Figure 1

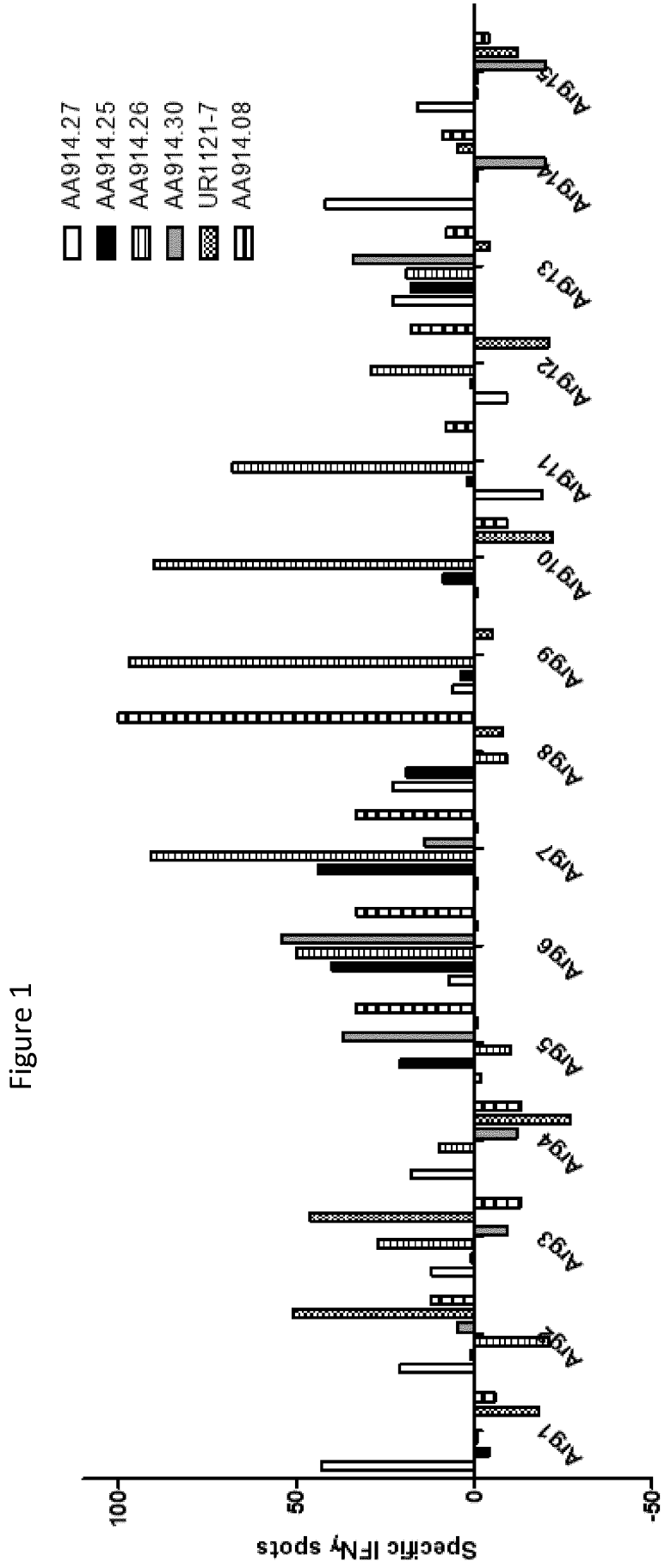

AA914.27
AA914.25
AA914.26
AA914.30
UR1121-7
AA914.08
Specific IFNγ spots
100
50
0
-50
AG1
AG2
AG3
AG4
AG5
AG6
AG7
AG8
AG9
AG10
AG11
AG12
AG13
AG14
AG15

Figure 2

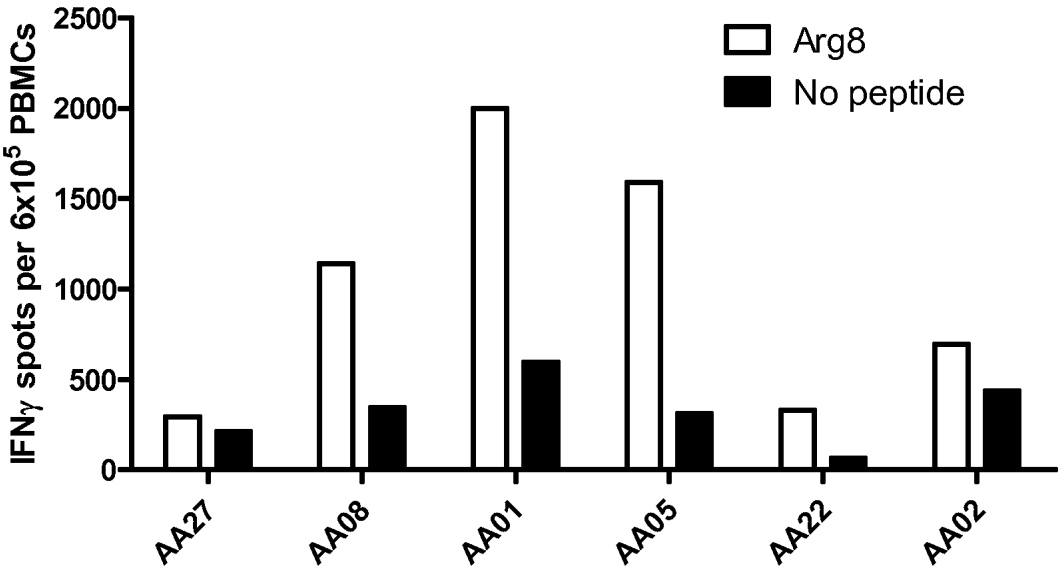

IFNγ spots per 6x10^5 PBMCs
2500
2000
1500
1000
500
0
Arg8
No peptide
AA27
AA08
AA01
AA05
AA22
AA02

Figure 3

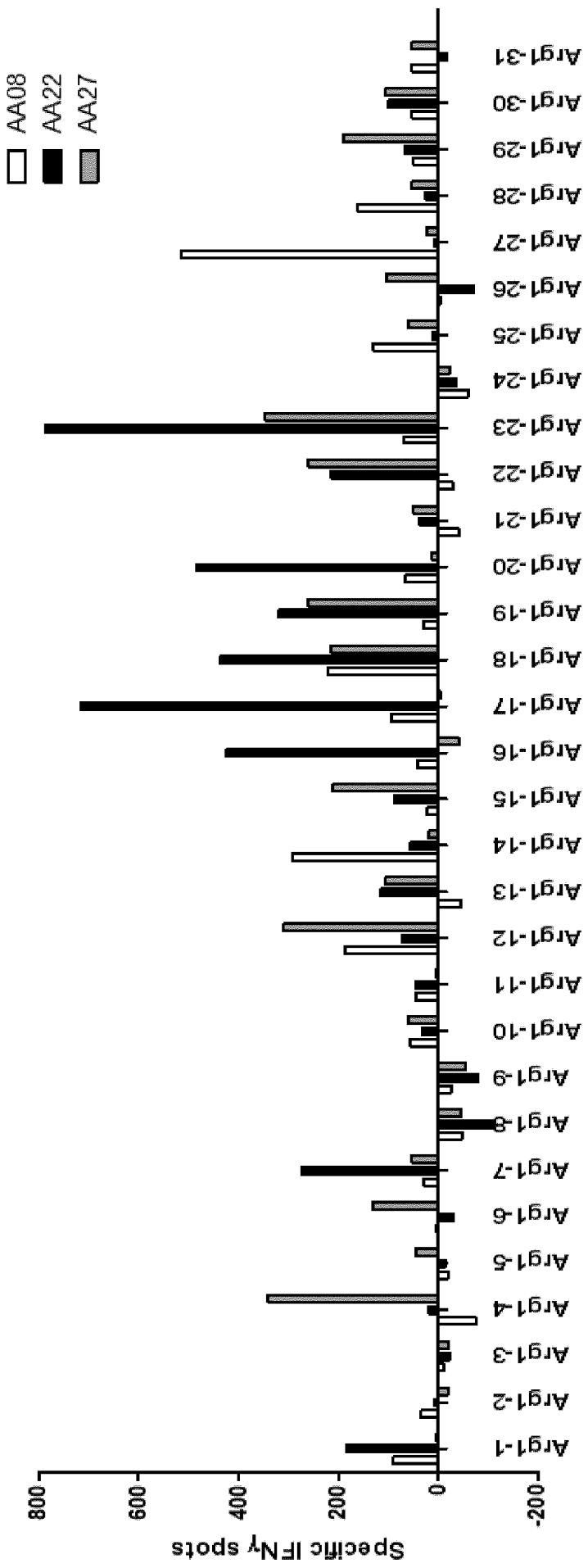

AA08
AA22
AA27
Specific IFNγ spots
800
600
400
200
0
-200
Arg1-1
Arg1-2
Arg1-3
Arg1-4
Arg1-5
Arg1-6
Arg1-7
Arg1-8
Arg1-9
Arg1-10
Arg1-11
Arg1-12
Arg1-13
Arg1-14
Arg1-15
Arg1-16
Arg1-17
Arg1-18
Arg1-19
Arg1-20
Arg1-21
Arg1-22
Arg1-23
Arg1-24
Arg1-25
Arg1-26
Arg1-27
Arg1-28
Arg1-29
Arg1-30
Arg1-31

Figure 4


HD301
HD307
HD310
HD331
HD304
HD312
HD303
HD313
Specific IFNγ spots
200
150
100
50
0
-50
AI98
AI91-4
AI91-12
AI91-17
AI91-18
AI91-19
AI91-20
AI91-23
AI91-27

Figure 5

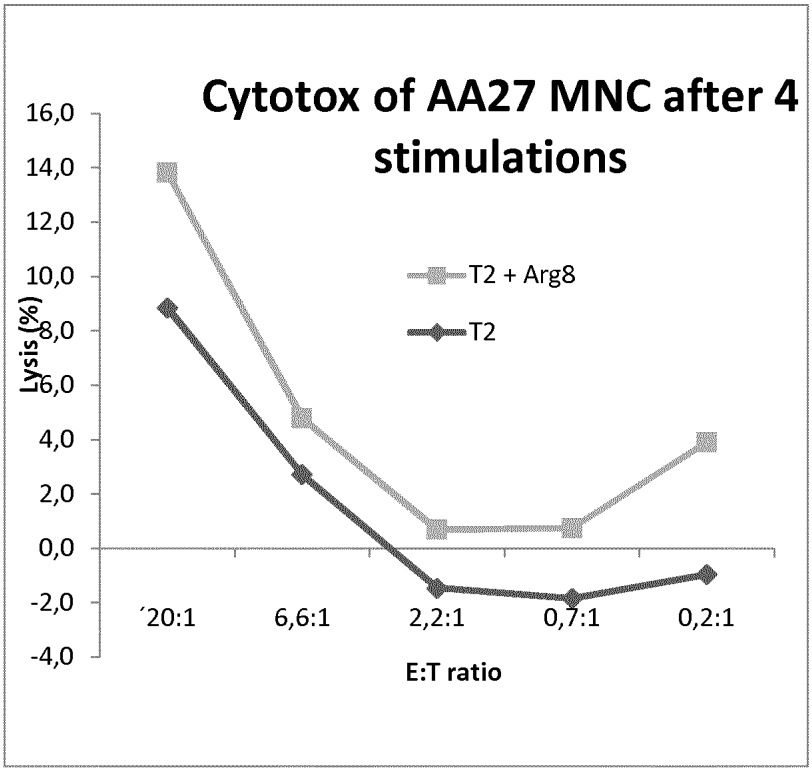


Figure 6

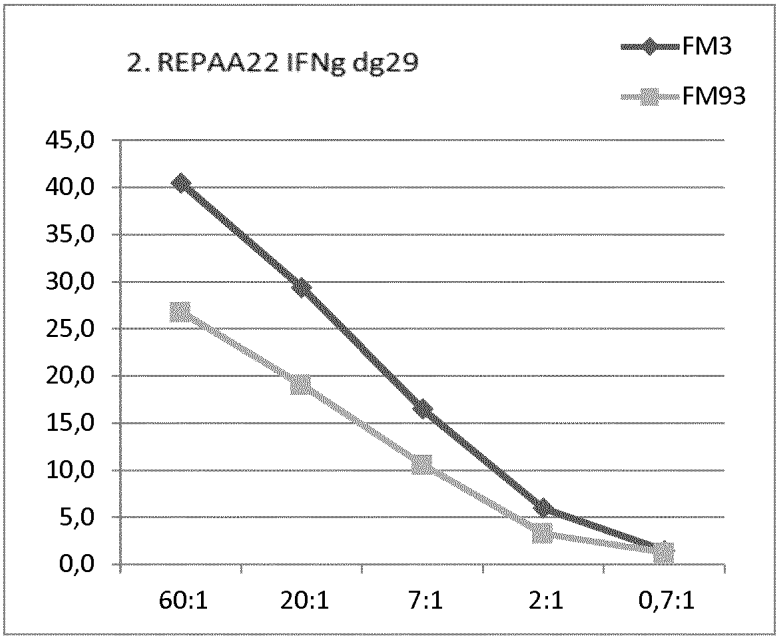


Figure 7

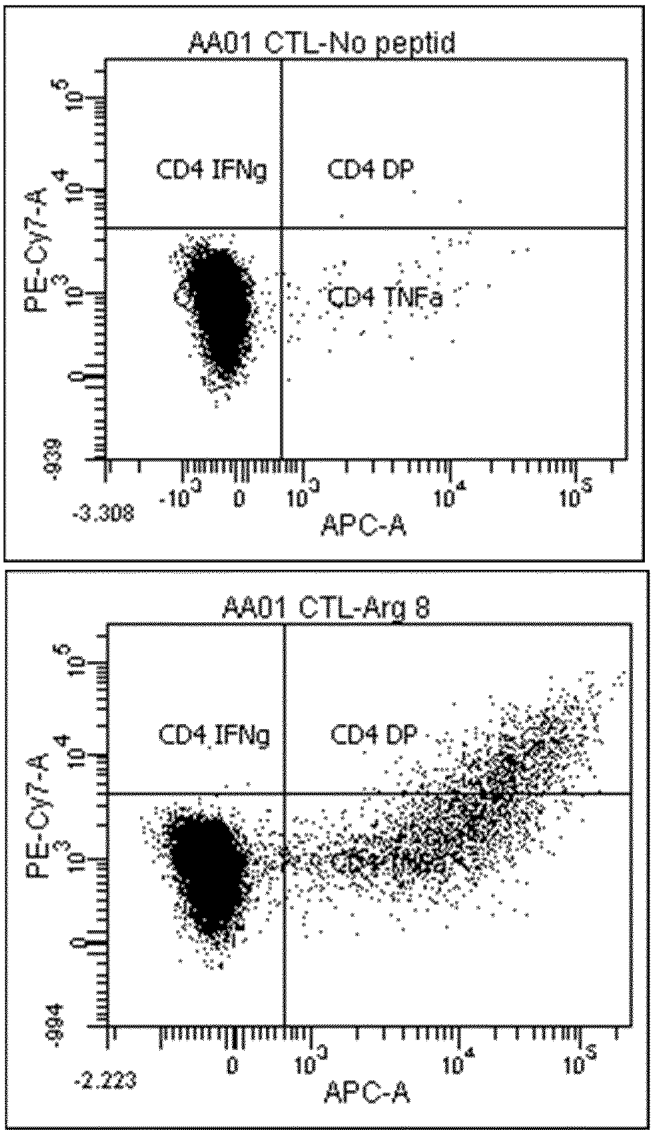

AA01 CTL-No peptid
CD4 IFNg
CD4 DP
CD4 TNFa
PE-Cy7-A
APC-A
-939
-3.308
AA01 CTL-Arg 8
CD4 IFNg
CD4 DP
CD4 TNFa
PE-Cy7-A
APC-A
-994
-2.223

Figure 8

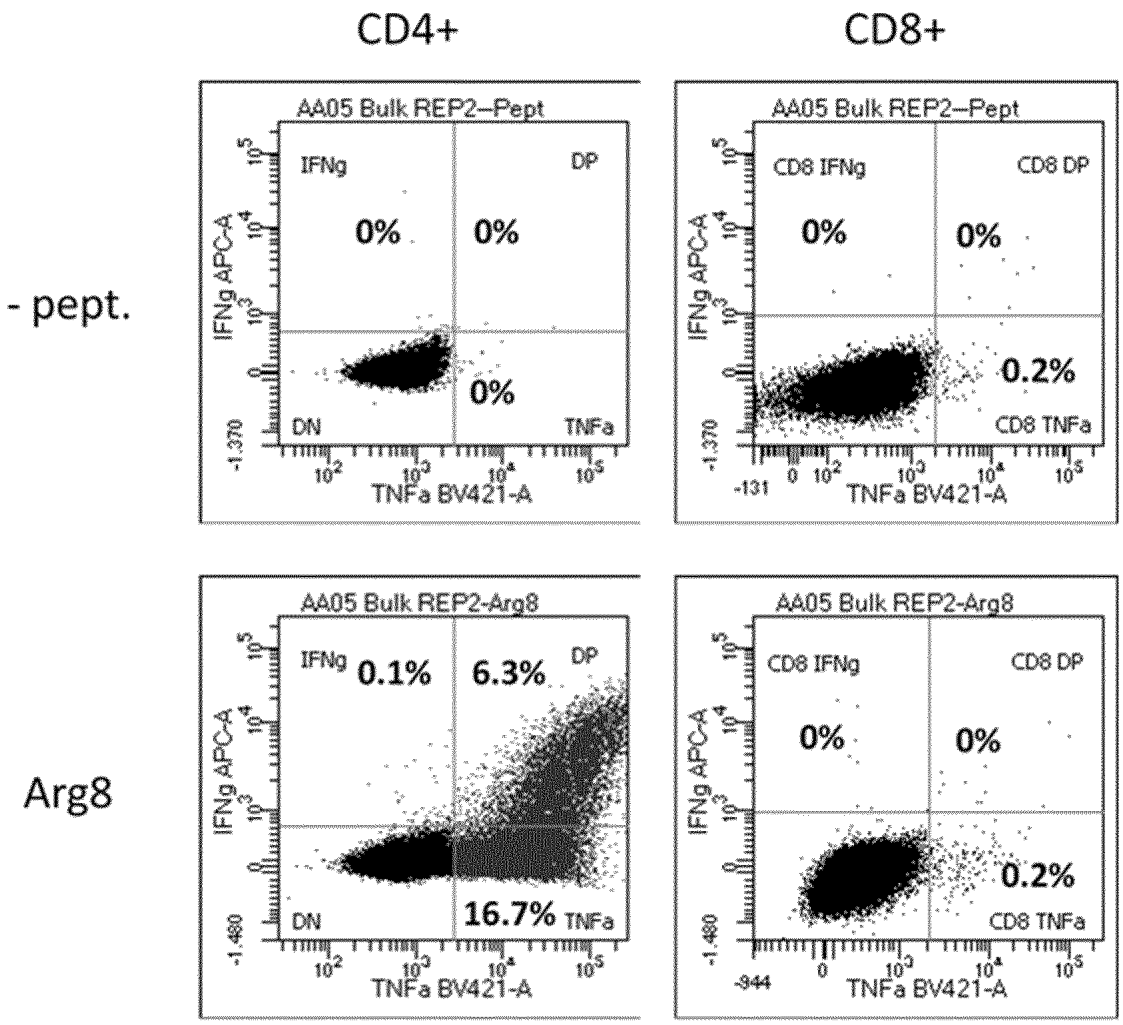

CD4+
CD8+
- pept.
Arg8
AA05 Bulk REP2–Pept
AA05 Bulk REP2-Arg8
IFNg
DP
DN
TNFa
CD8 IFNg
CD8 DP
CD8 TNFa
0%
0.1%
6.3%
16.7%
0.2%
IFNg APC-A
TNFa BV421-A

Figure 9

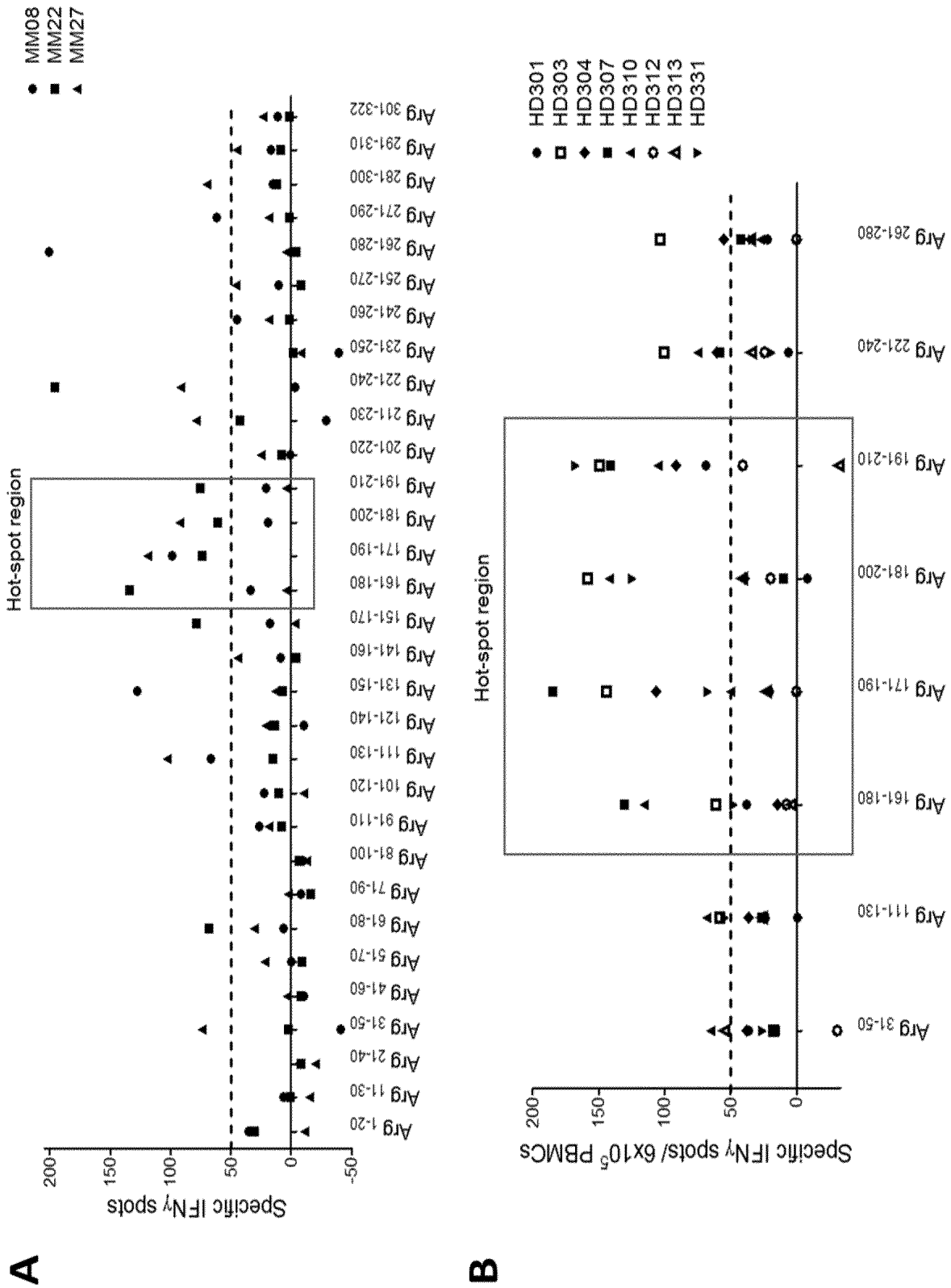

A
MM08
MM22
MM27
Hot-spot region
Specific IFNγ spots
200
150
100
50
0
-50
Arg 1-20
Arg 11-30
Arg 21-40
Arg 31-50
Arg 41-60
Arg 51-70
Arg 61-80
Arg 71-90
Arg 81-100
Arg 91-110
Arg 101-120
Arg 111-130
Arg 121-140
Arg 131-150
Arg 141-160
Arg 151-170
Arg 161-180
Arg 171-190
Arg 181-200
Arg 191-210
Arg 201-220
Arg 211-230
Arg 221-240
Arg 231-250
Arg 241-260
Arg 251-270
Arg 261-280
Arg 271-290
Arg 281-300
Arg 291-310
Arg 301-322
B
HD301
HD303
HD304
HD307
HD310
HD312
HD313
HD331
Hot-spot region
Specific IFNγ spots/ 6x10^5 PBMCs
200
150
100
50
0
Arg 31-50
Arg 111-130
Arg 161-180
Arg 171-190
Arg 181-200
Arg 191-210
Arg 221-240
Arg 261-280

Figure 10

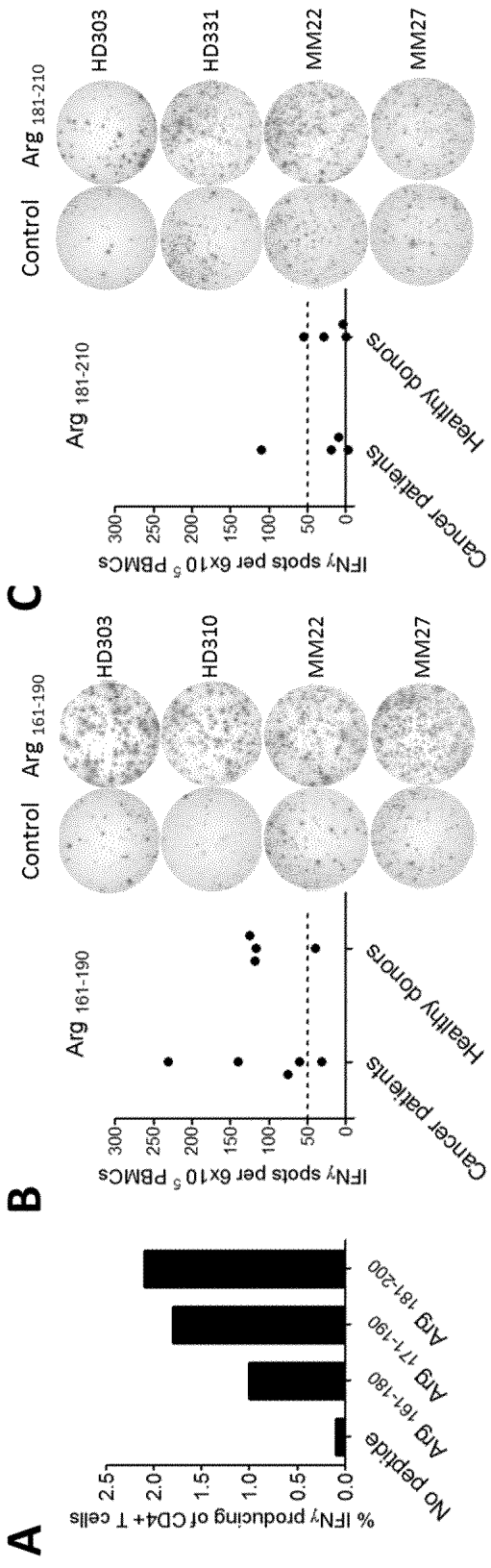

A
% IFNγ producing of CD4+ T cells
2.5
2.0
1.5
1.0
0.5
0.0
No peptide
Arg 161-180
Arg 171-190
Arg 181-200
B
Arg 161-190
IFNγ spots per 6x10 5 PBMCs
300
250
200
150
100
50
0
Cancer patients
Healthy donors
Control
Arg 161-190
HD303
HD310
MM22
MM27
C
Arg 181-210
IFNγ spots per 6x10 5 PBMCs
300
250
200
150
100
50
0
Cancer patients
Healthy donors
Control
Arg 181-210
HD303
HD331
MM22
MM27

Figure 11

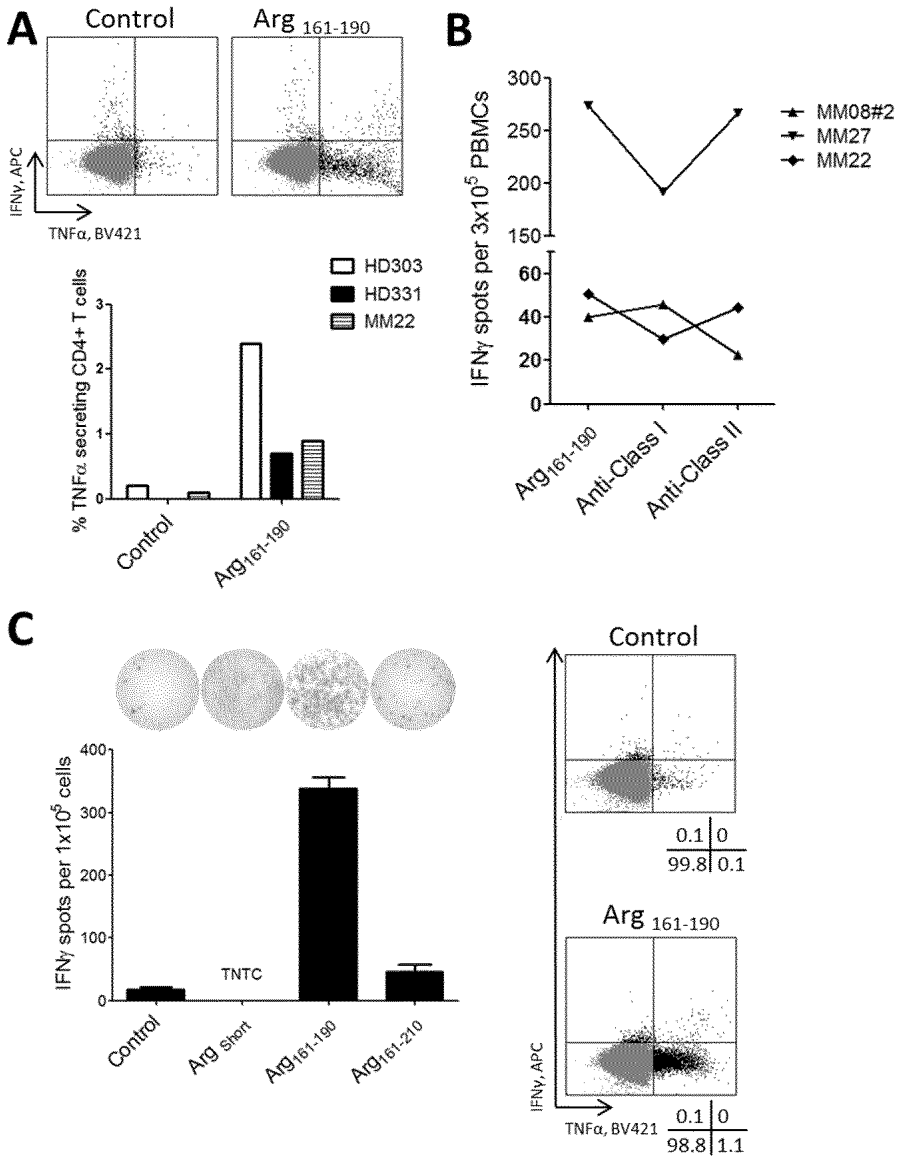
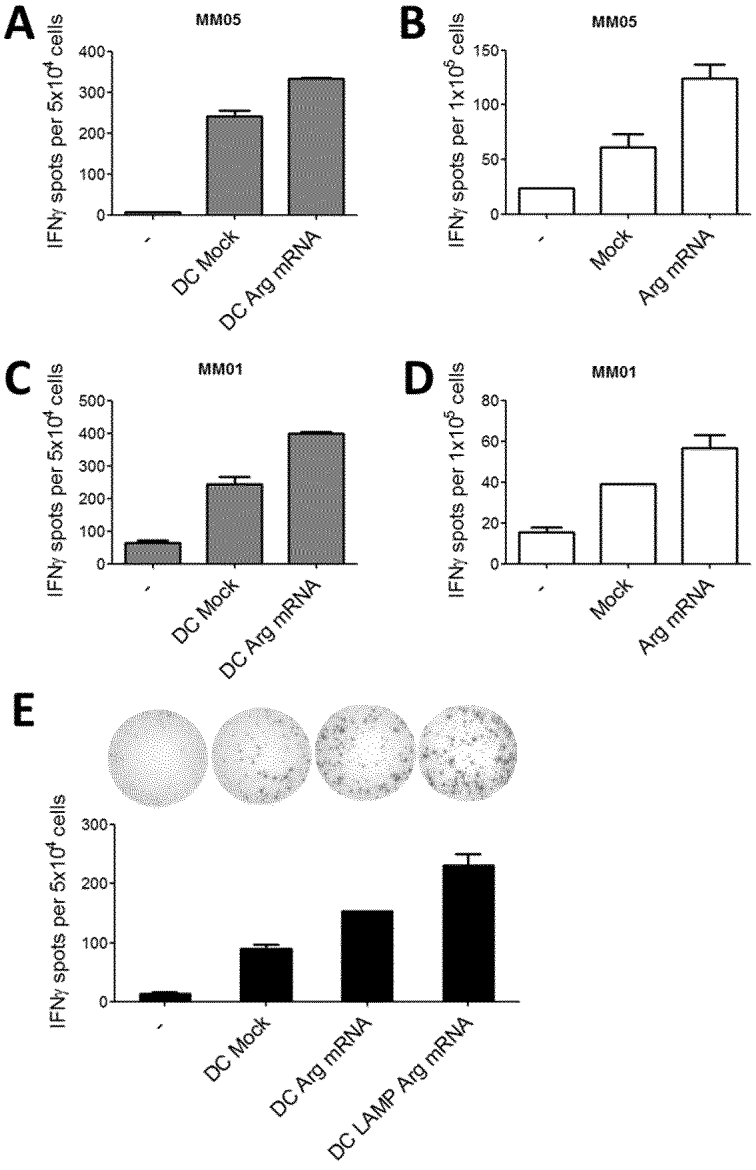

A
Control
Arg 161-190
IFNγ, APC
TNFα, BV421
HD303
HD331
MM22
% TNFα secreting CD4+ T cells
Control
Arg161-190
B
IFNγ spots per 3x10^5 PBMCs
MM08#2
MM27
MM22
Arg161-190
Anti-Class I
Anti-Class II
C
IFNγ spots per 1x10^5 cells
TNTC
Control
Arg Short
Arg161-190
Arg161-210
Control
0.1
0
99.8
0.1
Arg 161-190
IFNγ, APC
TNFα, BV421
0.1
0
98.8
1.1

Figure 12


A
MM05
IFNγ spots per 5x10^4 cells
400
300
200
100
0
-
DC Mock
DC Arg mRNA
B
MM05
IFNγ spots per 1x10^5 cells
150
100
50
0
-
Mock
Arg mRNA
C
MM01
IFNγ spots per 5x10^4 cells
500
400
300
200
100
0
-
DC Mock
DC Arg mRNA
D
MM01
IFNγ spots per 1x10^5 cells
80
60
40
20
0
-
Mock
Arg mRNA

E
IFNγ spots per 5x10^4 cells
300
200
100
0
-
DC Mock
DC Arg mRNA
DC LAMP Arg mRNA

Figure 13

```
1: ARGI1_HUMAN
2: ARGI1_MOUSE
# Matrix: EBLOSUM62
# Gap_penalty: 10.0
# Extend_penalty: 0.5
#
# Length: 323
# Identity:     280/323 (86.7%)
# Similarity:   302/323 (93.5%)
# Gaps:           1/323 ( 0.3%)
# Score: 1480.0
#

ARGI1_HUMAN         1 MSAKSRTIGIIGAPFSKGQPRGGVEEGPTVLRKAGLLEKLKEQECDVKDY
50
                      ||:|.:::.||||||||||||||:||..||||||||||||.|.||:|:
ARGI1_MOUSE         1 MSSKPKSLEIIGAPFSKGQPRGGVEKGPAALRKAGLLEKLKETEYDVRDH
50

ARGI1_HUMAN        51 GDLPFADIPNDSPFQIVKNPRSVGKASEQLAGKVAEVKKNGRISLVLGGD
100
                      |||.|.|:||||.||||||||||||:|:|||.||||:||||:|:||||||
ARGI1_MOUSE        51 GDLAFVDVPNDSSFQIVKNPRSVGKANEELAGVVAEVQKNGRVSVVLGGD
100

ARGI1_HUMAN       101 HSLAIGSISGHARVHPDLGVIWVDAHTDINTPLTTTSGNLHGQPVSFLLK
150
                      ||||:||||||||||||.||||||||||||||:||||||||||||||||
ARGI1_MOUSE       101 HSLAVGSISGHARVHPDLCVIWVDAHTDINTPLTTSSGNLHGQPVSFLLK
150

ARGI1_HUMAN       151 ELKGKIPDVP GFSWVTPCISAKDIVYIGLRDVDPGEHYILKTLGIKYFSM
200
                      |||||.|||||||||||||||||||||||||||||:||||||||||
ARGI1_MOUSE       151 ELKGKFPDVP GFSWVTPCISAKDIVYIGLRDVDPGEHYIIKTLGIKYFSM
200

ARGI1_HUMAN       201 TEVDRLGIGK VMEETLSYLLGRKKRPIHLSFDVDGLDPSFTPATGTPVVG
250
                      ||||:||||||||||.||||||||||||||||||||:||||||||||:|
ARGI1_MOUSE       201 TEVDKLGIGK VMEETFSYLLGRKKRPIHLSFDVDGLDPAFTPATGTPVLG
250

ARGI1_HUMAN       251 GLTYREGLYITEEIYKTGLLSGLDIMEVNPSLGKTPEEVTRTVNTAVAIT
300
                      ||:|||||||||||||||||||||||||||:||||.||||..||||||||:|
ARGI1_MOUSE       251 GLSYREGLYITEEIYKTGLLSGLDIMEVNPTLGKTAEEVKSTVNTAVALT
300

ARGI1_HUMAN       301 LACFGLAREGNHKP-IDYLNPPK    322
                      |||||..|||||||  .|||.|||
ARGI1_MOUSE       301 LACFGTQREGNHKPGTDYLKPPK    323
```

Figure 14

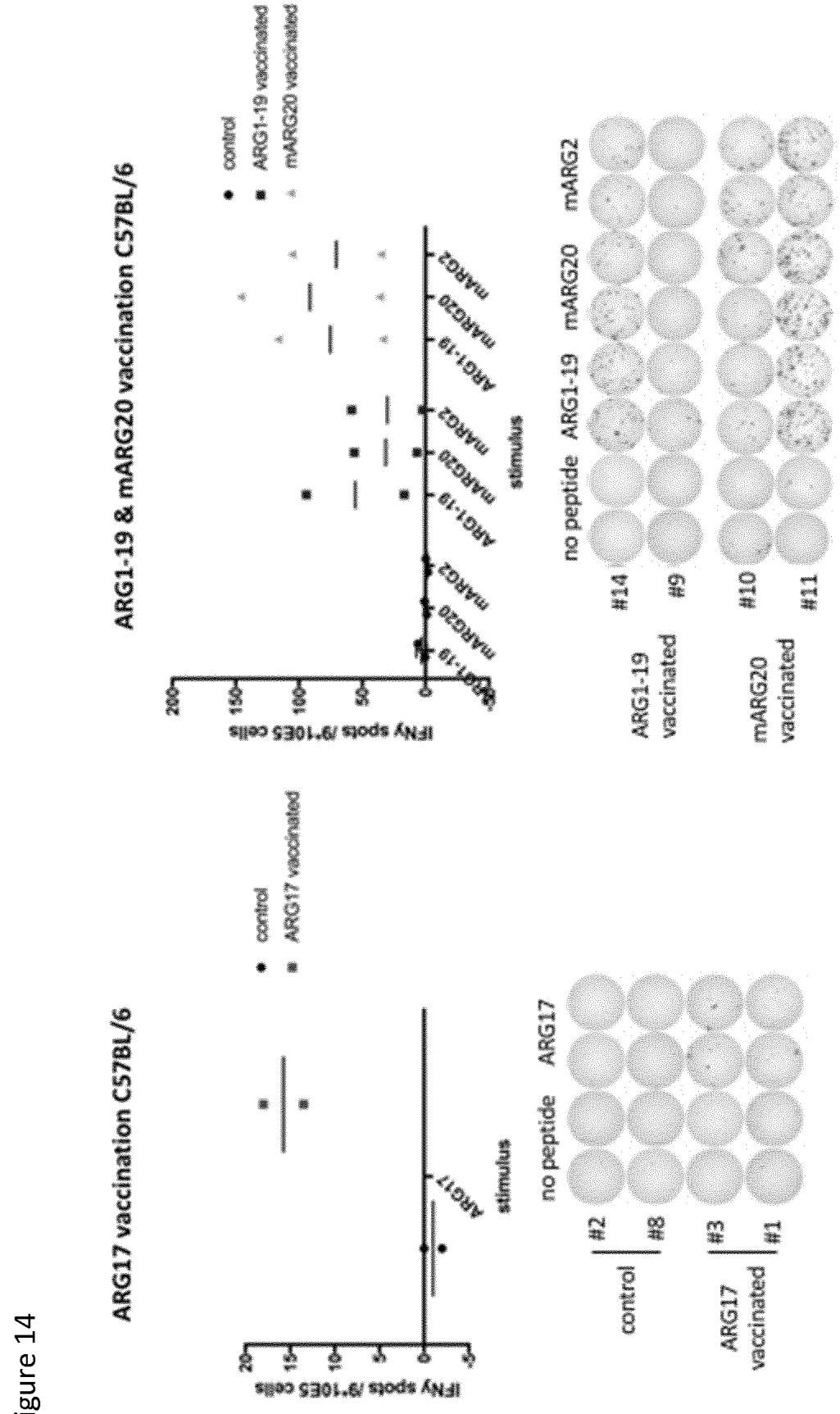

ARG17 vaccination C57BL/6
control
ARG17 vaccinated
IFNγ spots /9*10E5 cells
stimulus
ARG17
no peptide
ARG17
control
ARG17 vaccinated
#2
#8
#3
#1
ARG1-19 & mARG20 vaccination C57BL/6
control
ARG1-19 vaccinated
mARG20 vaccinated
IFNγ spots /9*10E5 cells
stimulus
ARG1-19
mARG20
mARG2
no peptide
ARG1-19
mARG20
mARG2
ARG1-19 vaccinated
mARG20 vaccinated
#14
#9
#10
#11

Figure 15

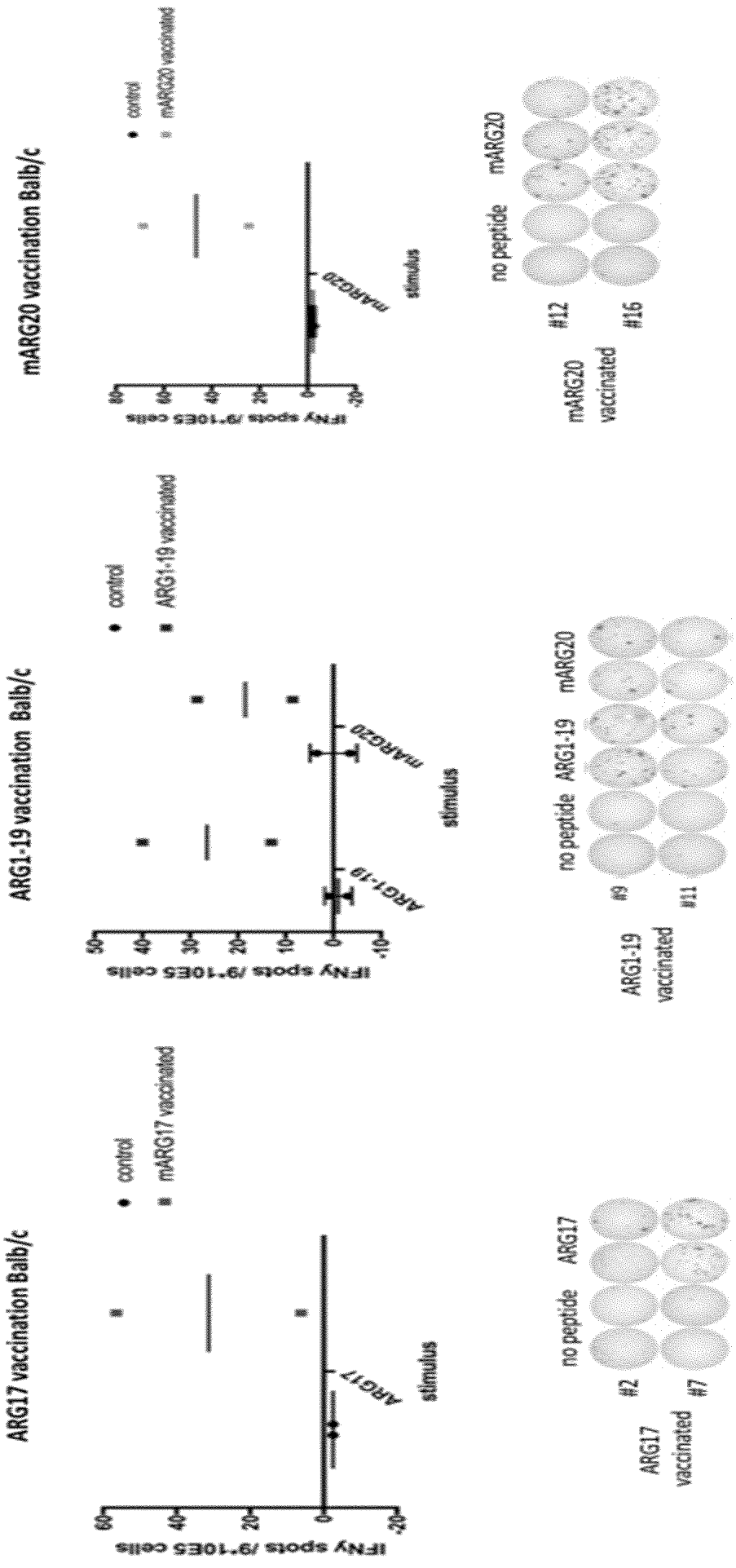
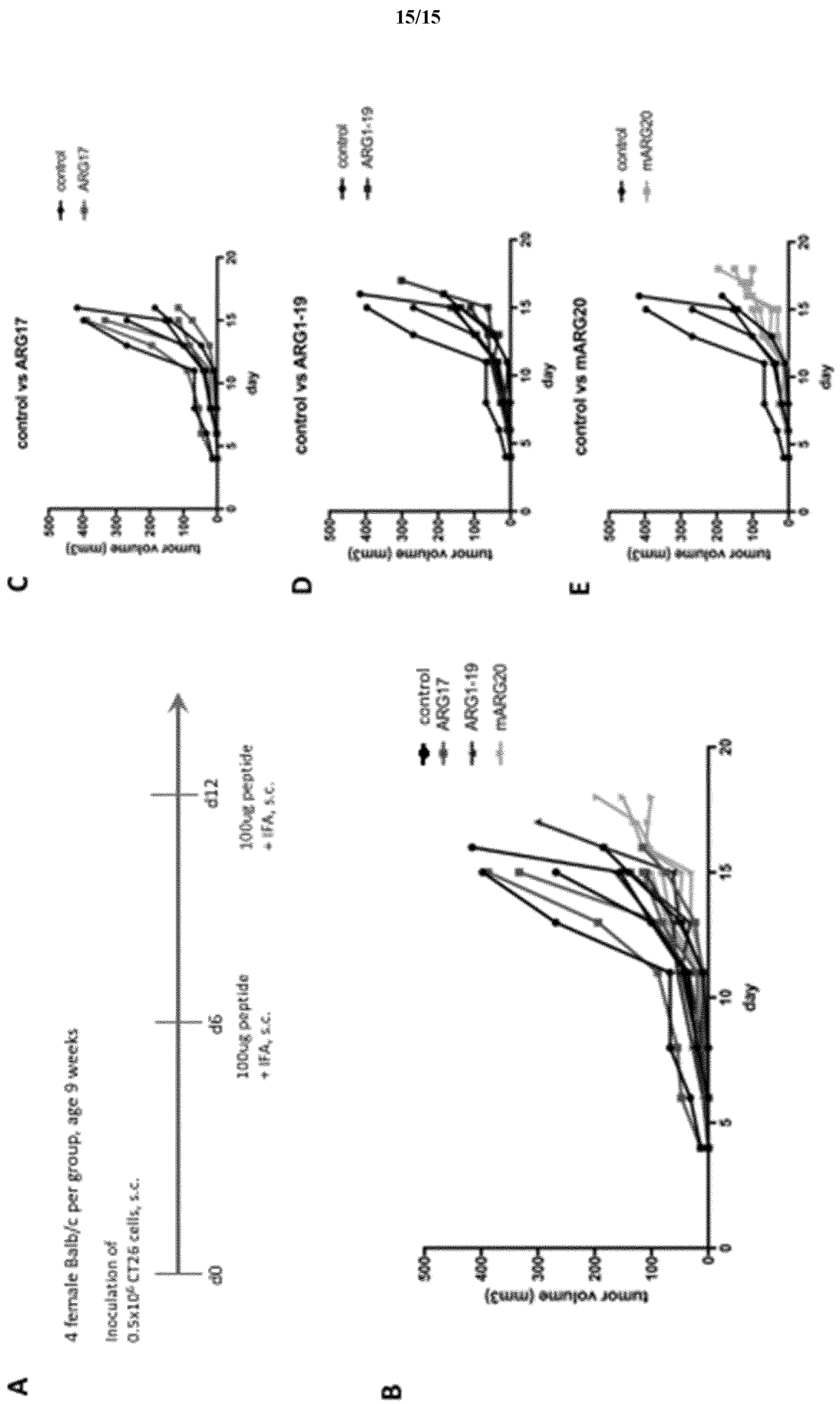

ARG17 vaccination Balb/c
control
mARG17 vaccinated
IFNγ spots /9*10E5 cells
ARG17
stimulus
no peptide
ARG17
#2
#7
ARG17 vaccinated
ARG1-19 vaccination Balb/c
control
ARG1-19 vaccinated
IFNγ spots /9*10E5 cells
ARG1-19
mARG20
stimulus
no peptide
ARG1-19
mARG20
#9
#11
ARG1-19 vaccinated
mARG20 vaccination Balb/c
control
mARG20 vaccinated
IFNγ spots /9*10E5 cells
mARG20
stimulus
no peptide
mARG20
#12
#16
mARG20 vaccinated

Figure 16


A
4 female Balb/c per group, age 9 weeks
Inoculation of
0.5x10^6 CT26 cells, s.c.
d0
d6
100ug peptide
+ IFA, s.c.
d12
100ug peptide
+ IFA, s.c.
B
control
ARG17
ARG1-19
mARG20
tumor volume (mm3)
day
C
control vs ARG17
control
ARG17
D
control vs ARG1-19
control
ARG1-19
E
control vs mARG20
control
mARG20