Fig. 1

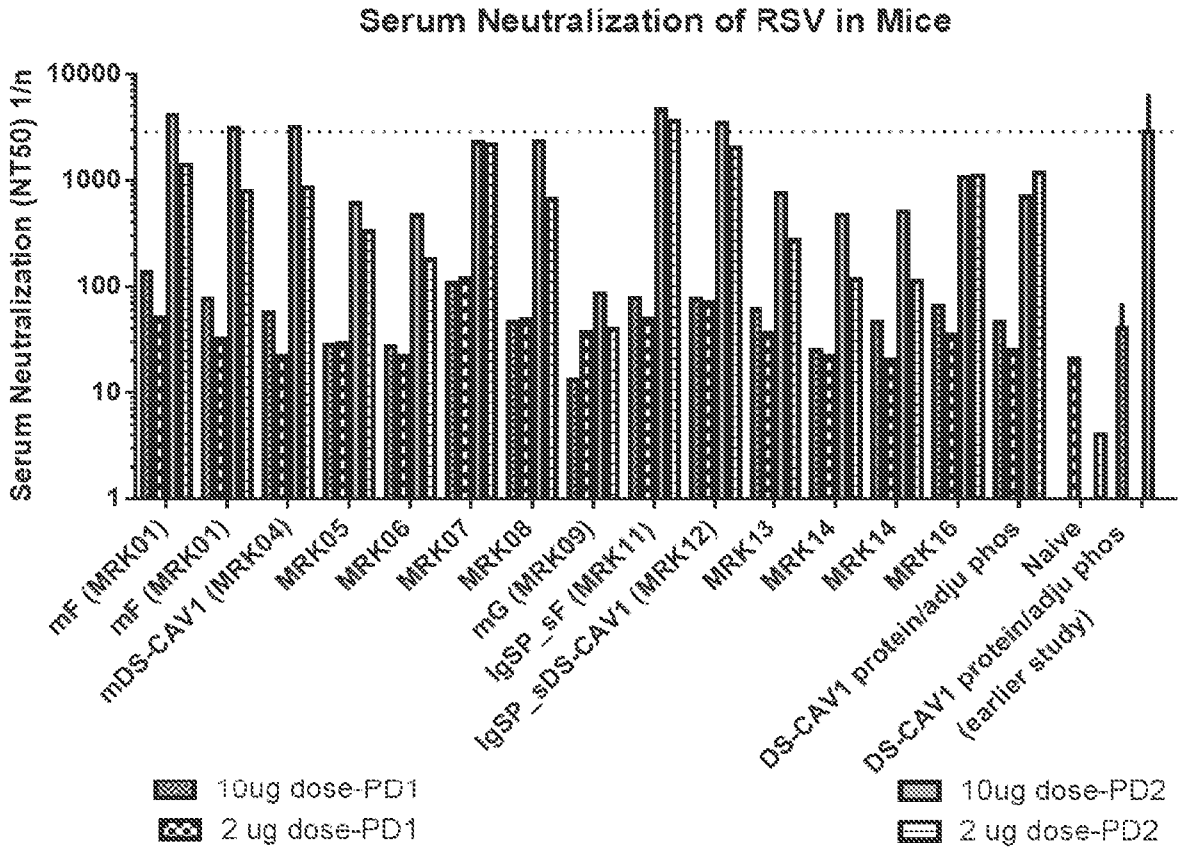

Serum Neutralization of RSV in Mice
Serum Neutralization (NT50) 1/n
10000
1000
100
10
1
mF (MRK01)
mF (MRK01)
mDS-CAV1 (MRK04)
MRK05
MRK06
MRK07
MRK08
mG (MRK09)
IgSP_sF (MRK11)
IgSP_sDS-CAV1 (MRK12)
MRK13
MRK14
MRK14
MRK16
DS-CAV1 protein/adju phos
Naive
DS-CAV1 protein/adju phos (earlier study)
10ug dose-PD1
2 ug dose-PD1
10ug dose-PD2
2 ug dose-PD2

Fig. 2

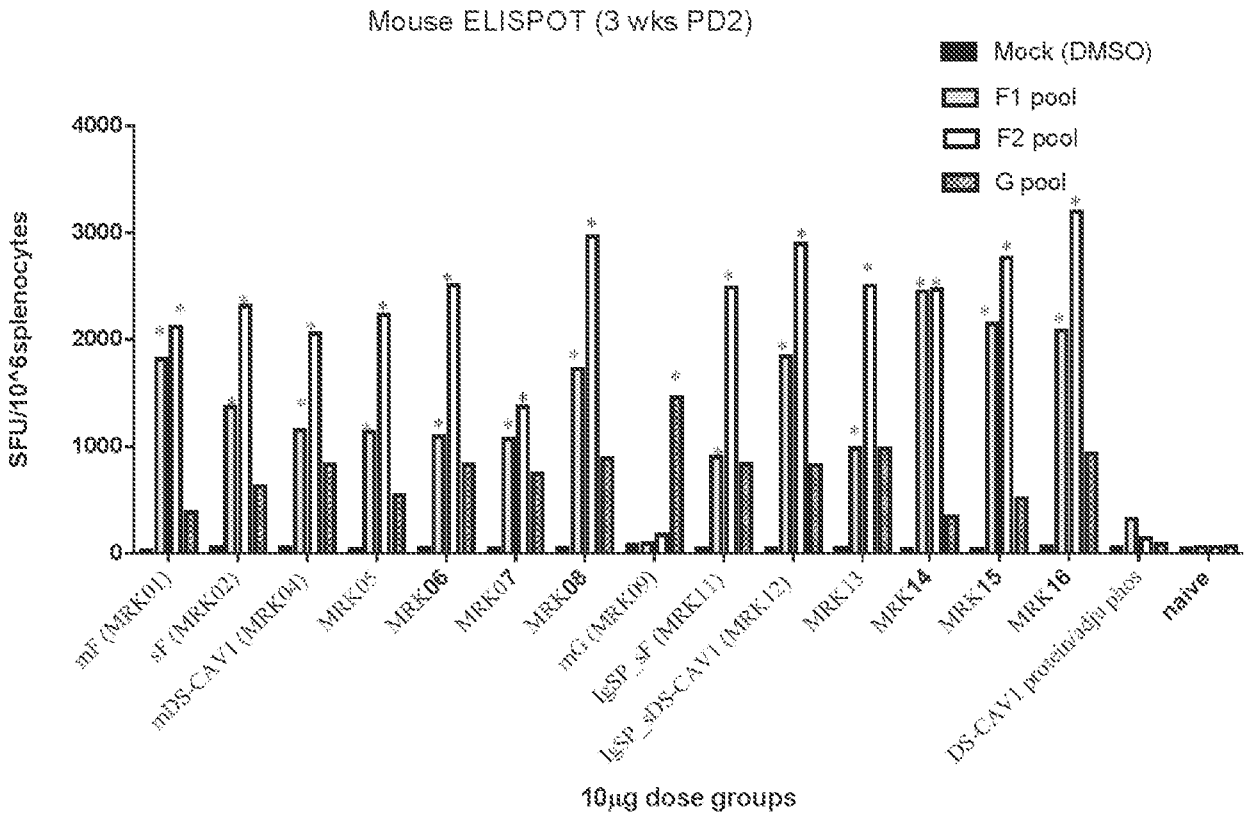

Mouse ELISPOT (3 wks PD2)
Mock (DMSO)
F1 pool
F2 pool
G pool
SFU/10^6splenocytes
4000
3000
2000
1000
0
mF (MRK01)
sF (MRK02)
mDS-CAV1 (MRK04)
MRK05
MRK06
MRK07
MRK08
mG (MRK09)
IgSP_sF (MRK11)
IgSP_sDS-CAV1 (MRK12)
MRK13
MRK14
MRK15
MRK16
DS-CAV1 peptide/adju pass
naive
10μg dose groups

Fig. 3A

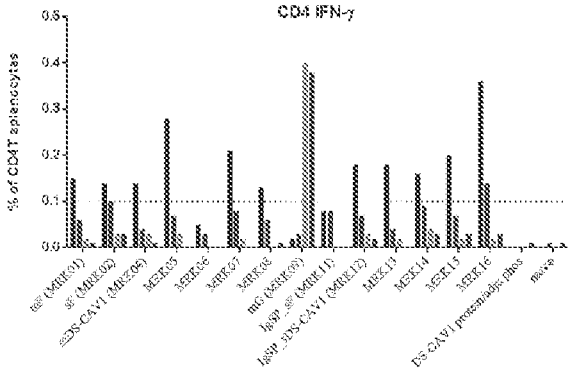
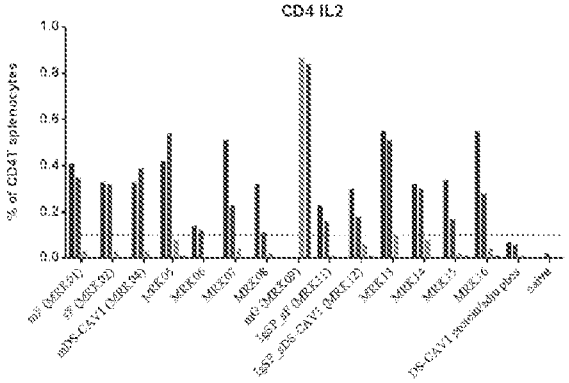
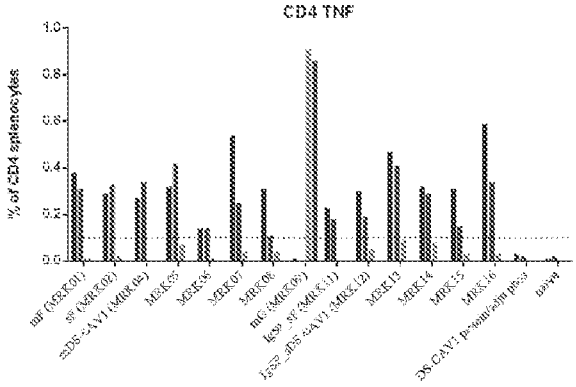


Fig. 3B





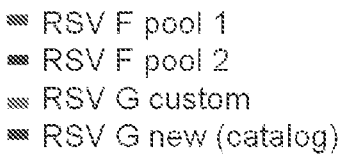


Fig. 3C

Fig. 4A

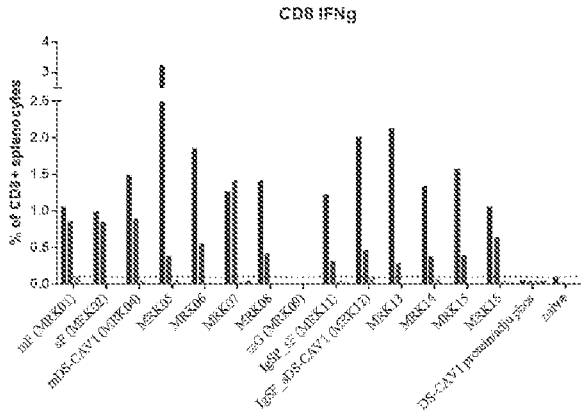
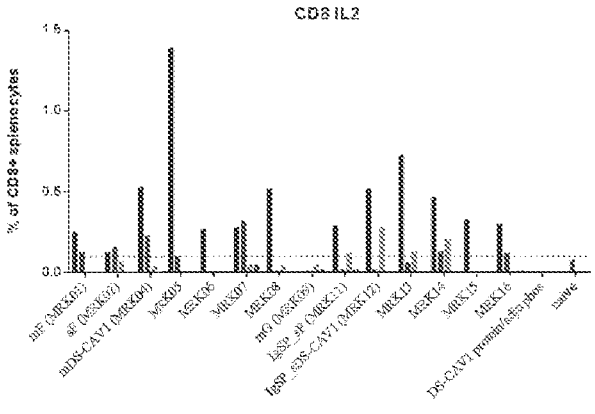
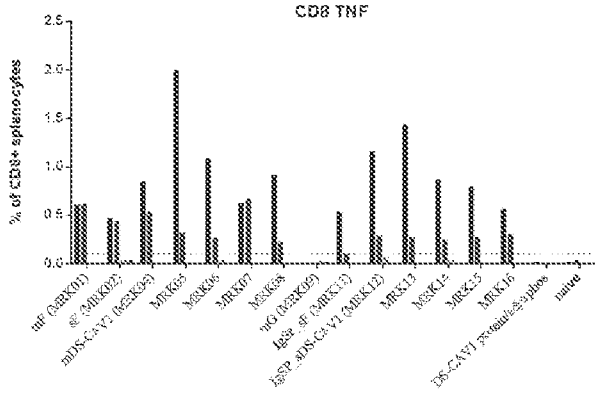


Fig. 4B





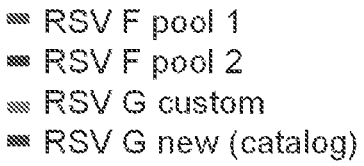


Fig. 4C

Fig. 5

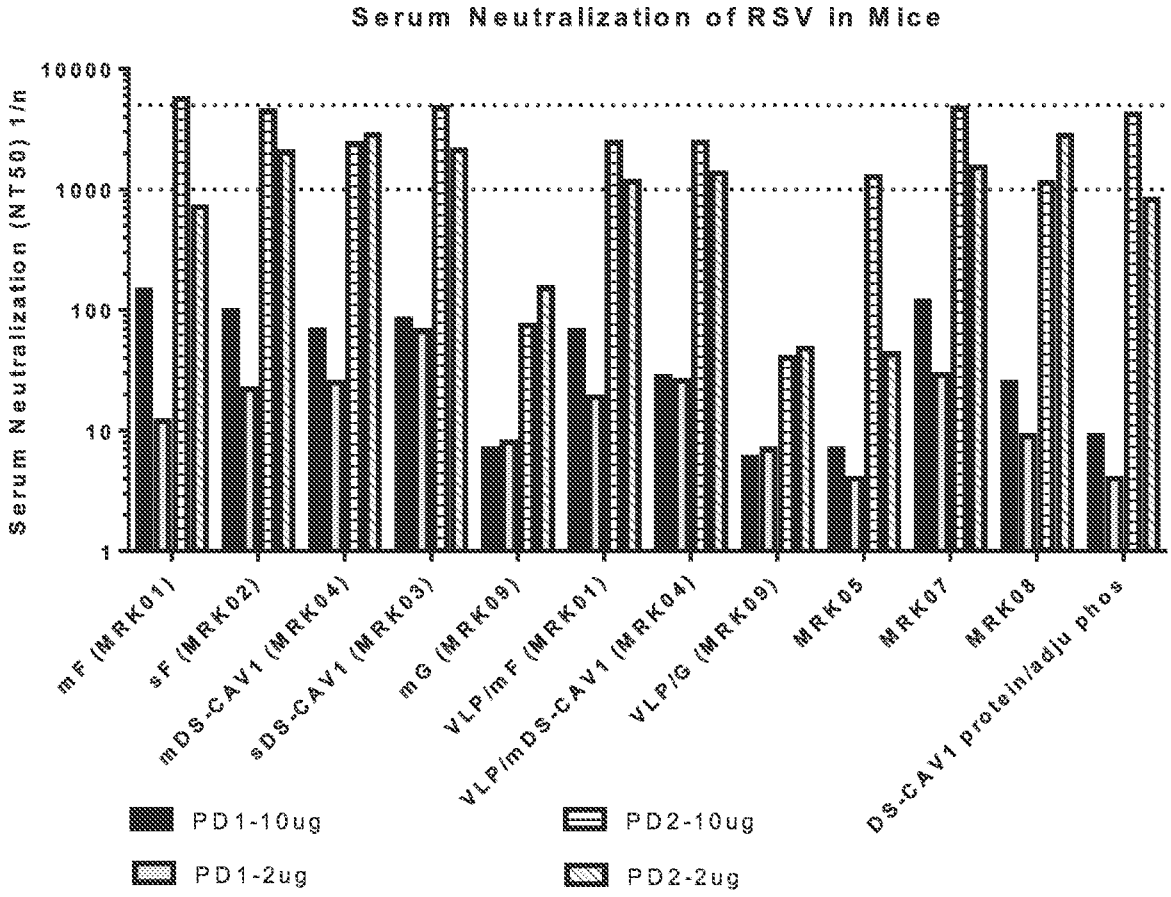

Serum Neutralization of RSV in Mice
Serum Neutralization (NT50) 1/n
10000
1000
100
10
1
mF (MRK01)
sF (MRK02)
mDS-CAV1 (MRK04)
sDS-CAV1 (MRK03)
mG (MRK09)
VLP/mF (MRK01)
VLP/mDS-CAV1 (MRK04)
VLP/G (MRK09)
MRK05
MRK07
MRK08
DS-CAV1 protein/adju phos
PD1-10ug
PD1-2ug
PD2-10ug
PD2-2ug

Fig. 6A

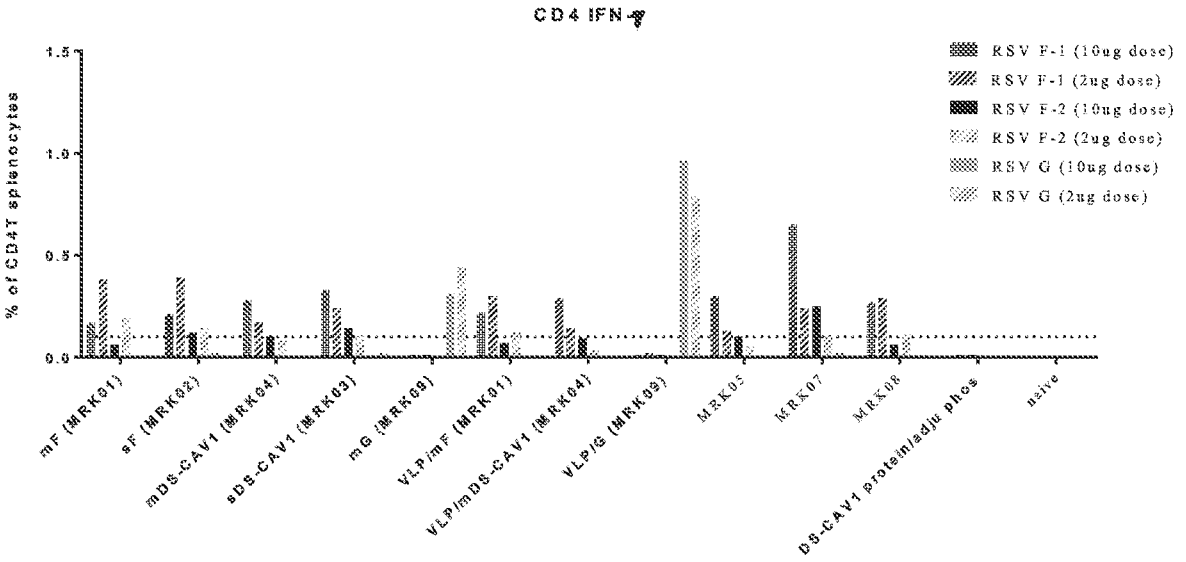

CD4 IFN-γ
% of CD4T splenocytes
1.5
1.0
0.5
0.0
RSV F-1 (10ug dose)
RSV F-1 (2ug dose)
RSV F-2 (10ug dose)
RSV F-2 (2ug dose)
RSV G (10ug dose)
RSV G (2ug dose)
mF (MRK01)
sF (MRK02)
mDS-CAV1 (MRK04)
sDS-CAV1 (MRK03)
mG (MRK09)
VLP/mF (MRK01)
VLP/mDS-CAV1 (MRK04)
VLP/G (MRK09)
MRK05
MRK07
MRK08
DS-CAV1 protein/adju phos
naive

Fig. 6B

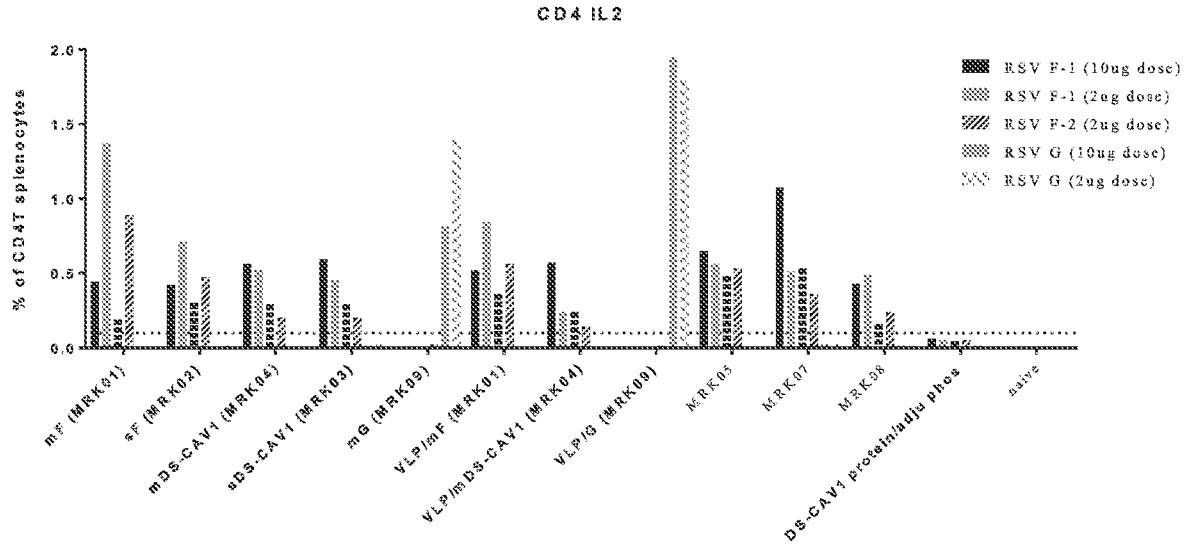

CD4 IL2
% of CD4T splenocytes
2.0
1.5
1.0
0.5
0.0
RSV F-1 (10ug dose)
RSV F-1 (2ug dose)
RSV F-2 (2ug dose)
RSV G (10ug dose)
RSV G (2ug dose)
mF (MRK01)
sF (MRK02)
mDS-CAV1 (MRK04)
sDS-CAV1 (MRK03)
mG (MRK09)
VLP/mF (MRK01)
VLP/mDS-CAV1 (MRK04)
VLP/G (MRK09)
MRK05
MRK07
MRK08
DS-CAV1 protein/adju phos
naive

Fig. 6C

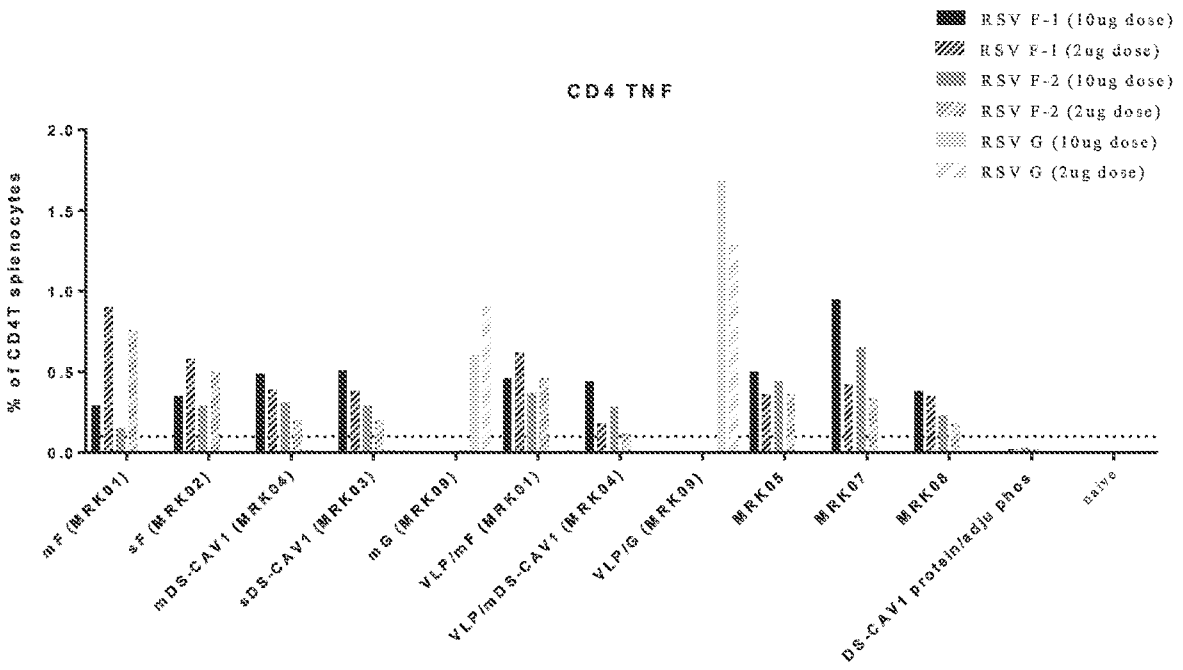

CD4 TNF
RSV F-1 (10ug dose)
RSV F-1 (2ug dose)
RSV F-2 (10ug dose)
RSV F-2 (2ug dose)
RSV G (10ug dose)
RSV G (2ug dose)
% of CD4T splenocytes
2.0
1.5
1.0
0.5
0.0
mF (MRK01)
sF (MRK02)
mDS-CAV1 (MRK04)
sDS-CAV1 (MRK03)
mG (MRK09)
VLP/mF (MRK01)
VLP/mDS-CAV1 (MRK04)
VLP/G (MRK09)
MRK05
MRK07
MRK08
DS-CAV1 protein/adju phos
naive

Fig. 7A

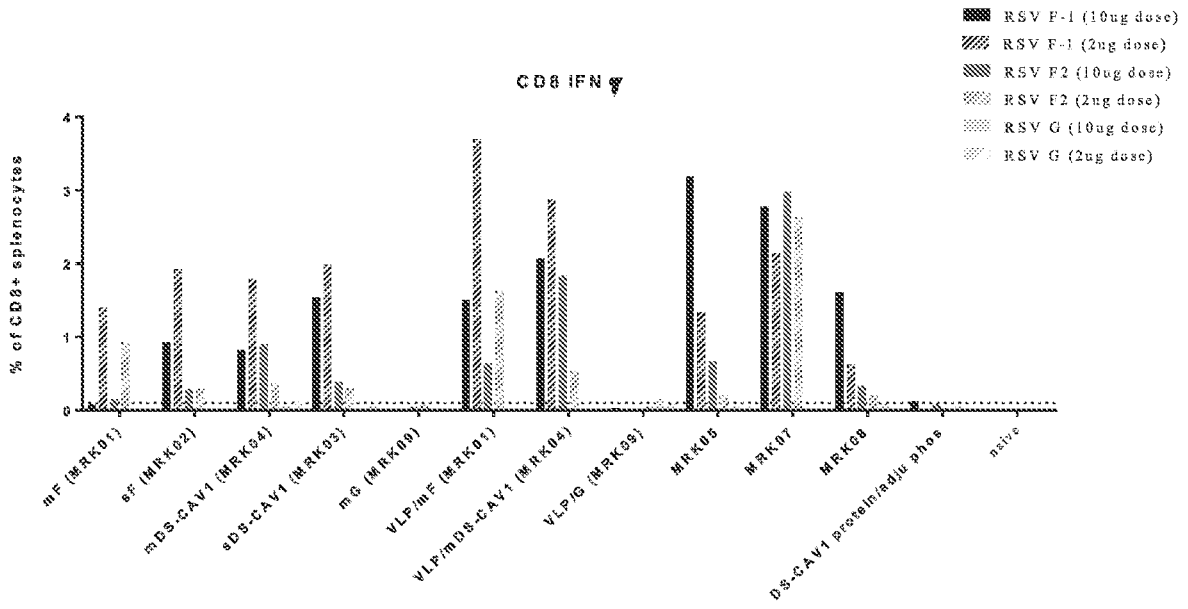

CD8 IFNγ
% of CD8+ splenocytes
RSV F-1 (10ug dose)
RSV F-1 (2ug dose)
RSV F2 (10ug dose)
RSV F2 (2ug dose)
RSV G (10ug dose)
RSV G (2ug dose)
mF (MRK01)
sF (MRK02)
mDS-CAV1 (MRK04)
sDS-CAV1 (MRK03)
mG (MRK09)
VLP/mF (MRK01)
VLP/mDS-CAV1 (MRK04)
VLP/G (MRK09)
MRK05
MRK07
MRK08
DS-CAV1 protein/adju phos
naive

Fig. 7B

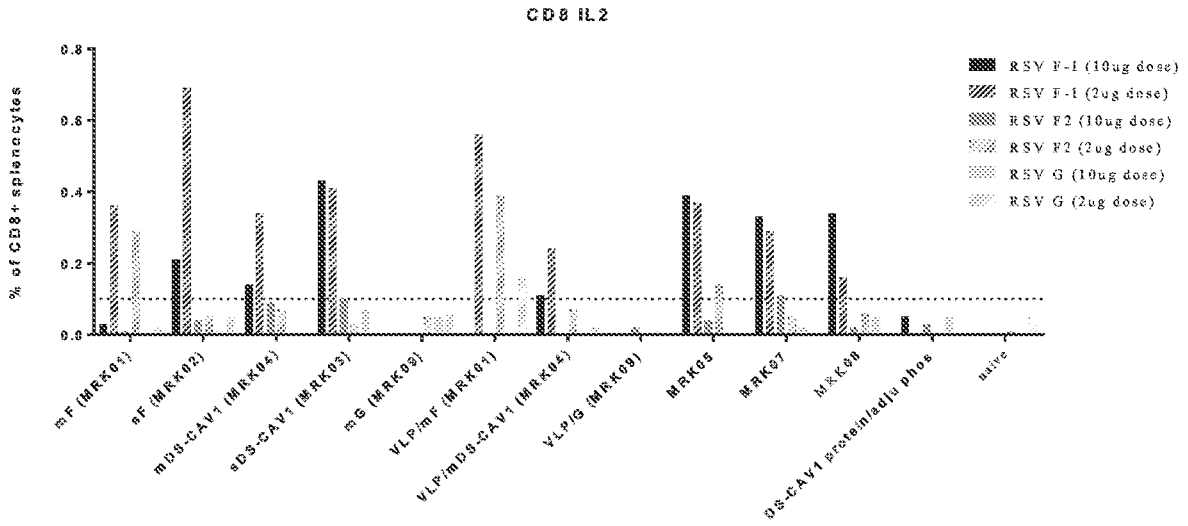

CD8 IL2
% of CD8+ splenocytes
RSV F-1 (10ug dose)
RSV F-1 (2ug dose)
RSV F2 (10ug dose)
RSV F2 (2ug dose)
RSV G (10ug dose)
RSV G (2ug dose)
mF (MRK01)
sF (MRK02)
mDS-CAV1 (MRK04)
sDS-CAV1 (MRK03)
mG (MRK09)
VLP/mF (MRK01)
VLP/mDS-CAV1 (MRK04)
VLP/G (MRK09)
MRK05
MRK07
MRK08
DS-CAV1 protein/adju phos
naive

Fig. 7C

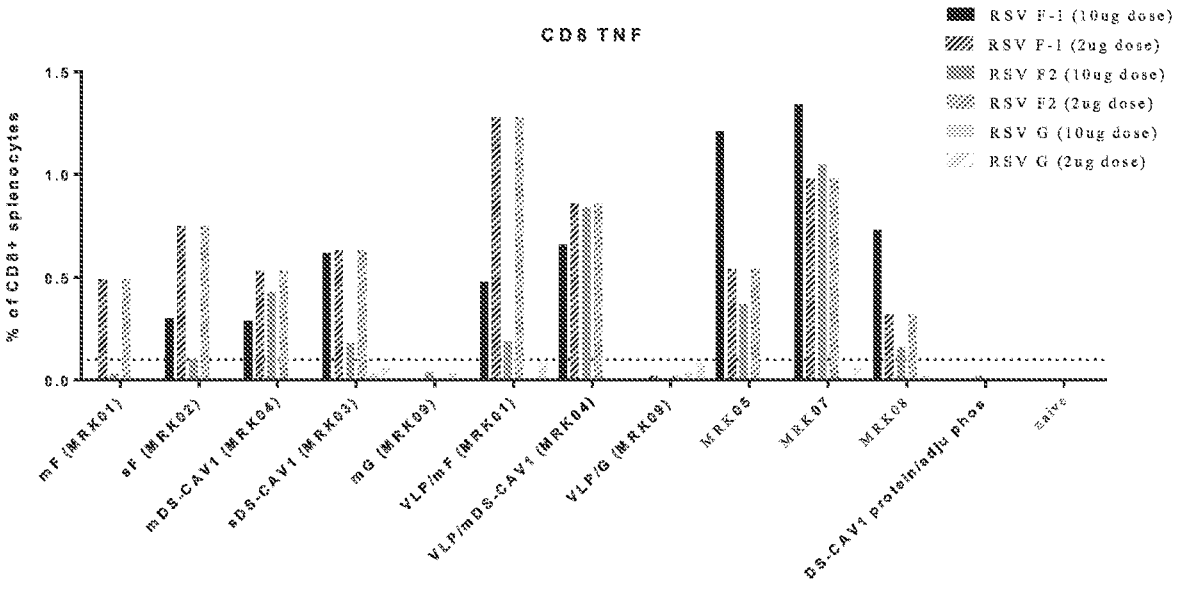

CD8 TNF
RSV F-1 (10ug dose)
RSV F-1 (2ug dose)
RSV F2 (10ug dose)
RSV F2 (2ug dose)
RSV G (10ug dose)
RSV G (2ug dose)
% of CD8+ splenocytes
1.5
1.0
0.5
0.0
mF (MRK01)
sF (MRK02)
mDS-CAV1 (MRK04)
sDS-CAV1 (MRK03)
mG (MRK09)
VLP/mF (MRK01)
VLP/mDS-CAV1 (MRK04)
VLP/G (MRK09)
MRK05
MRK07
MRK08
DS-CAV1 protein/adju phos
naive

Fig. 8

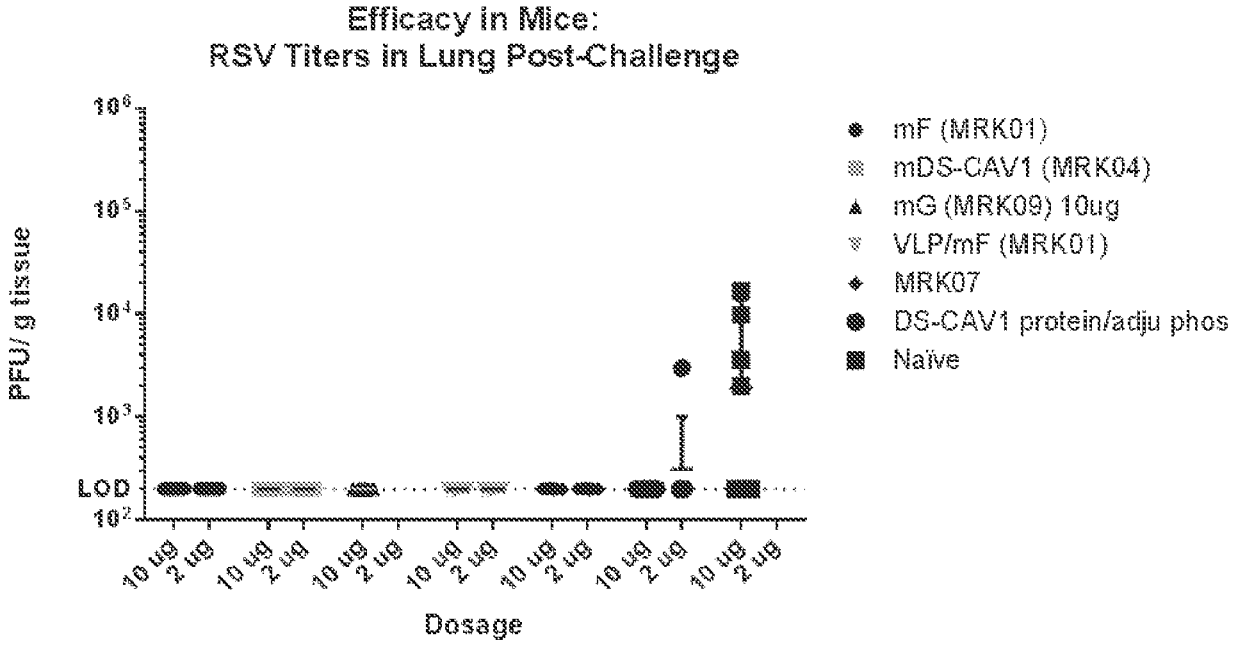

Efficacy in Mice:
RSV Titers in Lung Post-Challenge
PFU/ g tissue
10^6
10^5
10^4
10^3
LOD
10^2
10 ug
2 ug
Dosage
mF (MRK01)
mDS-CAV1 (MRK04)
mG (MRK09) 10ug
VLP/mF (MRK01)
MRK07
DS-CAV1 protein/adju phos
Naïve

Fig. 9

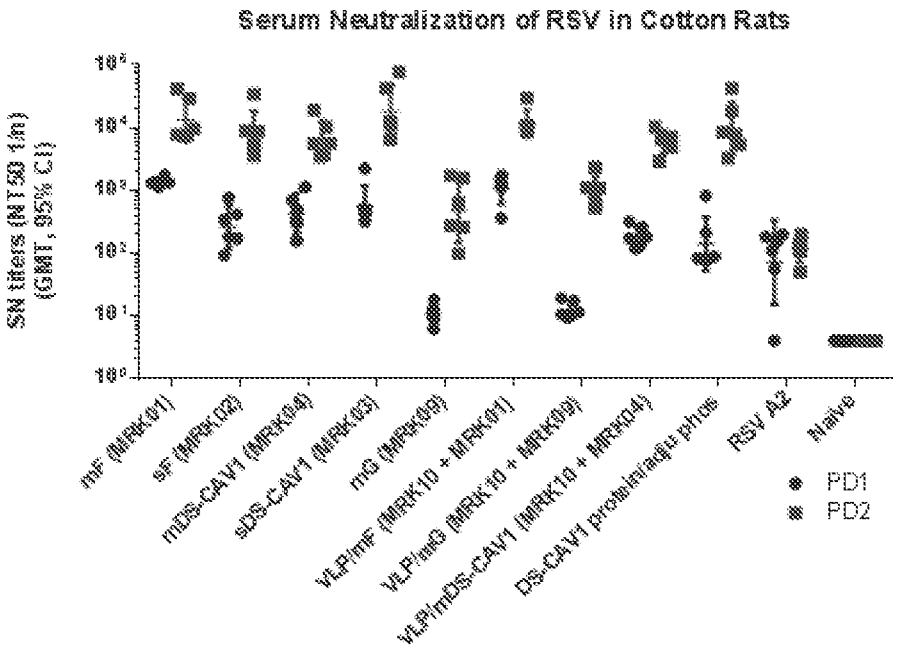

Serum Neutralization of RSV in Cotton Rats
SN titers (NT50 1/n)
(GMT, 95% CI)
mF (MRK01)
sF (MRK02)
mDS-CAV1 (MRK03)
sDS-CAV1 (MRK04)
mG (MRK05)
VLP/mF (MRK10 + MRK01)
VLP/mG (MRK10 + MRK05)
VLP/mDS-CAV1 (MRK10 + MRK04)
DS-CAV1 protein/adj+ phos
RSV A2
Naive
PD1
PD2

Fig 10. Competition ELISA from Cotton Rat Immunogenicity Study

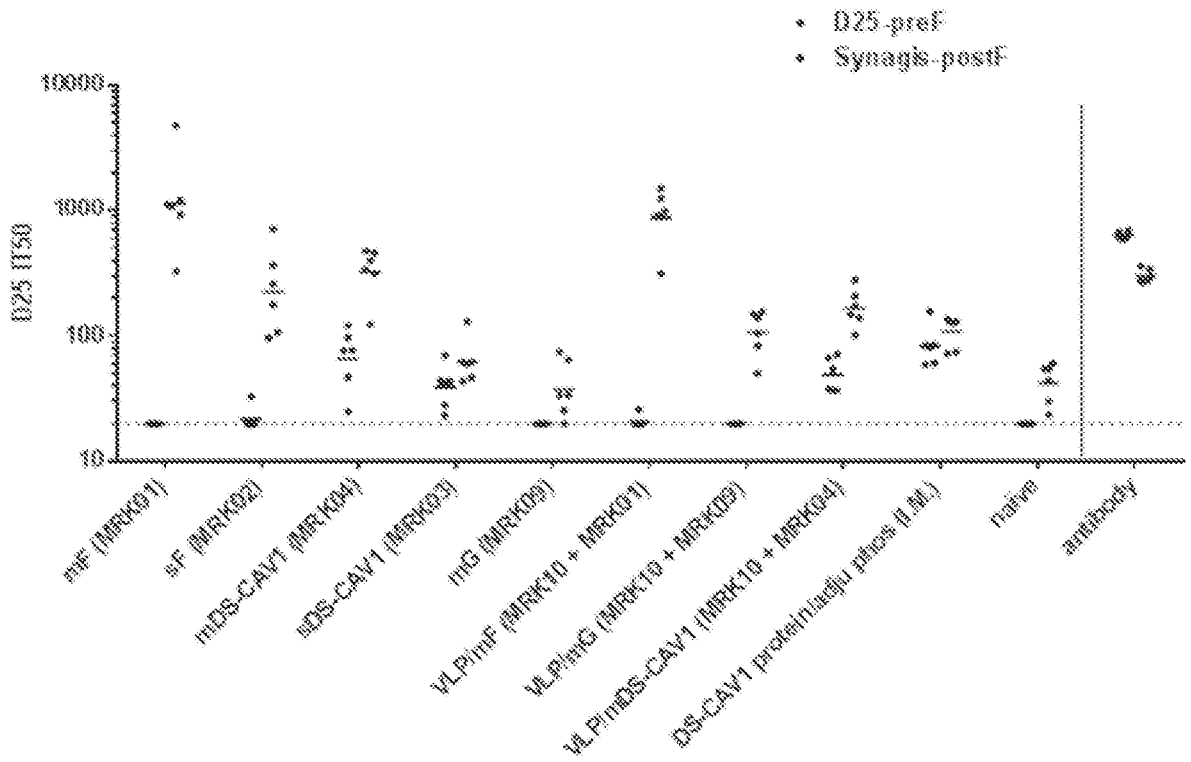


Fig. 11

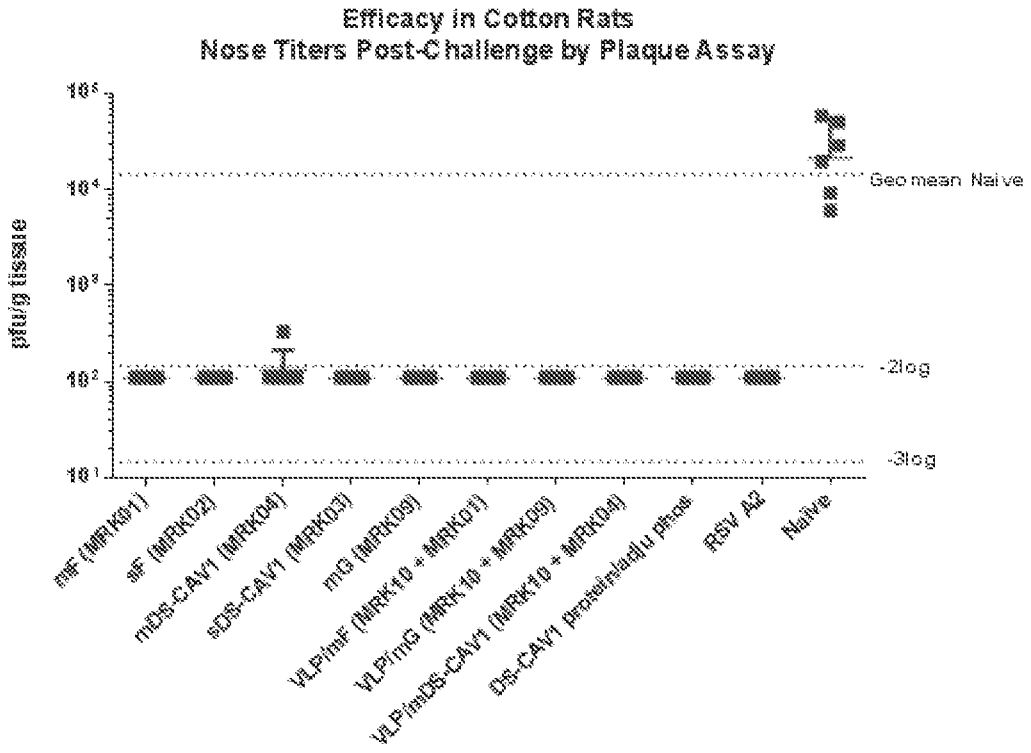

Efficacy in Cotton Rats
Nose Titers Post-Challenge by Plaque Assay
pfu/g tissue
Geo mean Naive
-2log
-3log
mF (MRK01)
sF (MRK02)
mDS-CAV1 (MRK04)
sDS-CAV1 (MRK03)
mG (MRK09)
VLP/mF (MRK10 + MRK01)
VLP/mG (MRK10 + MRK09)
VLP/mDS-CAV1 (MRK10 + MRK04)
DS-CAV1 proteinlad/u phos
RSV A2
Naive

Fig. 12

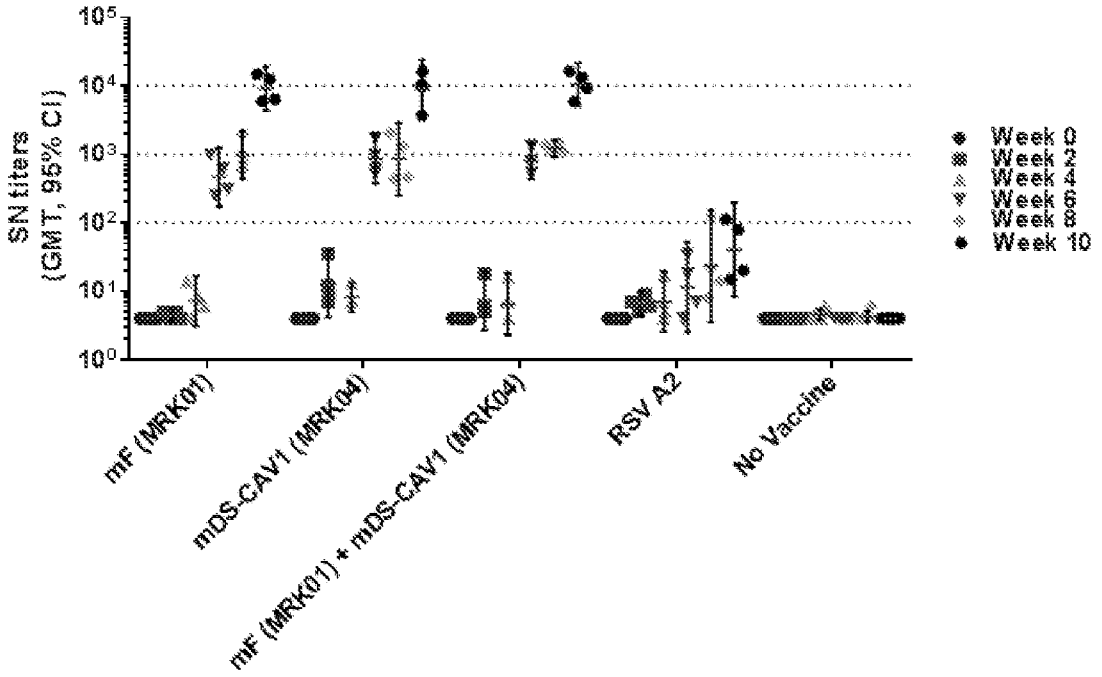

SN titers
(GMT, 95% CI)
10^5
10^4
10^3
10^2
10^1
10^0
Week 0
Week 2
Week 4
Week 6
Week 8
Week 10
mF (MRK01)
mDS-CAV1 (MRK04)
mF (MRK01) + mDS-CAV1 (MRK04)
RSV A2
No Vaccine

Fig. 13A

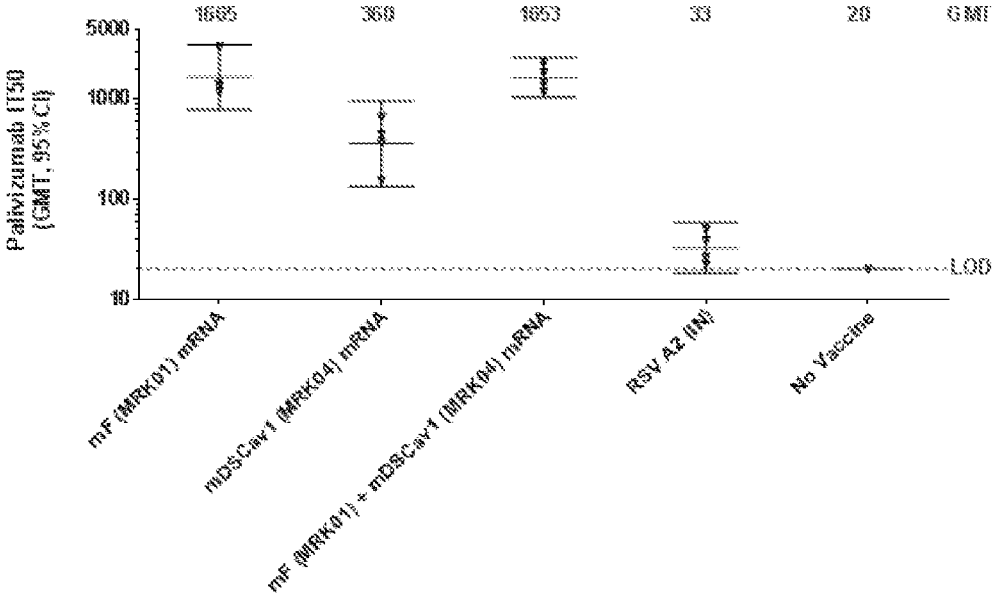


Fig. 13B

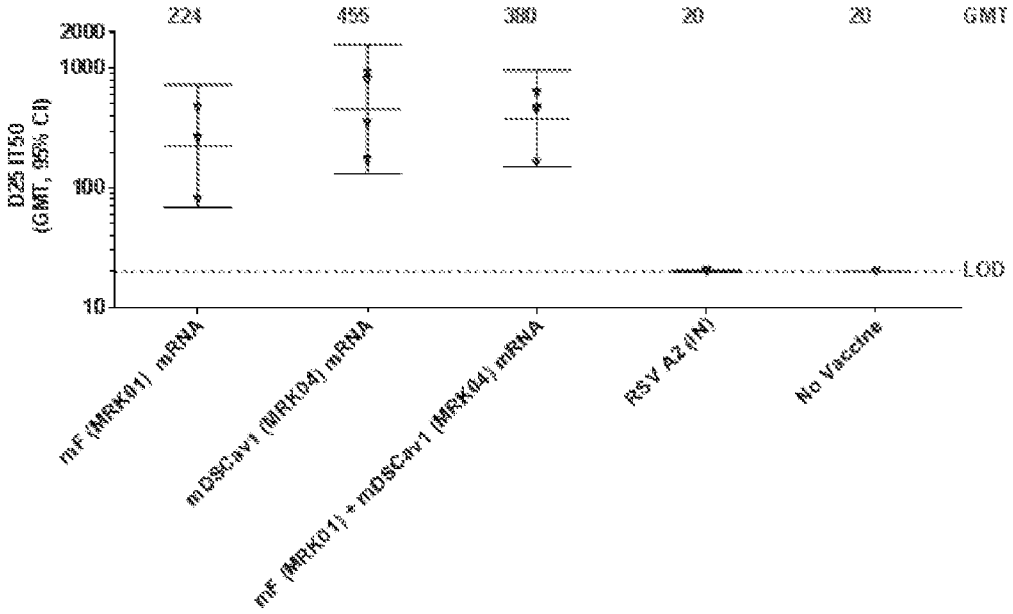


Fig. 14A

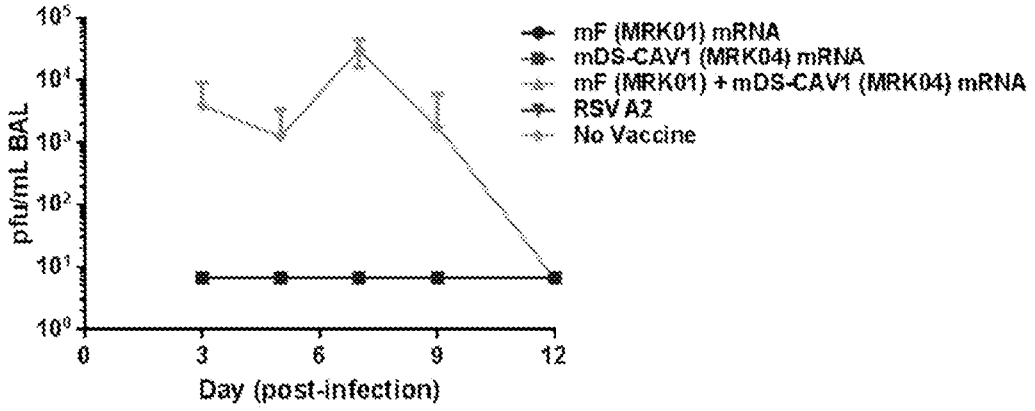


Fig. 14B

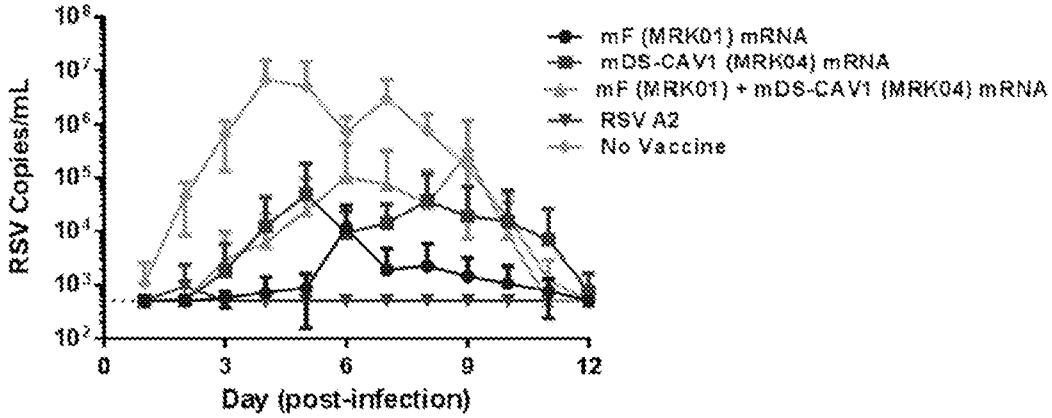


Fig. 15

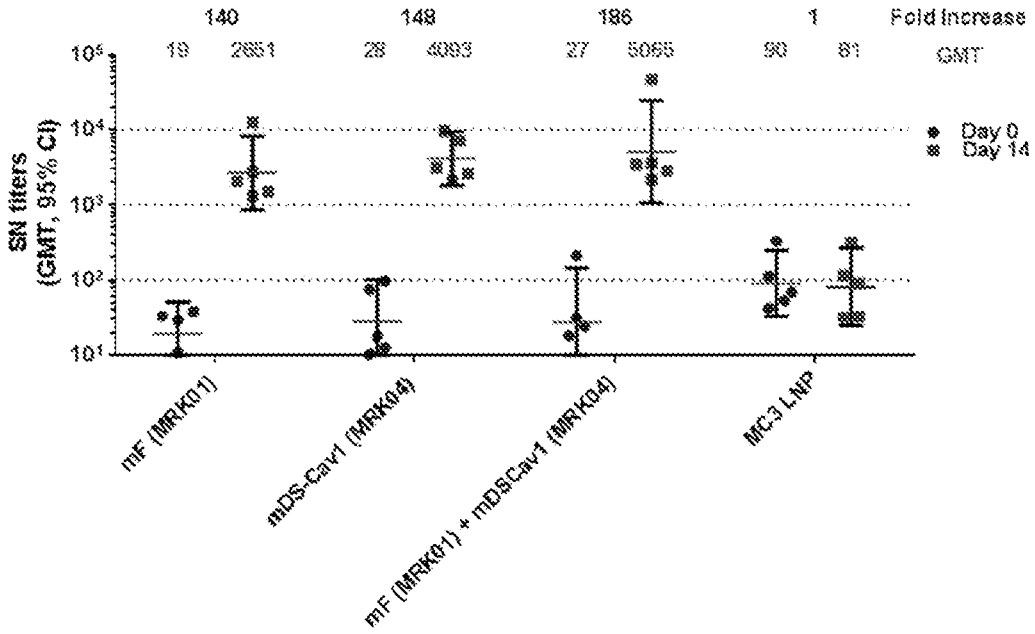

140
149
186
1
Fold Increase
19
2851
28
4083
27
5065
80
81
GMT
SN titers (GMT, 95% CI)
Day 0
Day 14
mF (MRK01)
mDS-Cav1 (MRK04)
mF (MRK01) + mDS-Cav1 (MRK04)
MC3 LNP

Fig. 16

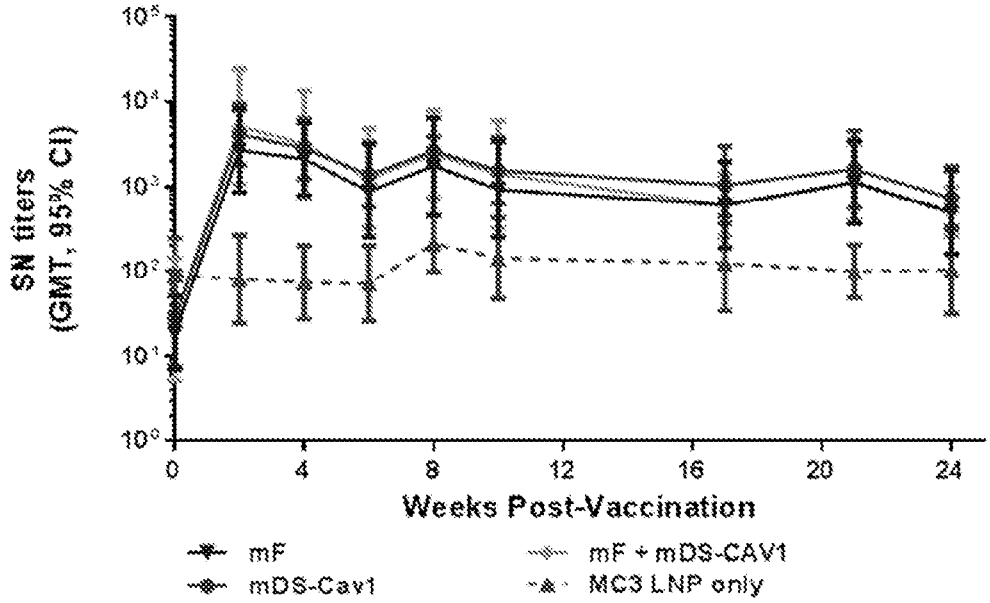

SN titers (GMT, 95% CI)
Weeks Post-Vaccination
mF
mDS-Cav1
mF + mDS-CAV1
MC3 LNP only

Fig. 17A

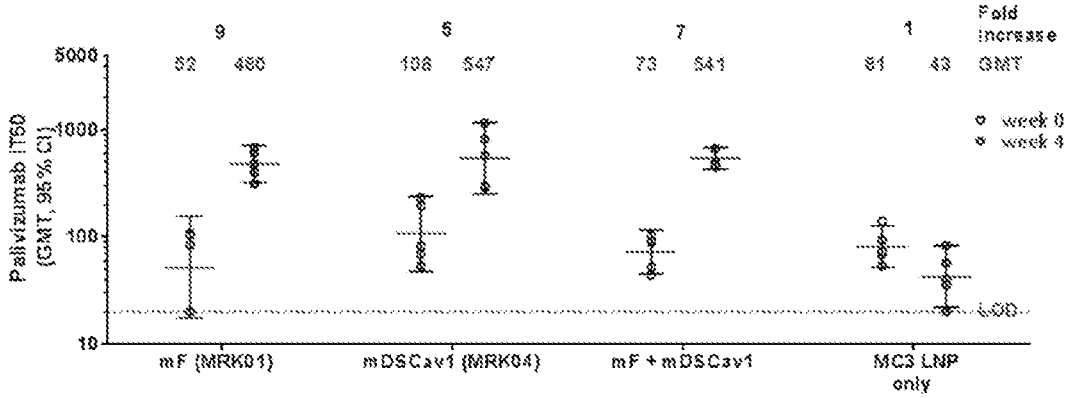


Fig. 17B

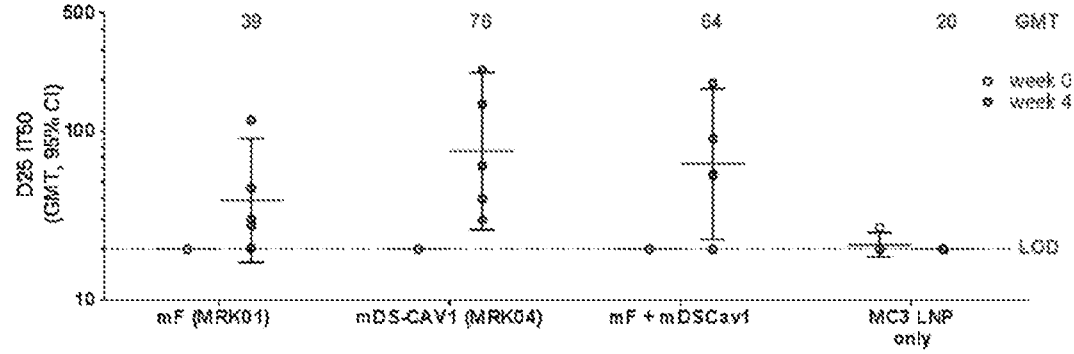


Fig. 18A

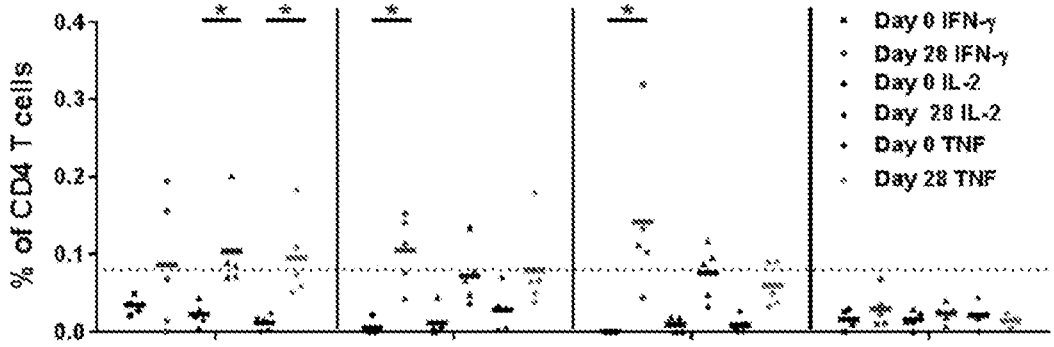


Fig. 18B

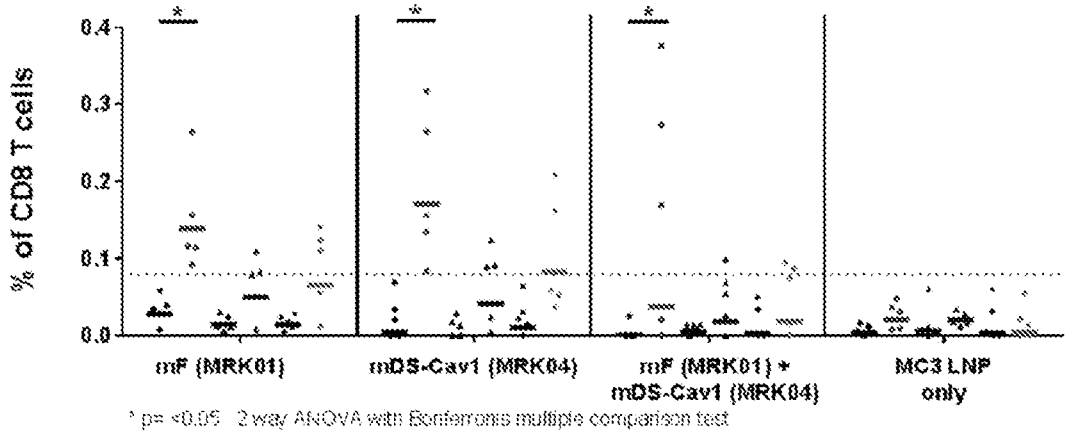


Fig. 19

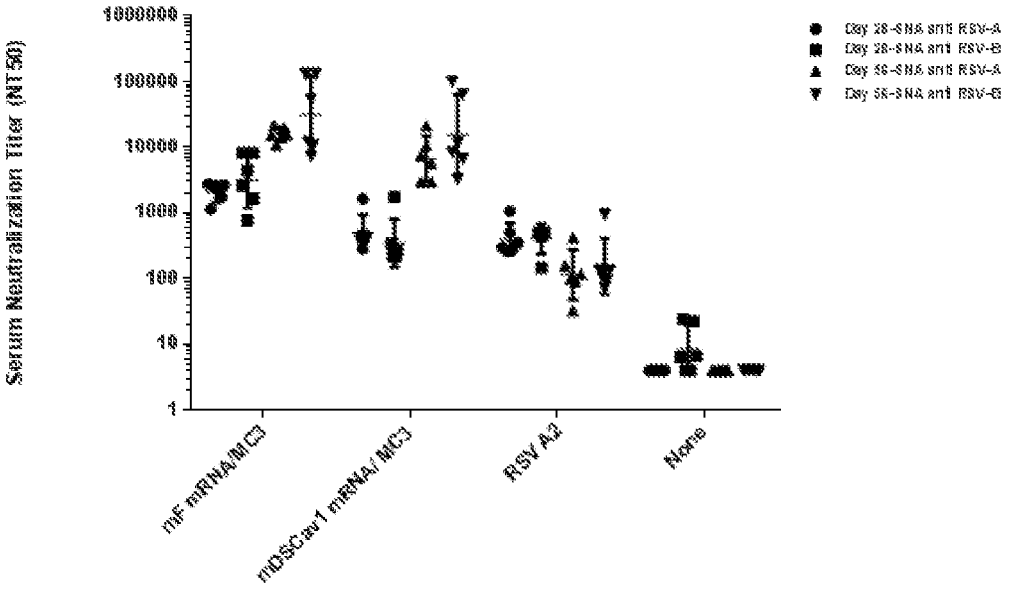
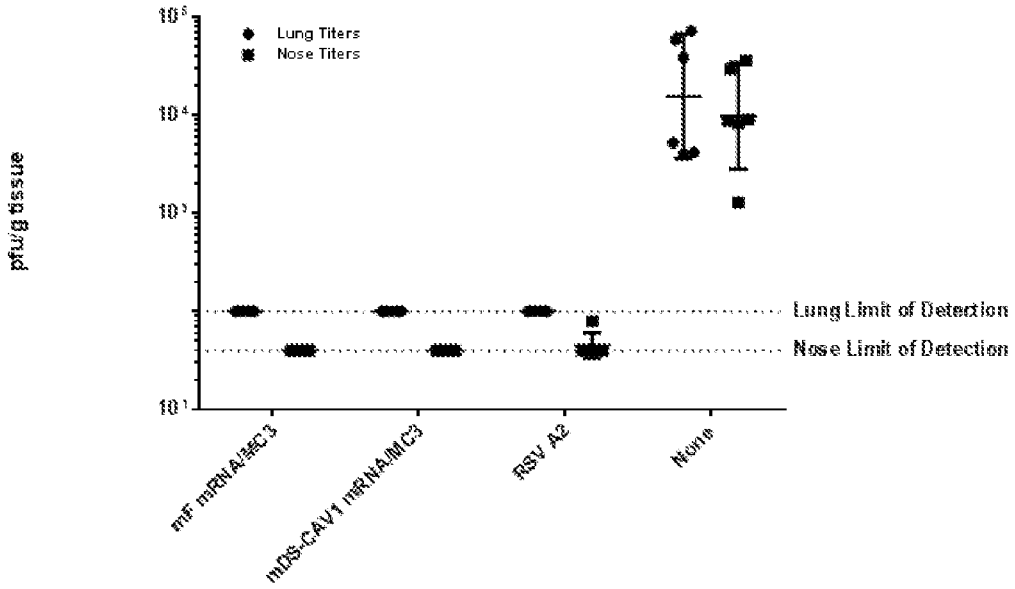

Serum Neutralization Titer (NT50)
1000000
100000
10000
1000
100
10
1
Day 28-SNA anti RSV-A
Day 28-SNA anti RSV-B
Day 56-SNA anti RSV-A
Day 56-SNA anti RSV-B
mF mRNA/MC3
mDS-Cav1 mRNA/ MC3
RSV A2
None

Fig. 20


pfu/g tissue
Lung Titers
Nose Titers
Lung Limit of Detection
Nose Limit of Detection
mF mRNA/MC3
mDS-CAV1 mRNA/MC3
RSV A2
None