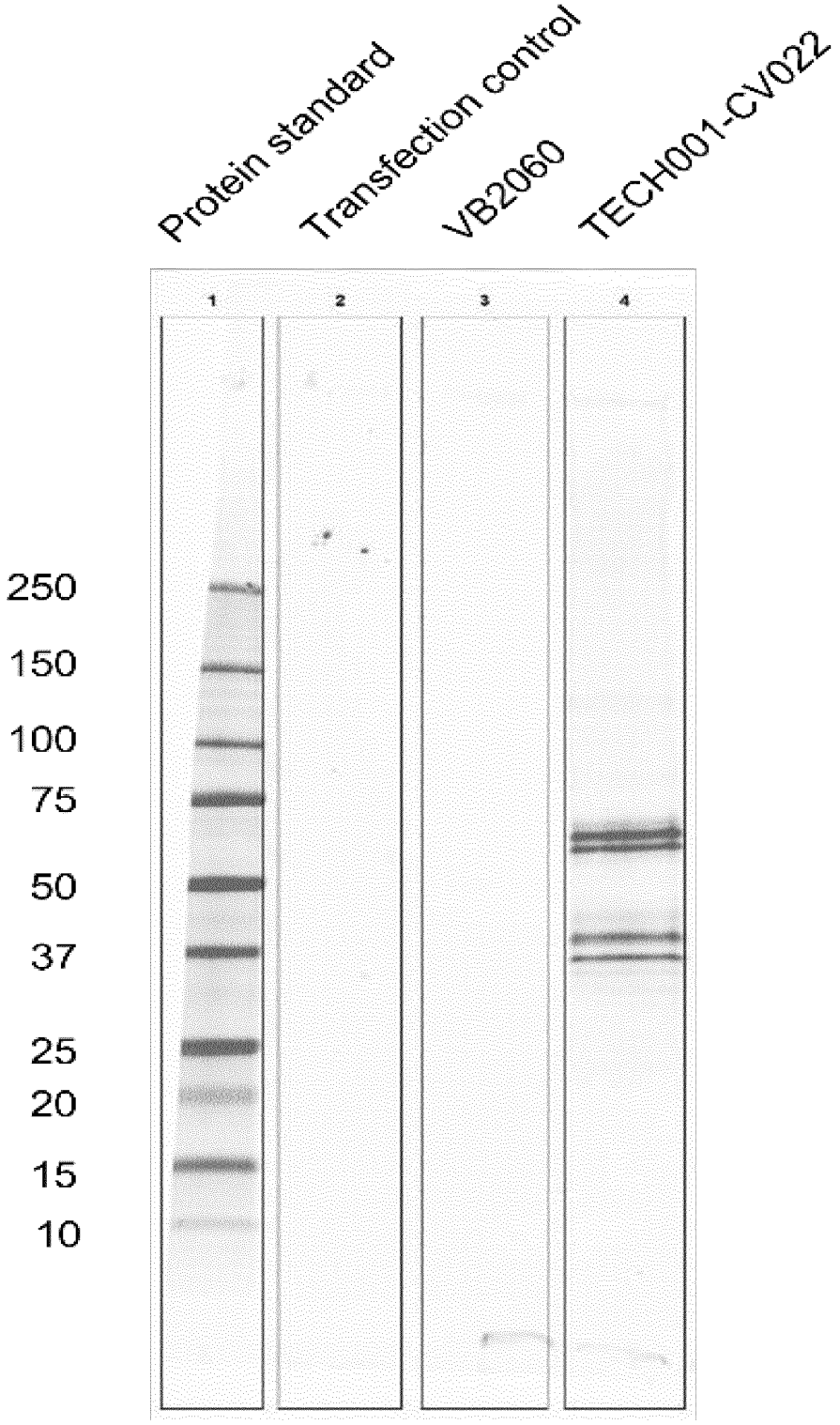

Protein standard
Transfection control
VB2060
TECH001-CV022
1
2
3
4
250
150
100
75
50
37
25
20
15
10

Fig. 41 (Cont.)

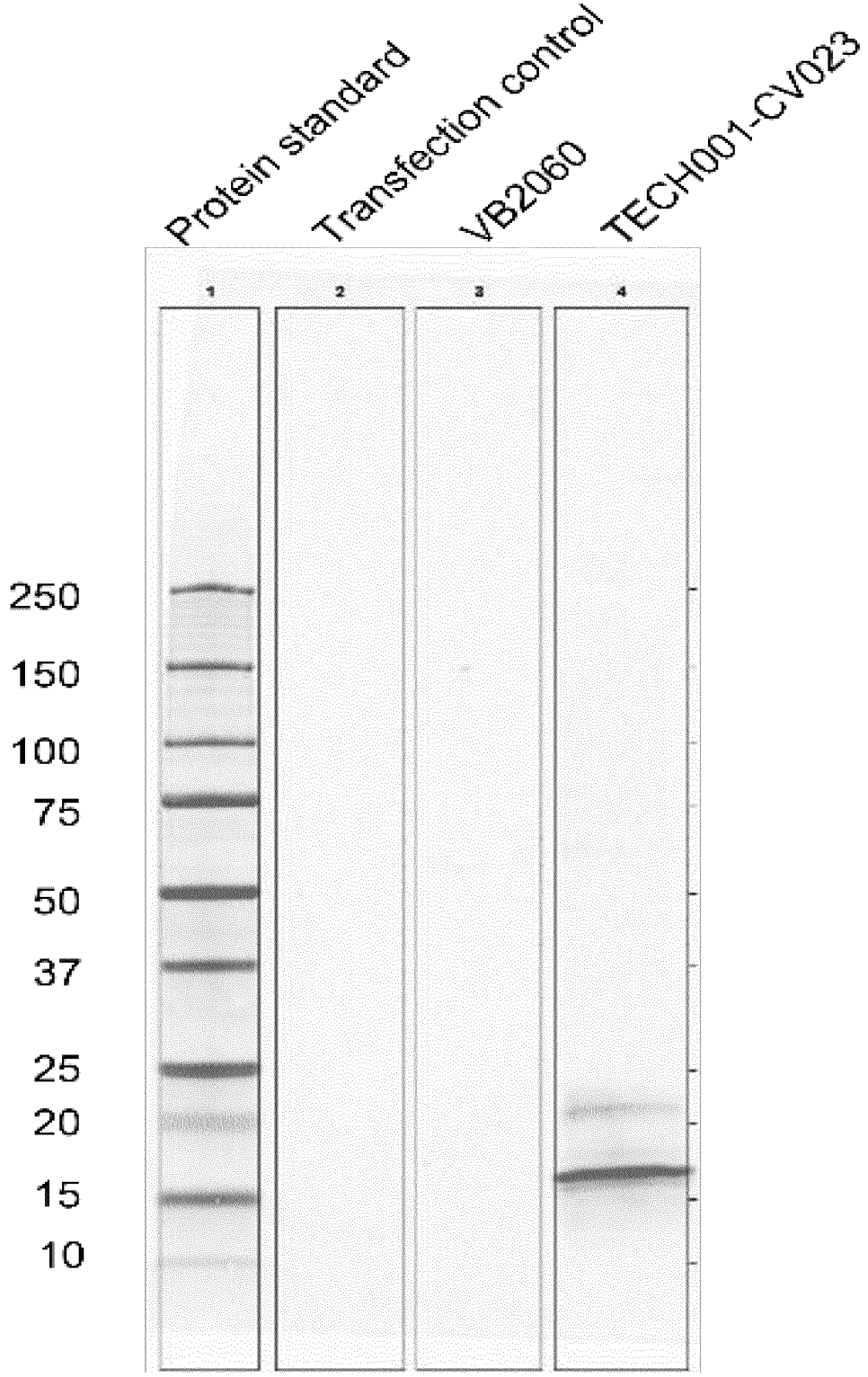

Protein standard
Transfection control
VB2060
TECH001-CV023
1
2
3
4
250
150
100
75
50
37
25
20
15
10

Fig. 42

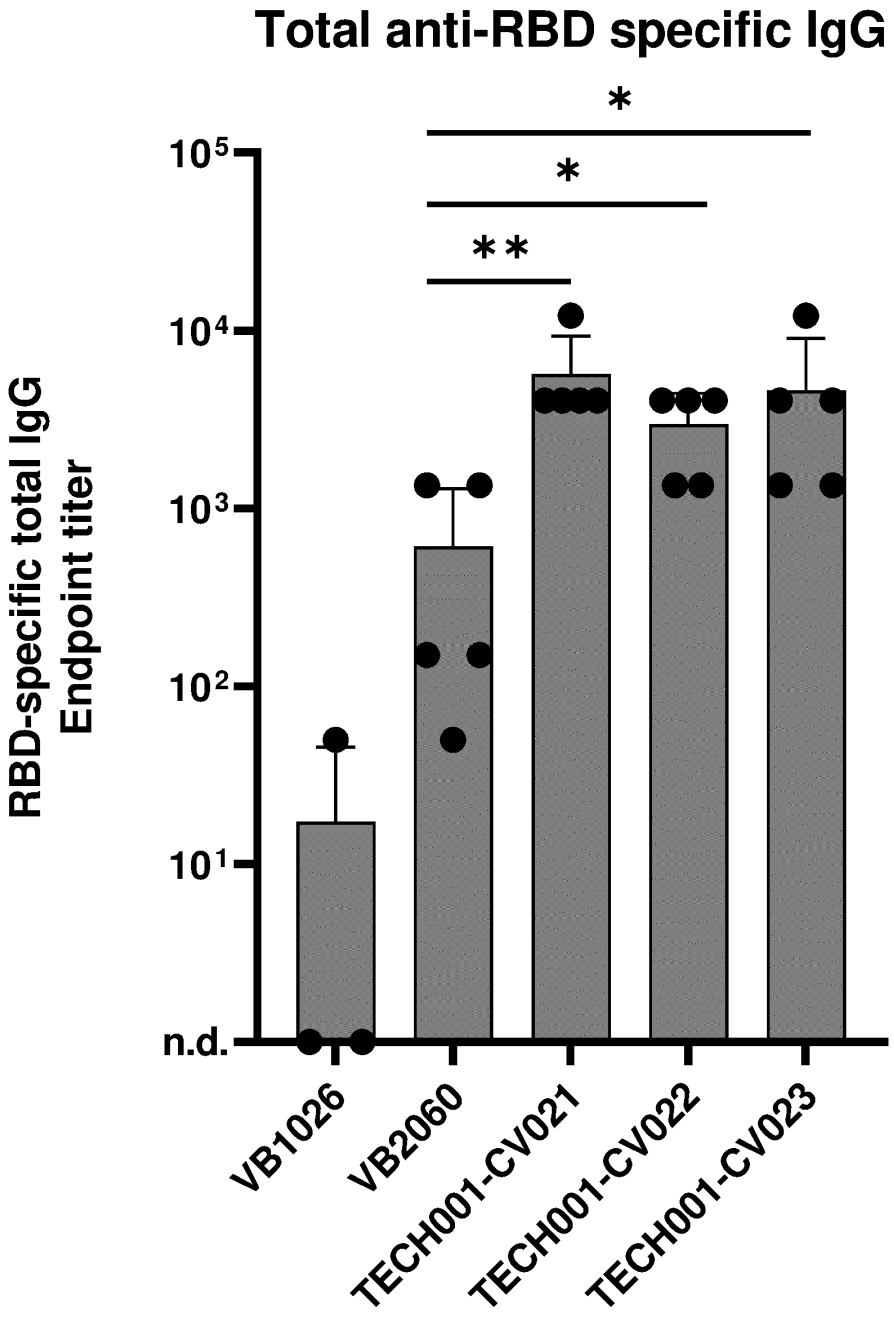

Total anti-RBD specific IgG
RBD-specific total IgG
Endpoint titer
10^5
10^4
10^3
10^2
10^1
n.d.
*
*
**
VB1026
VB2060
TECH001-CV021
TECH001-CV022
TECH001-CV023

Fig. 43

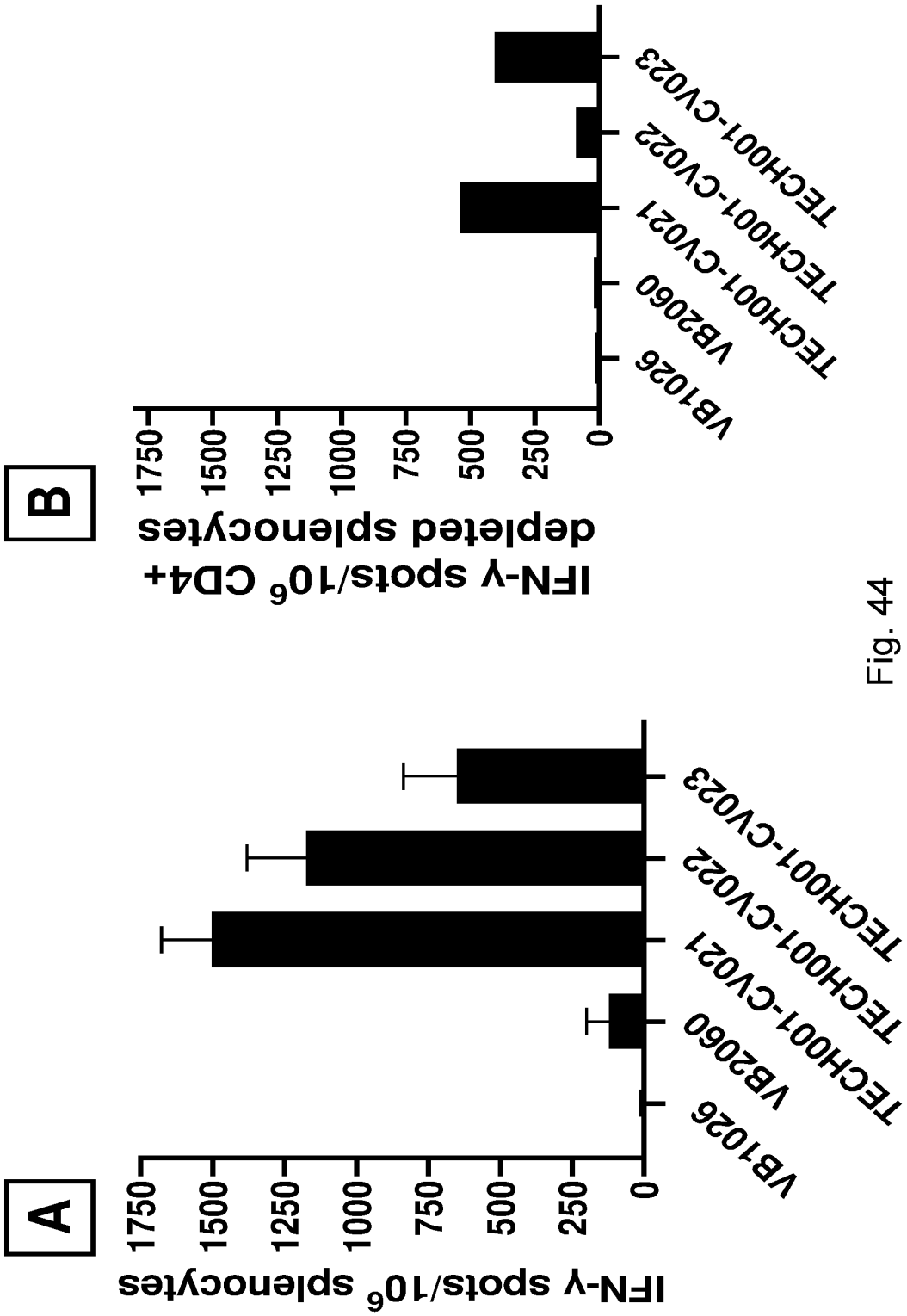

A
IFN-γ spots/10^6 splenocytes
0
250
500
750
1000
1250
1500
1750
VB1026
VB2060
TECH001-CV021
TECH001-CV022
TECH001-CV023
B
IFN-γ spots/10^6 CD4+ depleted splenocytes
0
250
500
750
1000
1250
1500
1750
VB1026
VB2060
TECH001-CV021
TECH001-CV022
TECH001-CV023

Fig. 44