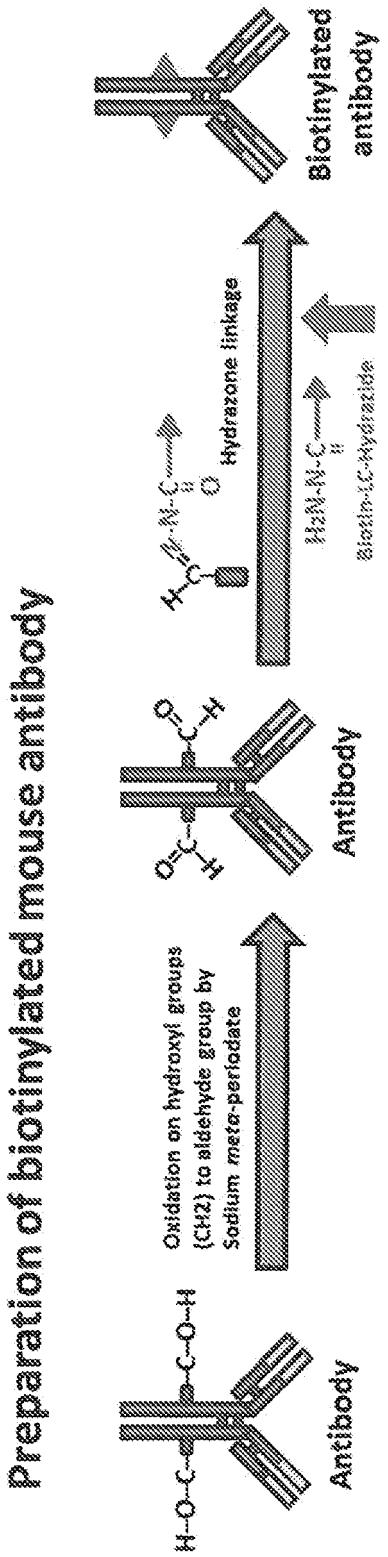

Preparation of biotinylated mouse antibody
Antibody
Oxidation on hydroxyl groups (CH2) to aldehyde group by Sodium meta-periodate
Antibody
Hydrazone linkage
Biotin-LC-Hydrazide
Biotinylated antibody

Fig. 1A

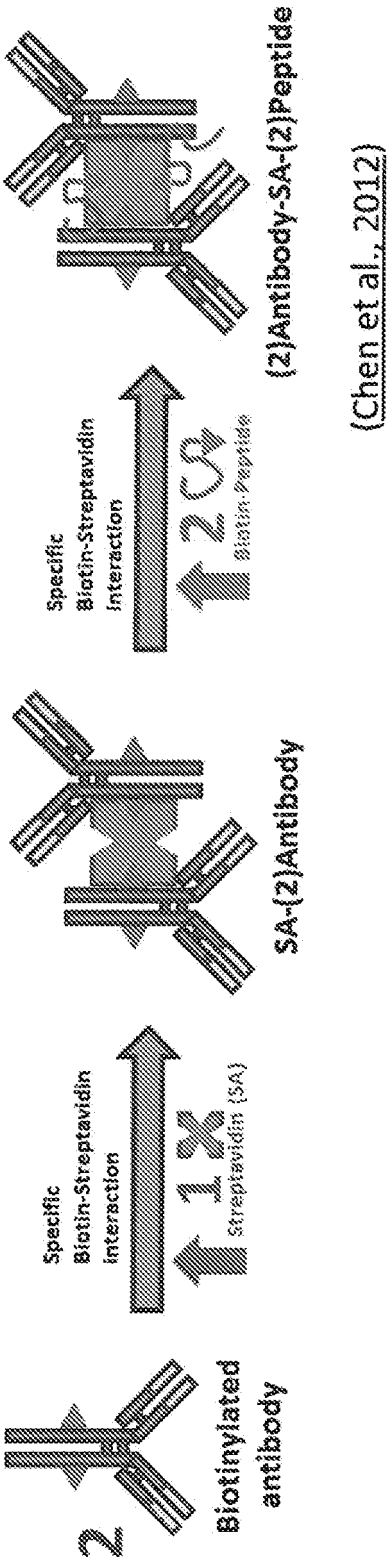

Preparation of (2)Antibody-SA-(2)Peptide complex
2
Biotinylated antibody
Specific Biotin-Streptavidin interaction
1X
Streptavidin (SA)
SA-(2)Antibody
Specific Biotin-Streptavidin interaction
2 CA
Biotin-Peptide
(2)Antibody-SA-(2)Peptide
(Chen et al., 2012)

Fig. 1B

Fig. 2A

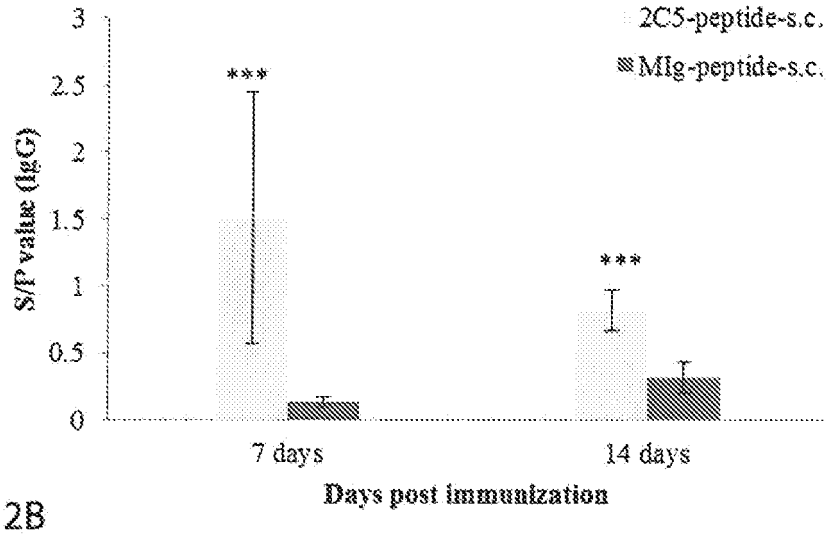

3
2.5
2
1.5
1
0.5
0
S/P value (IgG)
***
***
2C5-peptide-s.c.
MIg-peptide-s.c.
7 days
14 days
Days post immunization

Fig. 2B

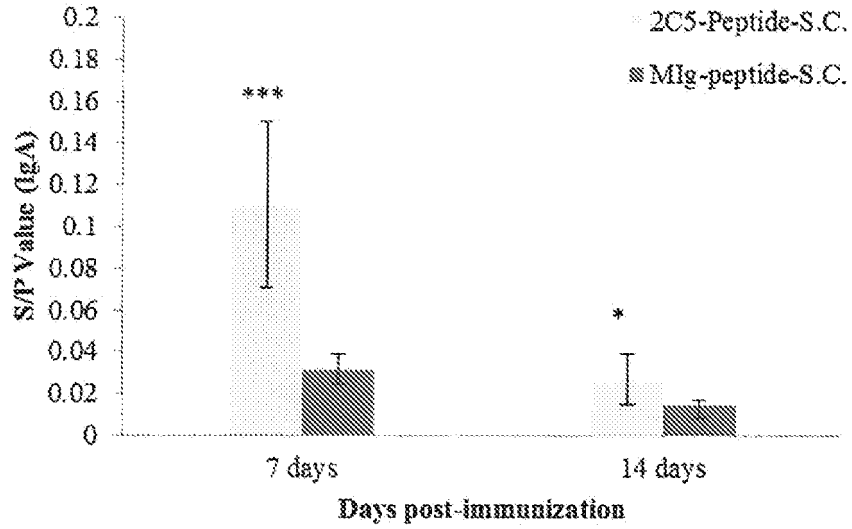

0.2
0.18
0.16
0.14
0.12
0.1
0.08
0.06
0.04
0.02
0
S/P Value (IgA)
***
*
2C5-Peptide-S.C.
MIg-peptide-S.C.
7 days
14 days
Days post-immunization

Fig. 3A

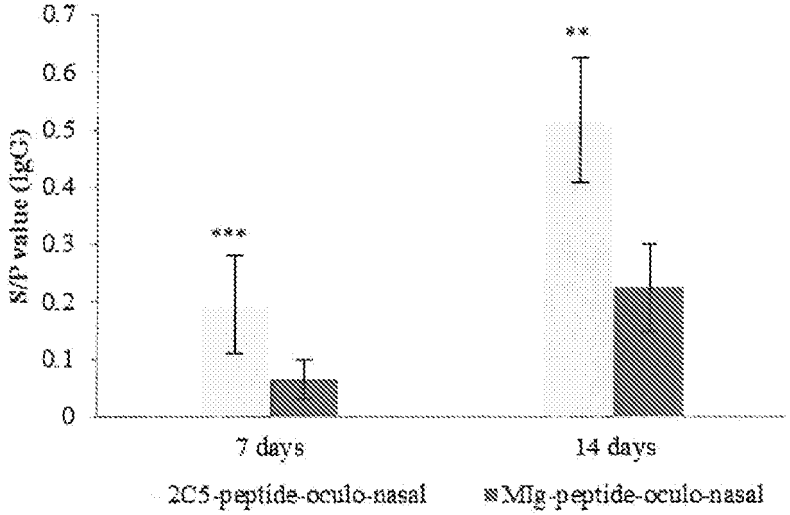


Fig. 3B

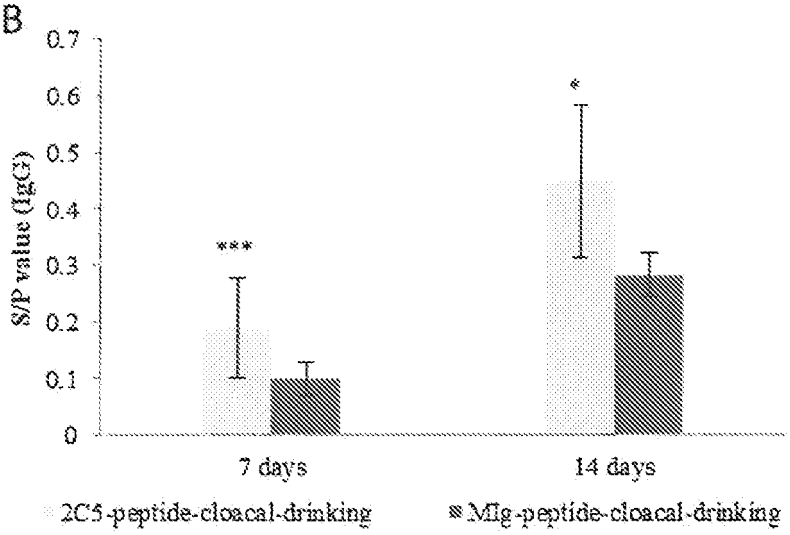


Fig. 3C

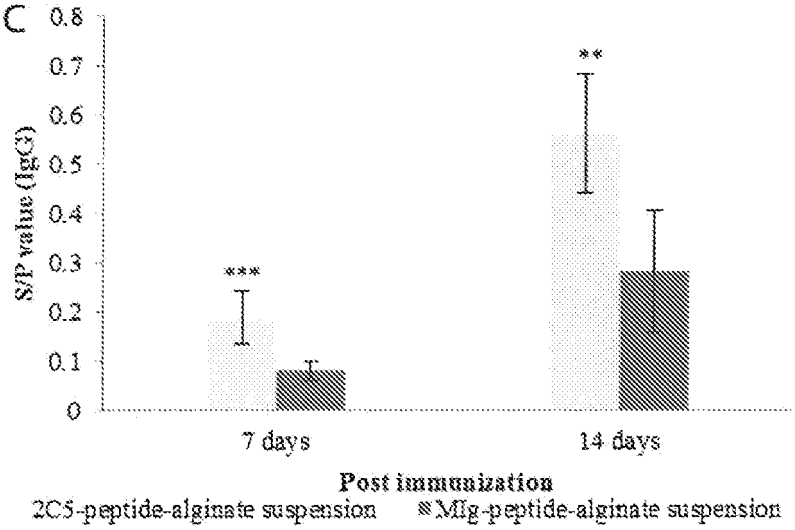


Fig. 4A

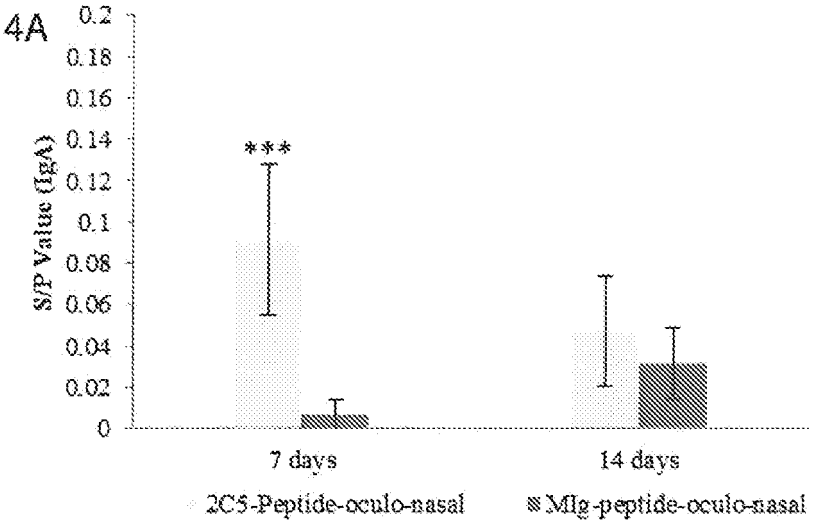


Fig. 4B

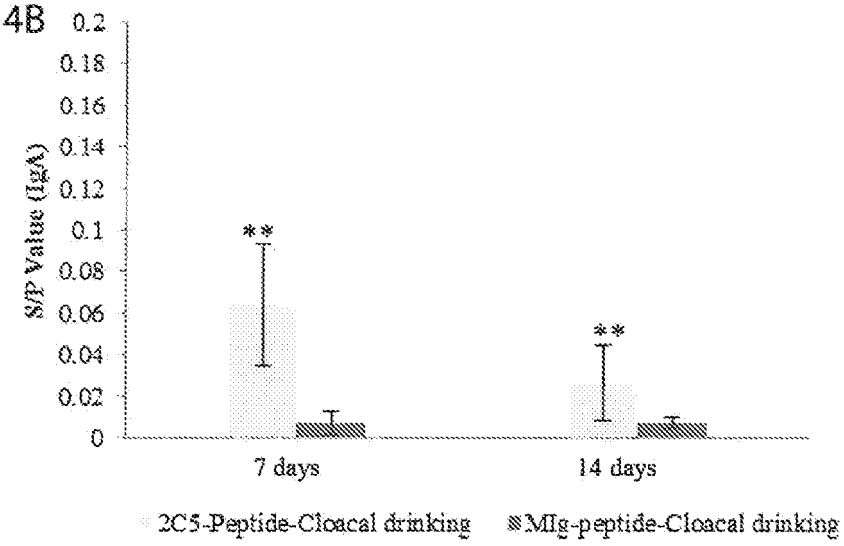


Fig. 4C

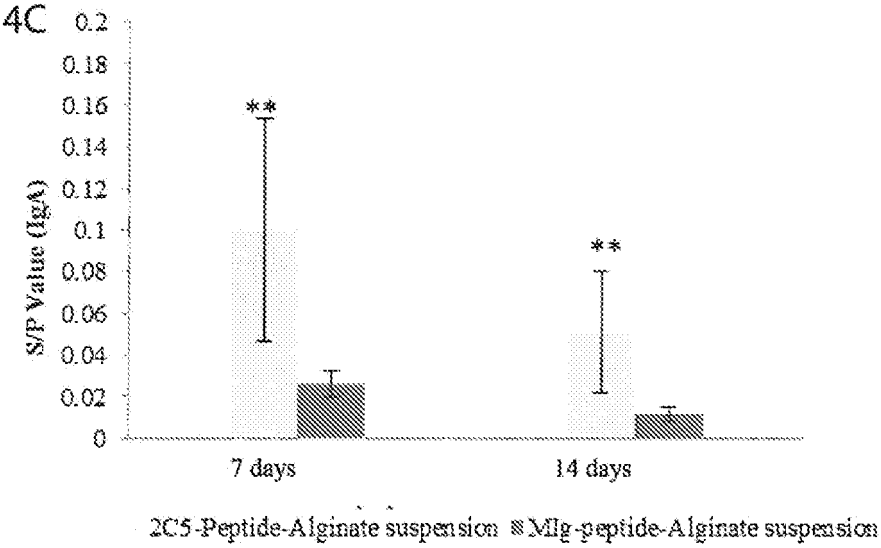


Fig. 5A

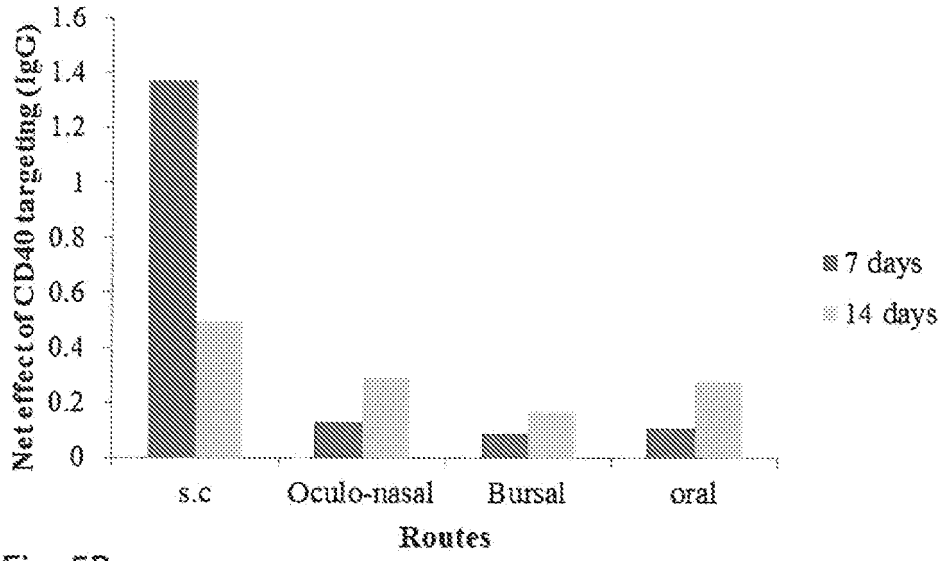

Net effect of CD40 targeting (IgG)
1.6
1.4
1.2
1
0.8
0.6
0.4
0.2
0
s.c
Oculo-nasal
Bursal
oral
Routes
7 days
14 days

Fig. 5B

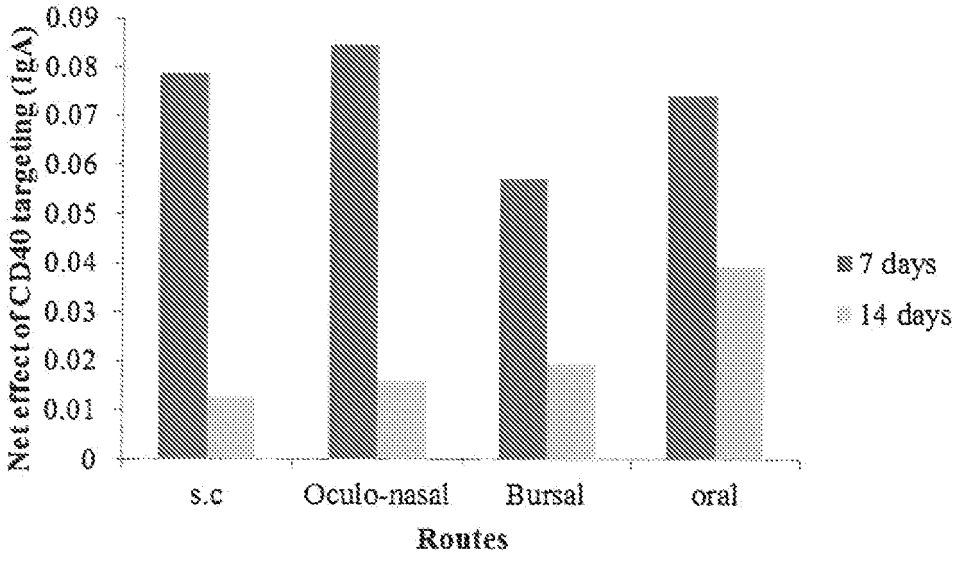

Net effect of CD40 targeting (IgA)
0.09
0.08
0.07
0.06
0.05
0.04
0.03
0.02
0.01
0
s.c
Oculo-nasal
Bursal
oral
Routes
7 days
14 days

Fig. 6

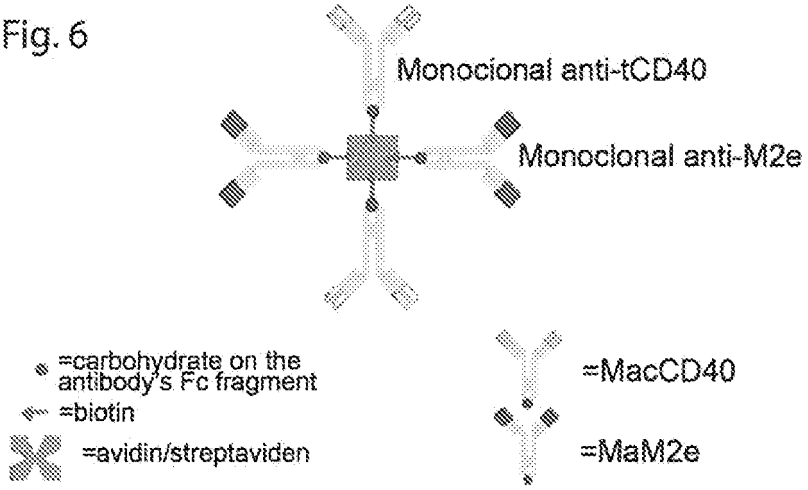


Fig. 7

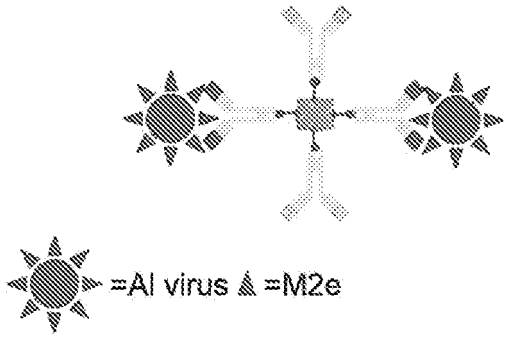


Fig. 8

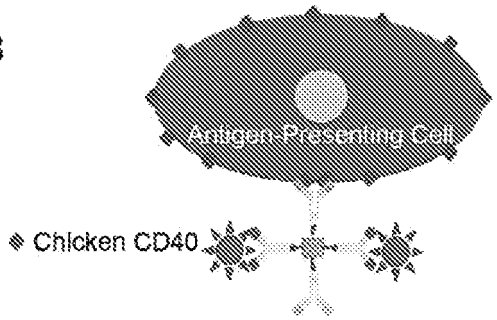


Fig. 9

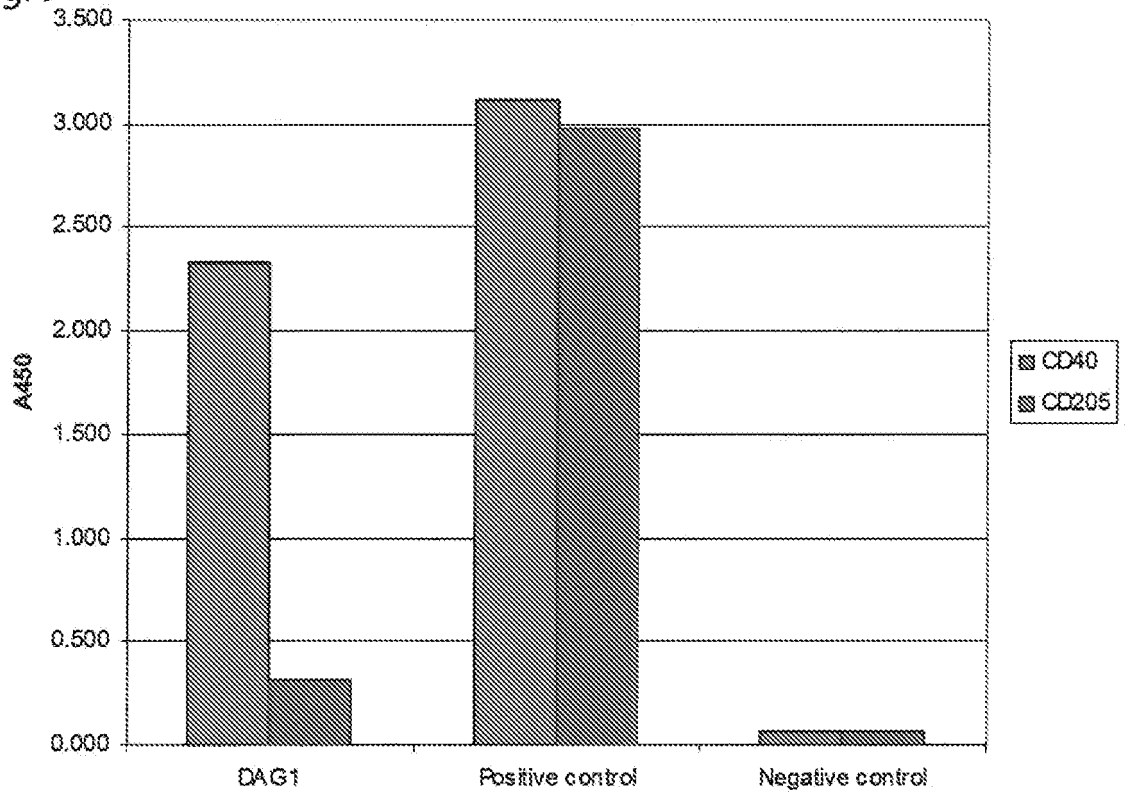

3.500
3.000
2.500
2.000
1.500
1.000
0.500
0.000
A450
CD40
CD205
DAG1
Positive control
Negative control

Fig. 10

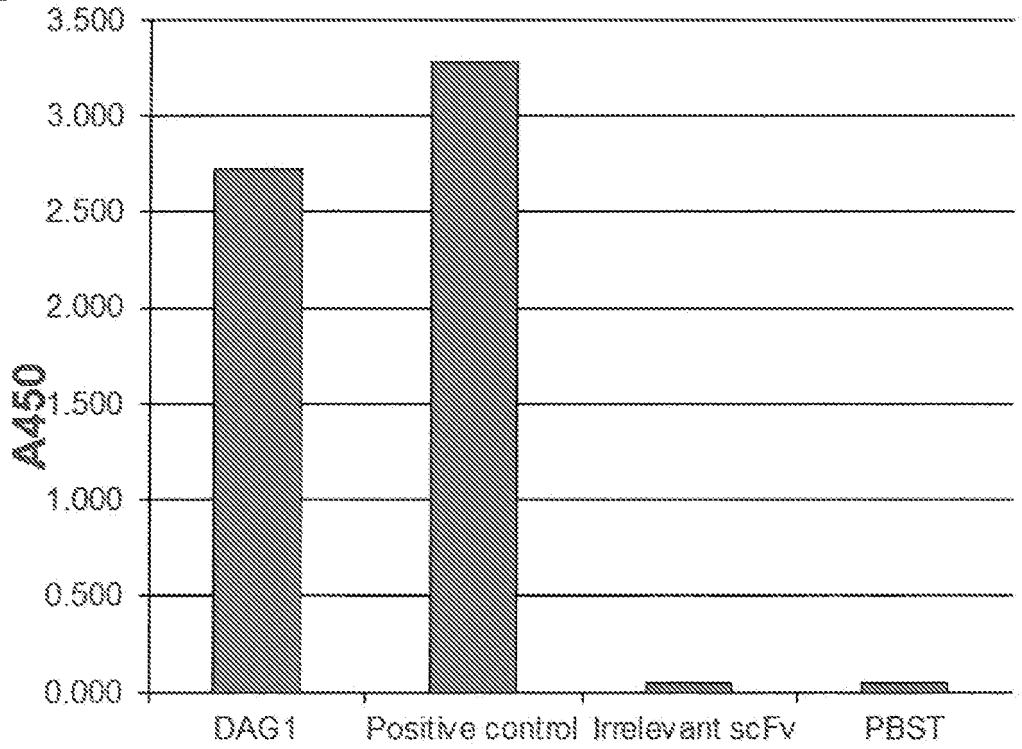

3.500
3.000
2.500
2.000
1.500
1.000
0.500
0.000
A450
DAG1
Positive control
Irrelevant scFv
PBST

Fig. 11

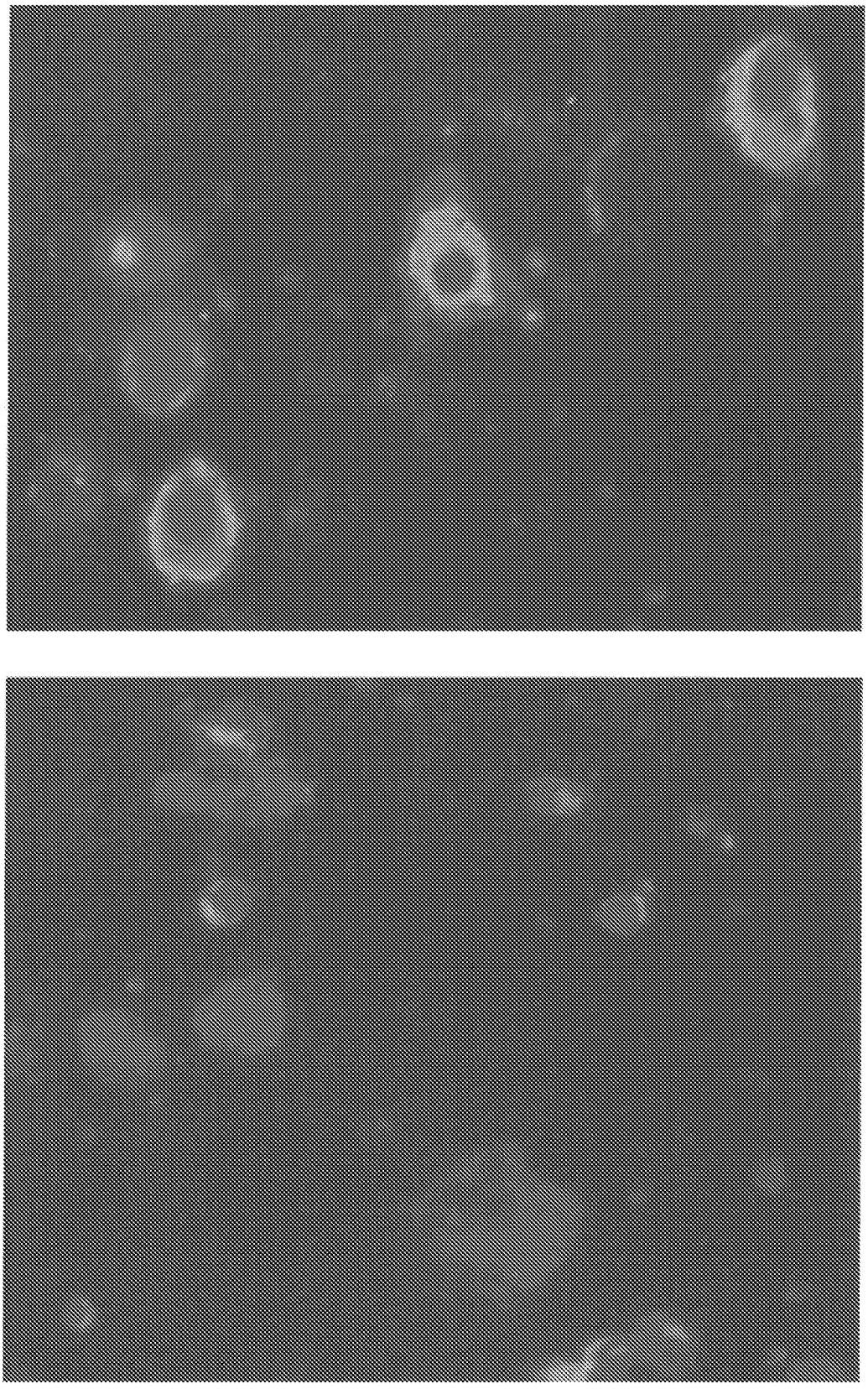


Fig. 12

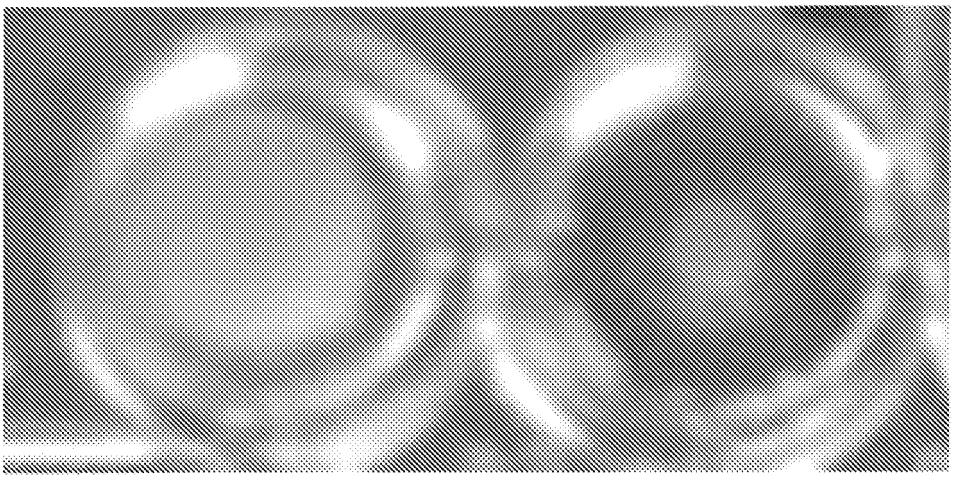


Fig. 13

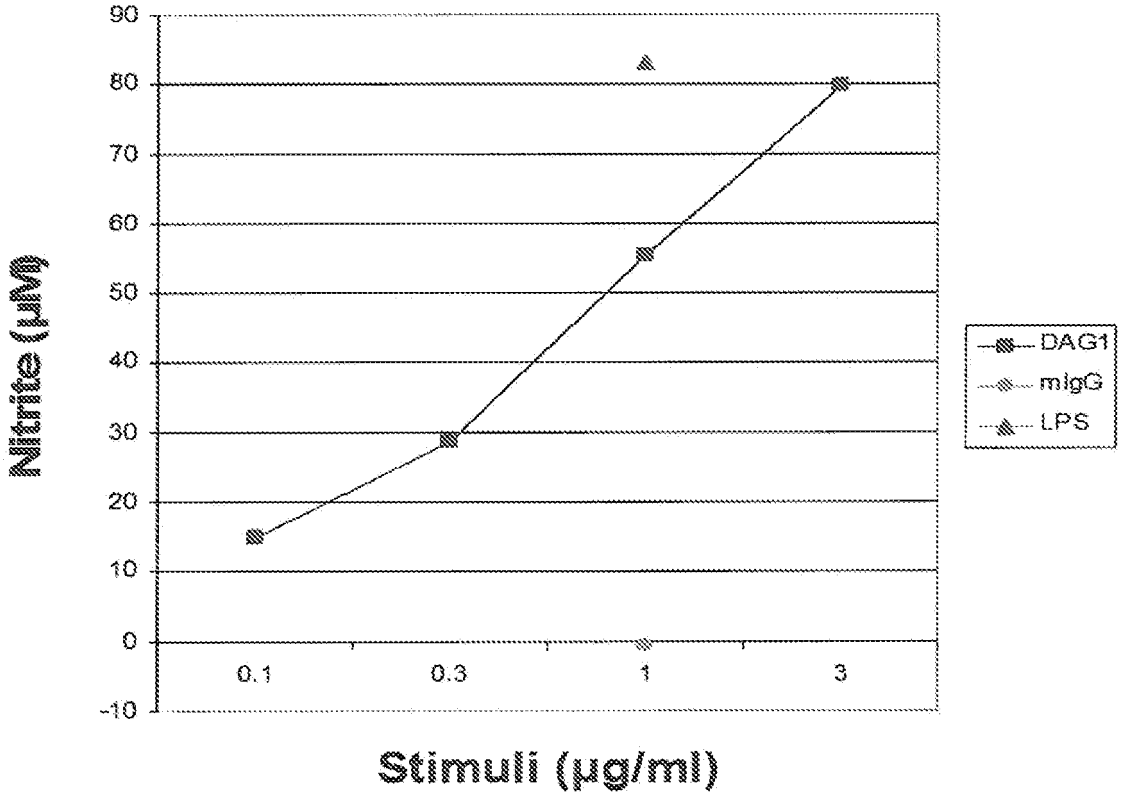

90
80
70
60
50
40
30
20
10
0
-10
Nitrite (μM)
0.1
0.3
1
3
Stimuli (μg/ml)
DAG1
mIgG
LPS

Fig. 14

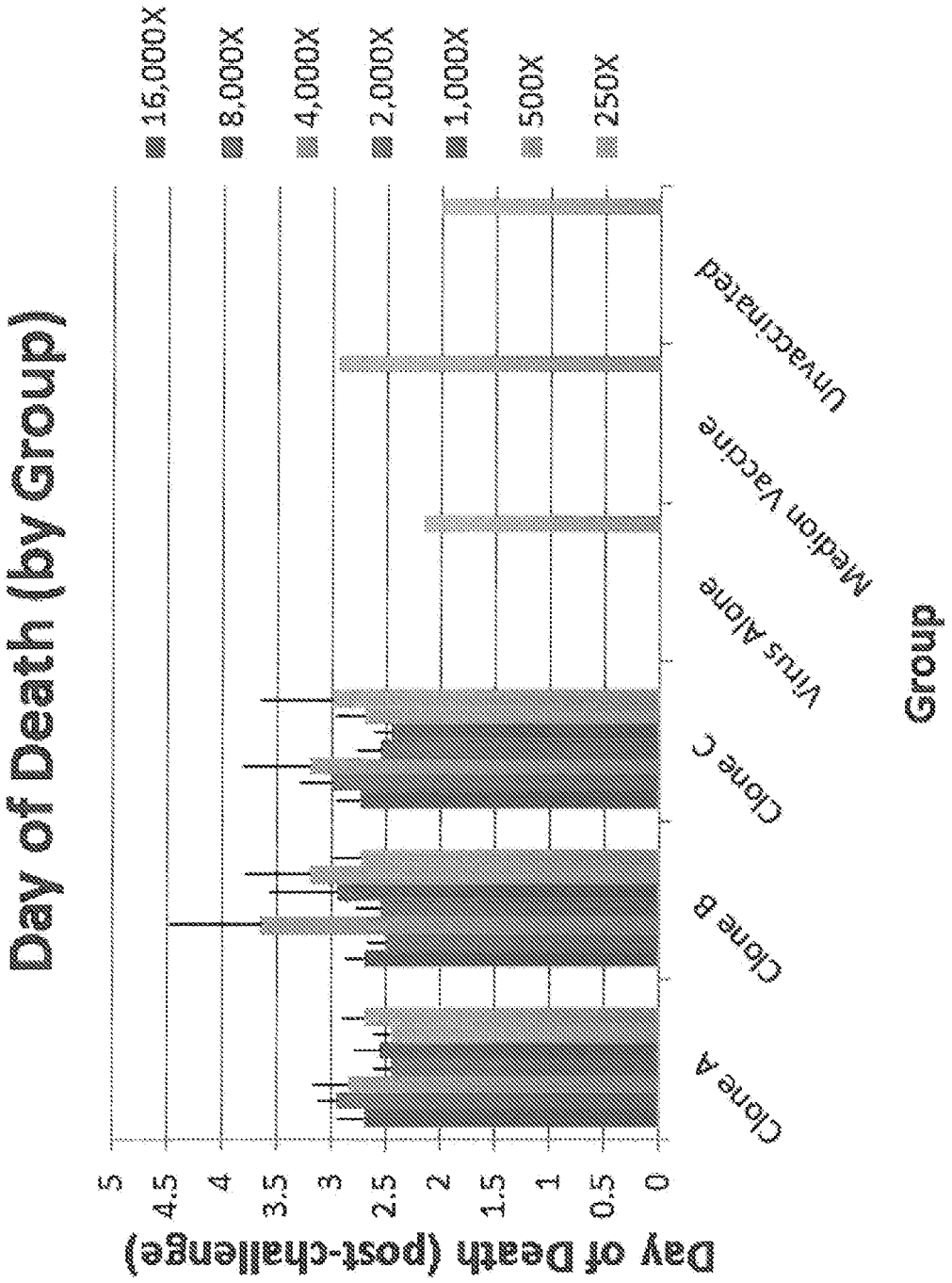

Day of Death (by Group)
16,000X
8,000X
4,000X
2,000X
1,000X
500X
250X
Clone A
Clone B
Clone C
Virus Alone
Medion Vaccine
Unvaccinated
Group
Day of Death (post-challenge)
0
0.5
1
1.5
2
2.5
3
3.5
4
4.5
5

Fig. 15

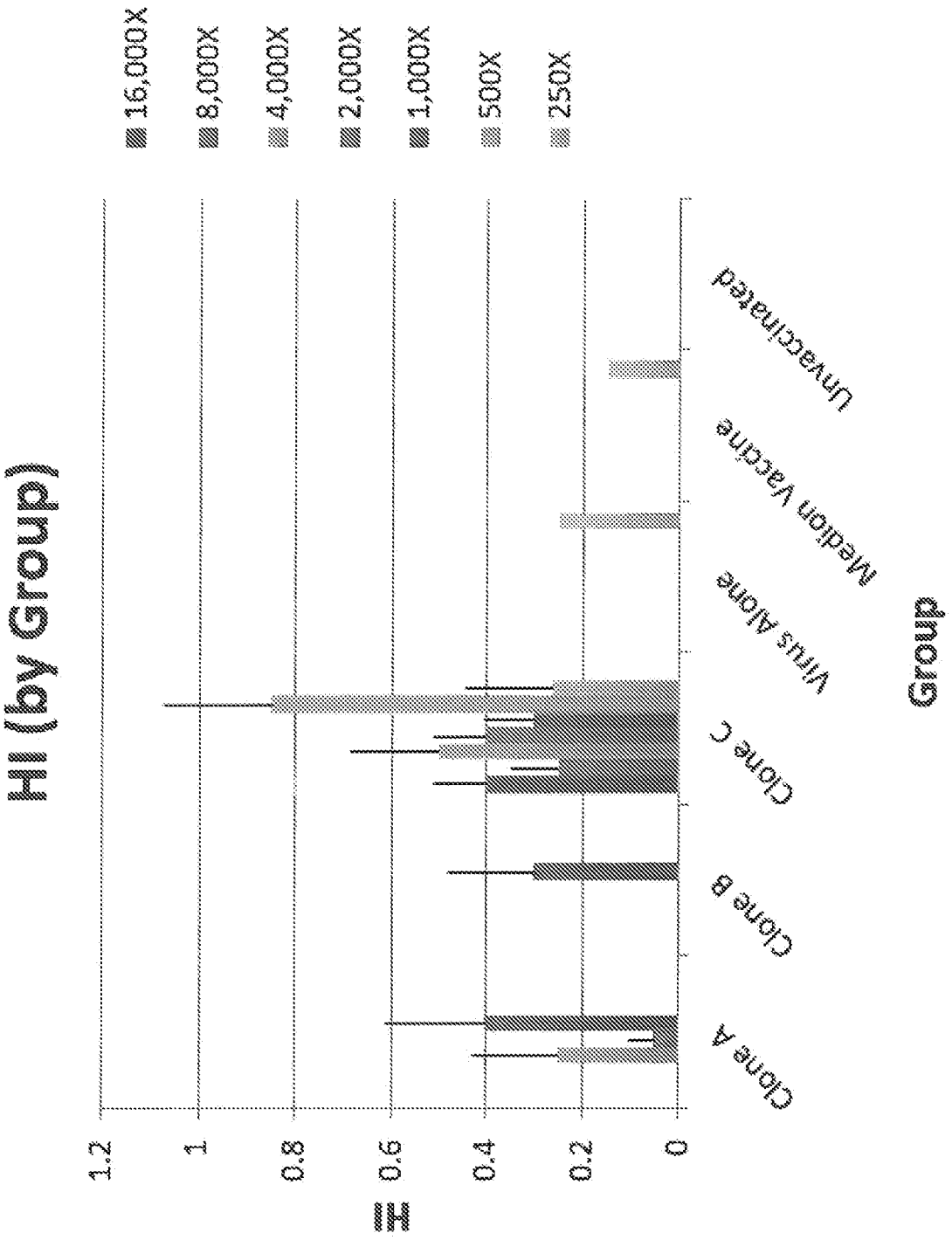

16,000X
8,000X
4,000X
2,000X
1,000X
500X
250X
HI (by Group)
HI
1.2
1
0.8
0.6
0.4
0.2
0
Clone A
Clone B
Clone C
Virus Alone
Medion Vaccine
Unvaccinated
Group

Fig. 16

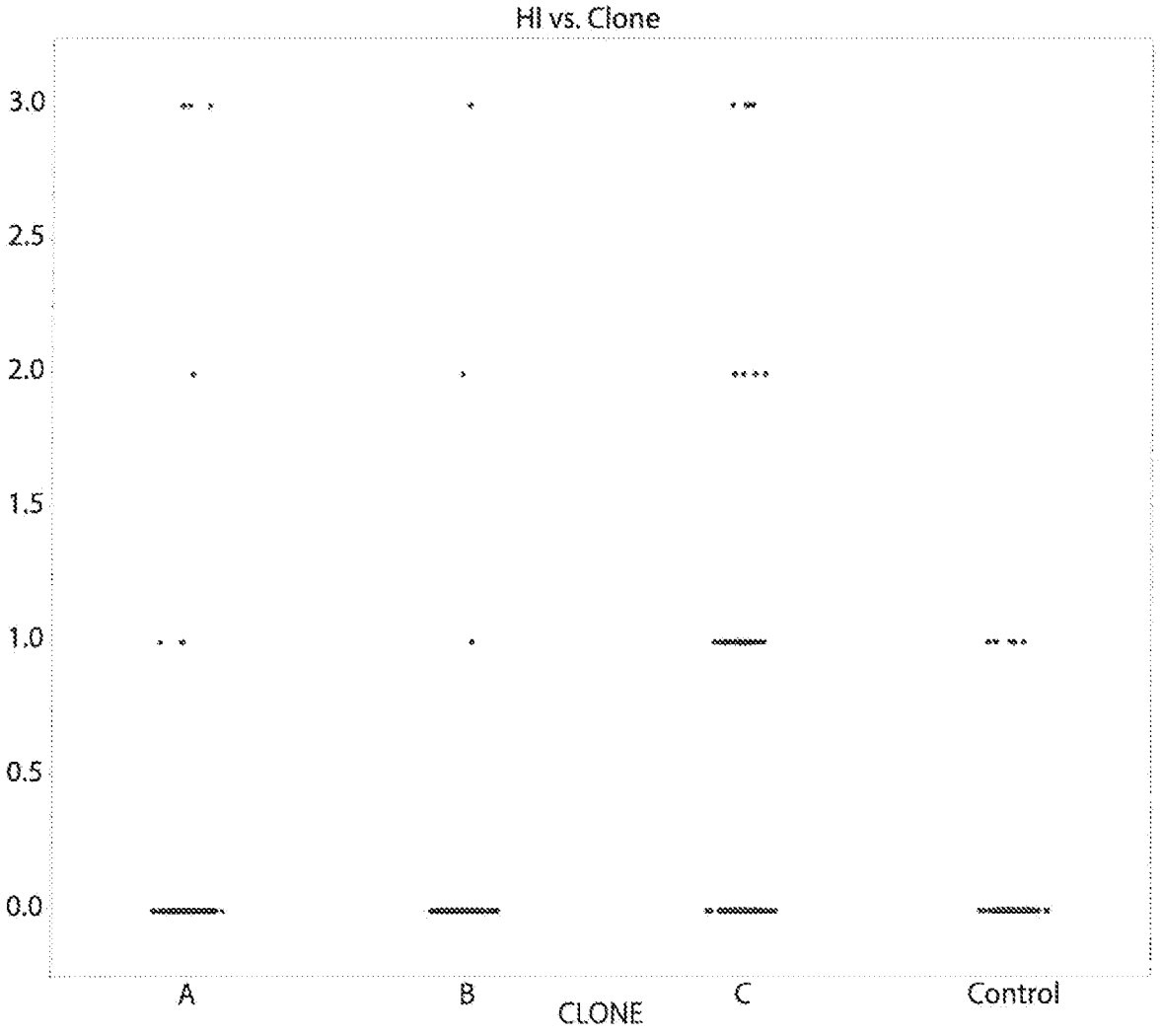


Fig. 17A

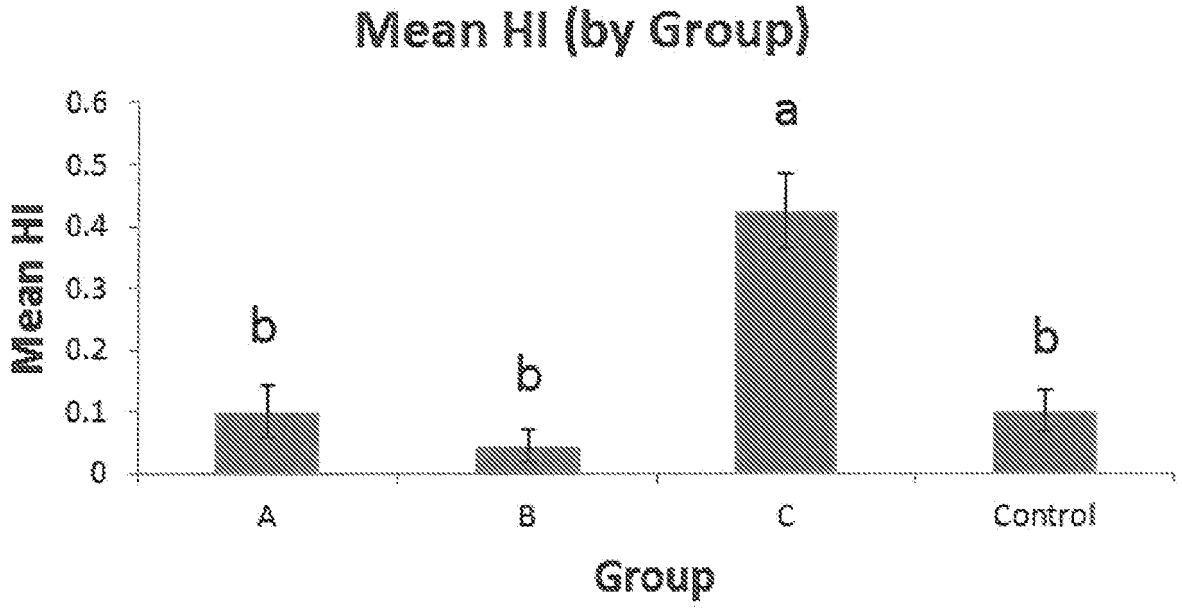


Fig. 17B

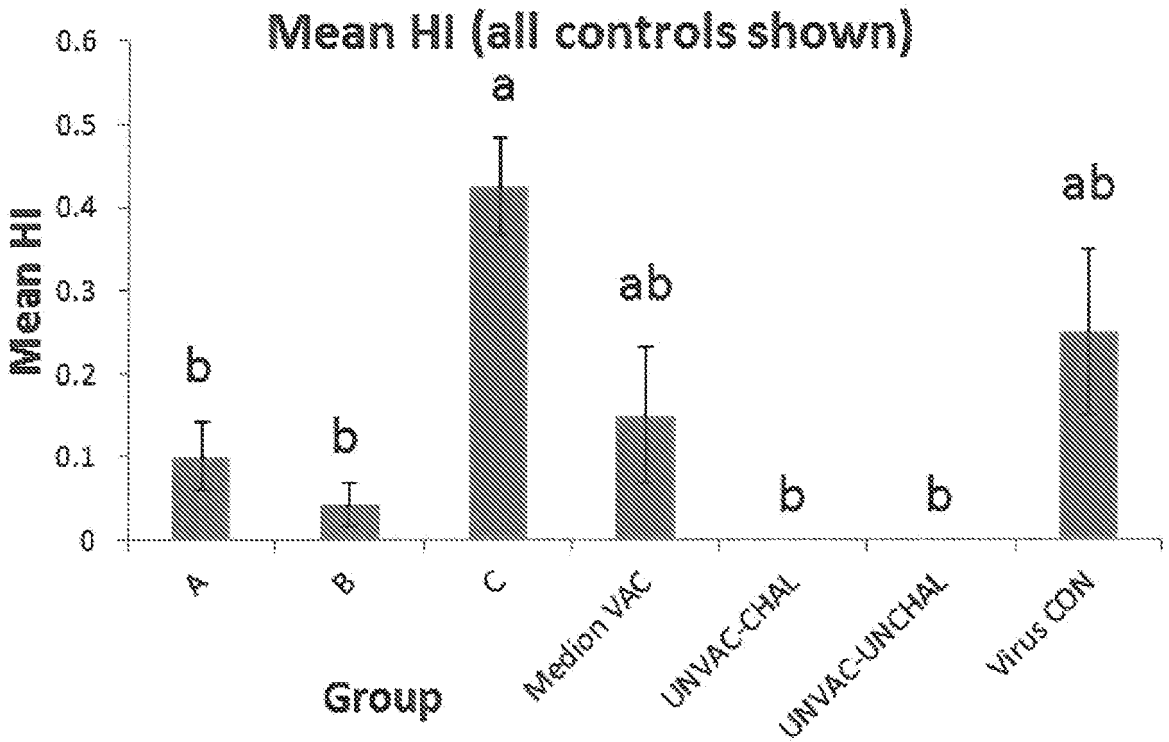
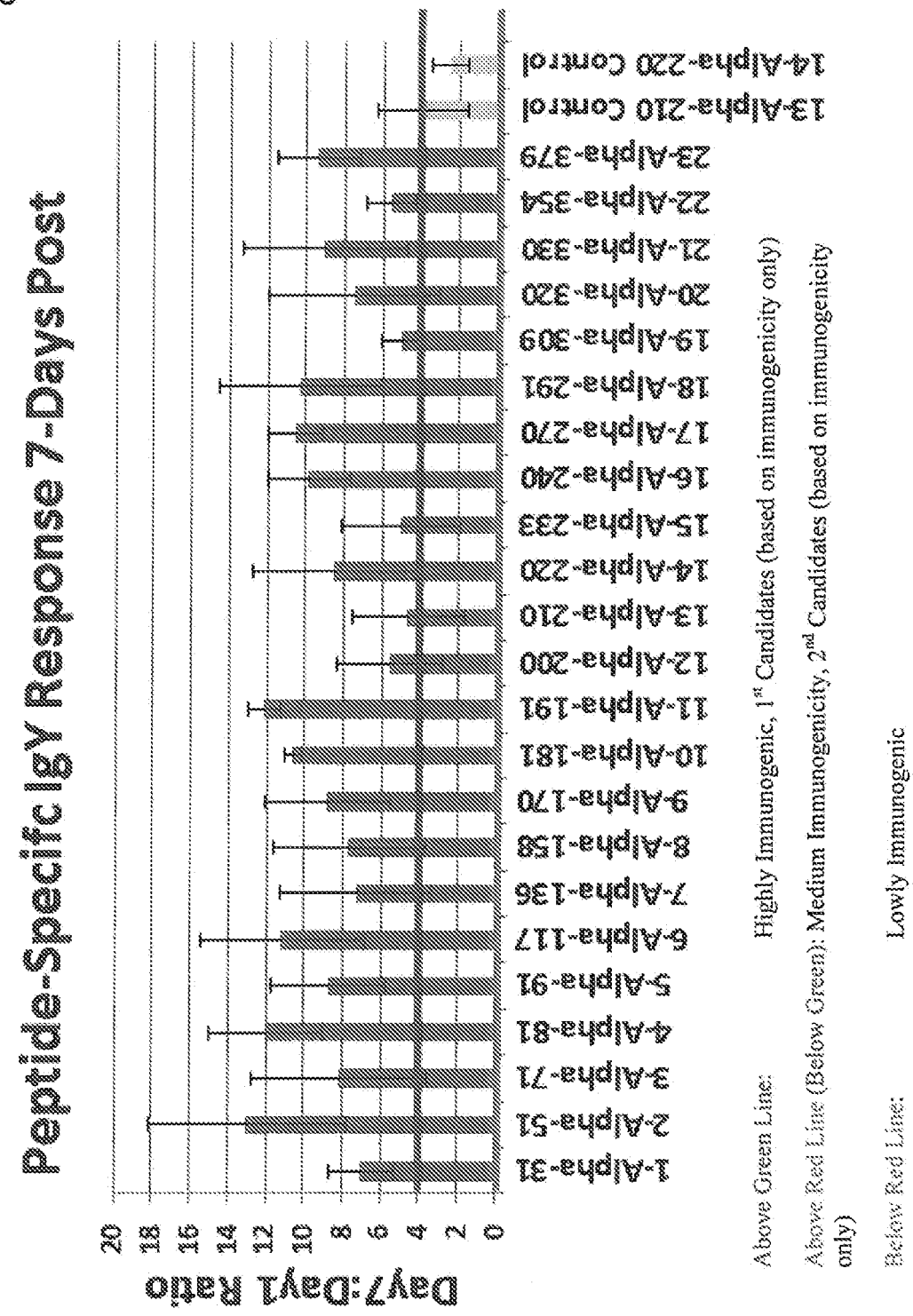


Fig. 18


Peptide-Specifc IgY Response 7-Days Post
Day7:Day1 Ratio
0
2
4
6
8
10
12
14
16
18
20
1-Alpha-31
2-Alpha-51
3-Alpha-71
4-Alpha-81
5-Alpha-91
6-Alpha-117
7-Alpha-136
8-Alpha-158
9-Alpha-170
10-Alpha-181
11-Alpha-191
12-Alpha-200
13-Alpha-210
14-Alpha-220
15-Alpha-233
16-Alpha-240
17-Alpha-270
18-Alpha-291
19-Alpha-309
20-Alpha-320
21-Alpha-330
22-Alpha-354
23-Alpha-379
13-Alpha-210 Control
14-Alpha-220 Control
Above Green Line: Highly Immunogenic, 1st Candidates (based on immunogenicity only)
Above Red Line (Below Green): Medium Immunogenicity, 2nd Candidates (based on immunogenicity only)
Below Red Line: Lowly Immunogenic