FIG. 1

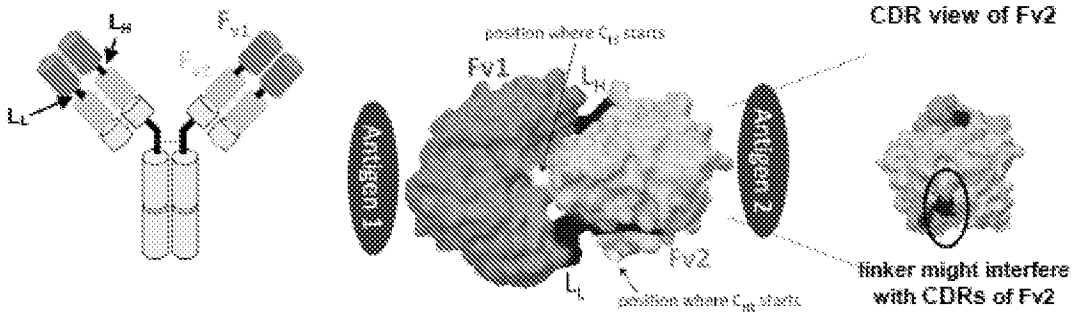

position where $C_{H1}$ starts
Fv1
$L_H$
Antigen 1
Antigen 2
Fv2
$L_L$
position where $C_H$ starts
CDR view of Fv2
linker might interfere with CDRs of Fv2

FIG. 2

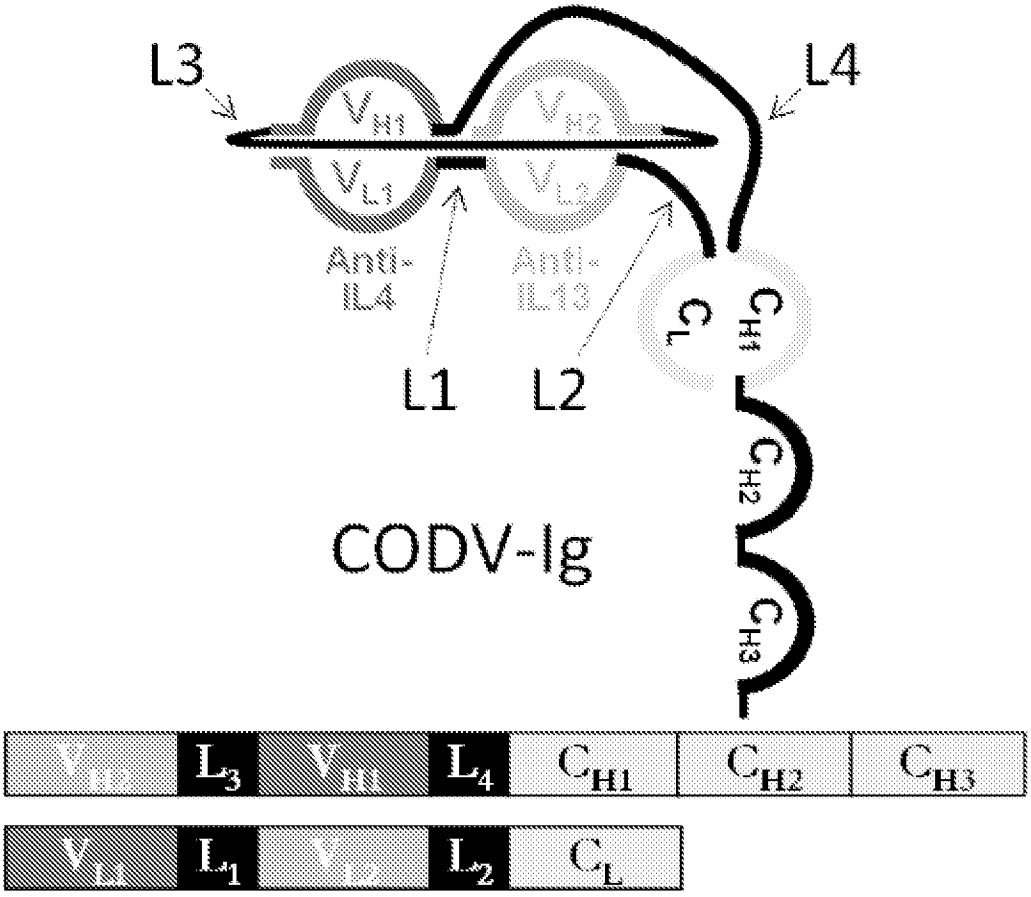

L3
L4
$V_{H1}$
$V_{H2}$
$V_{L1}$
$V_{L2}$
Anti-IL4
Anti-IL13
$C_L$
$C_{H1}$
L1
L2
$C_{H2}$
CODV-Ig
$C_{H3}$
$V_{H2}$ $L_3$ $V_{H1}$ $L_4$ $C_{H1}$ $C_{H2}$ $C_{H3}$
$V_{L1}$ $L_1$ $V_{L2}$ $L_2$ $C_L$

FIG. 3

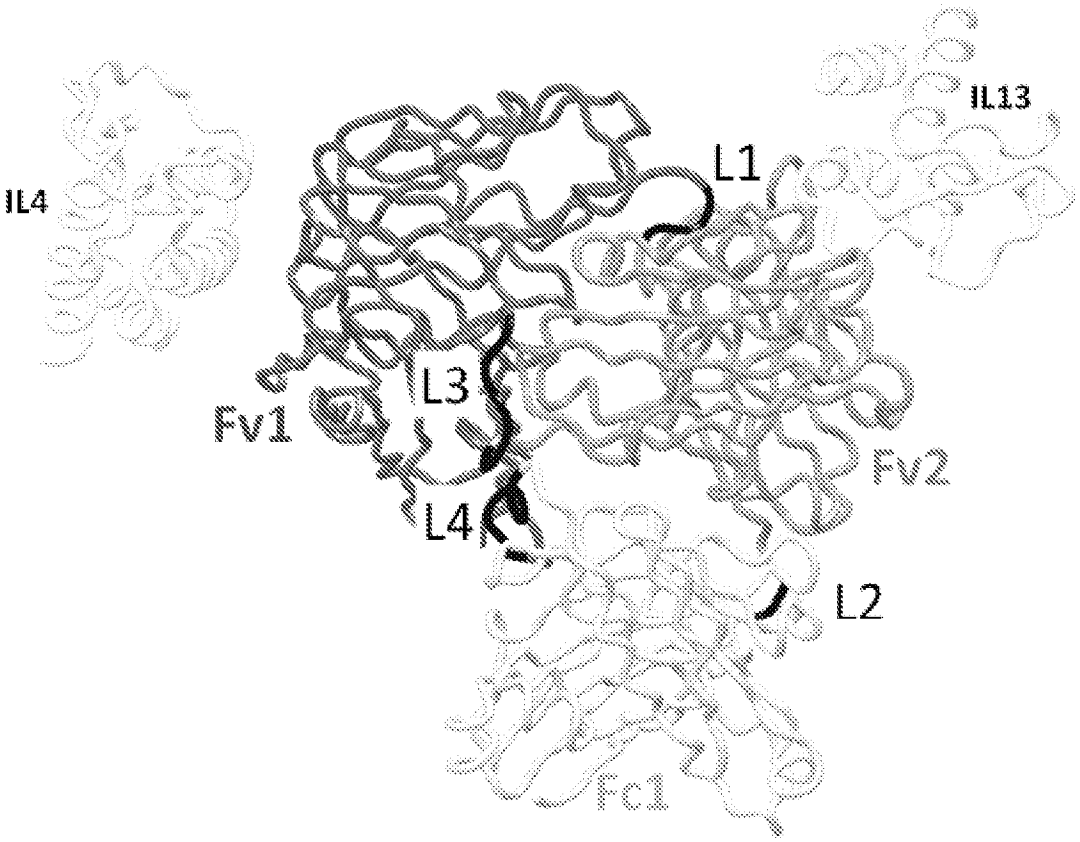


FIG. 4

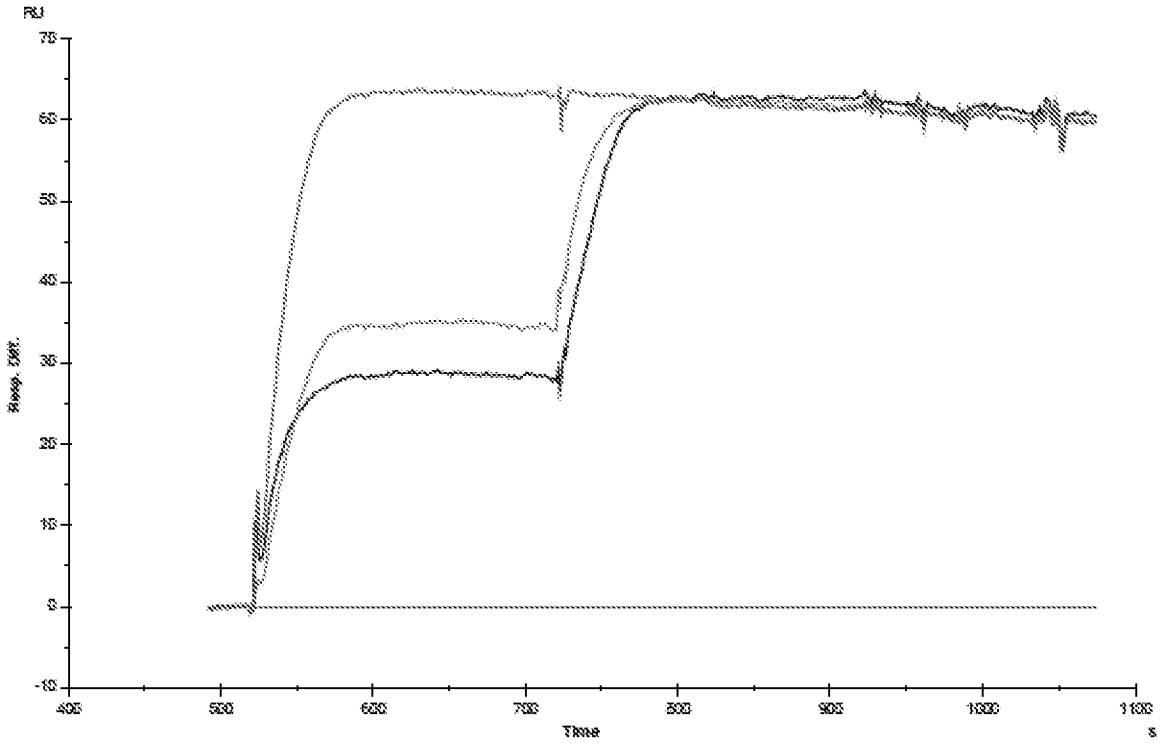


FIG. 5

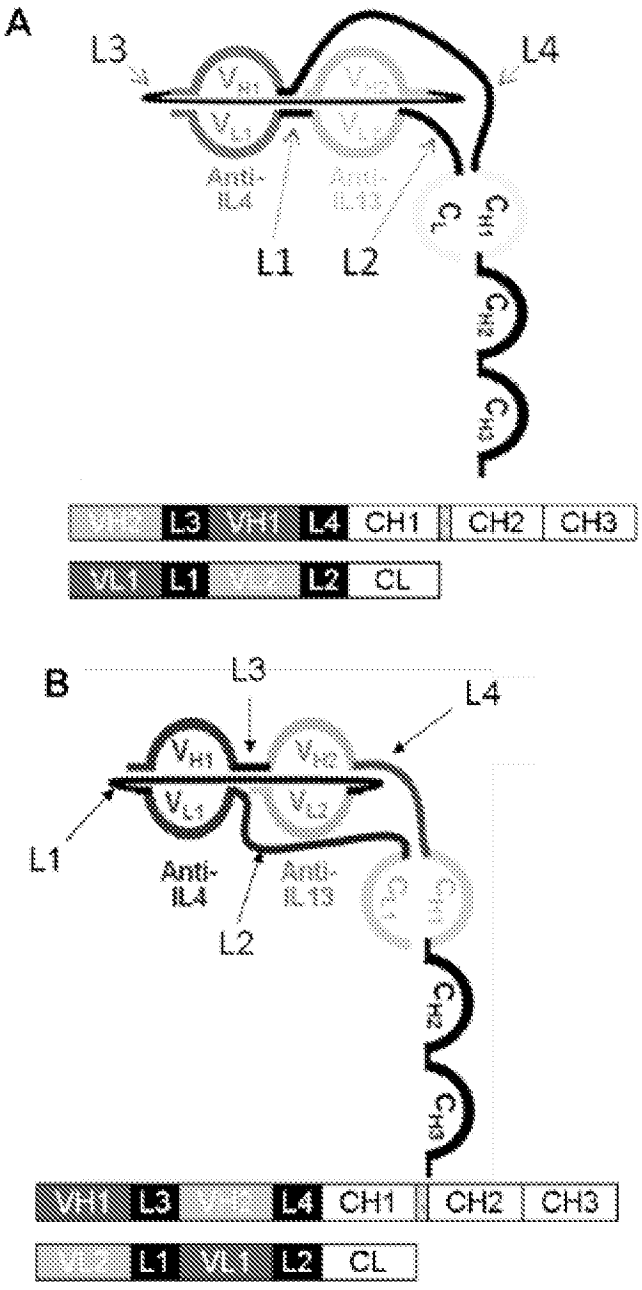

A
L3
L4
Anti-IL4
Anti-IL13
L1
L2
CH1
CH2
CH3
L3
L4
L1
L2
CL
B
L3
L4
L1
Anti-IL4
Anti-IL13
L2
CH1
CH2
CH3
L3
L4
L1
L2
CL

FIG. 6

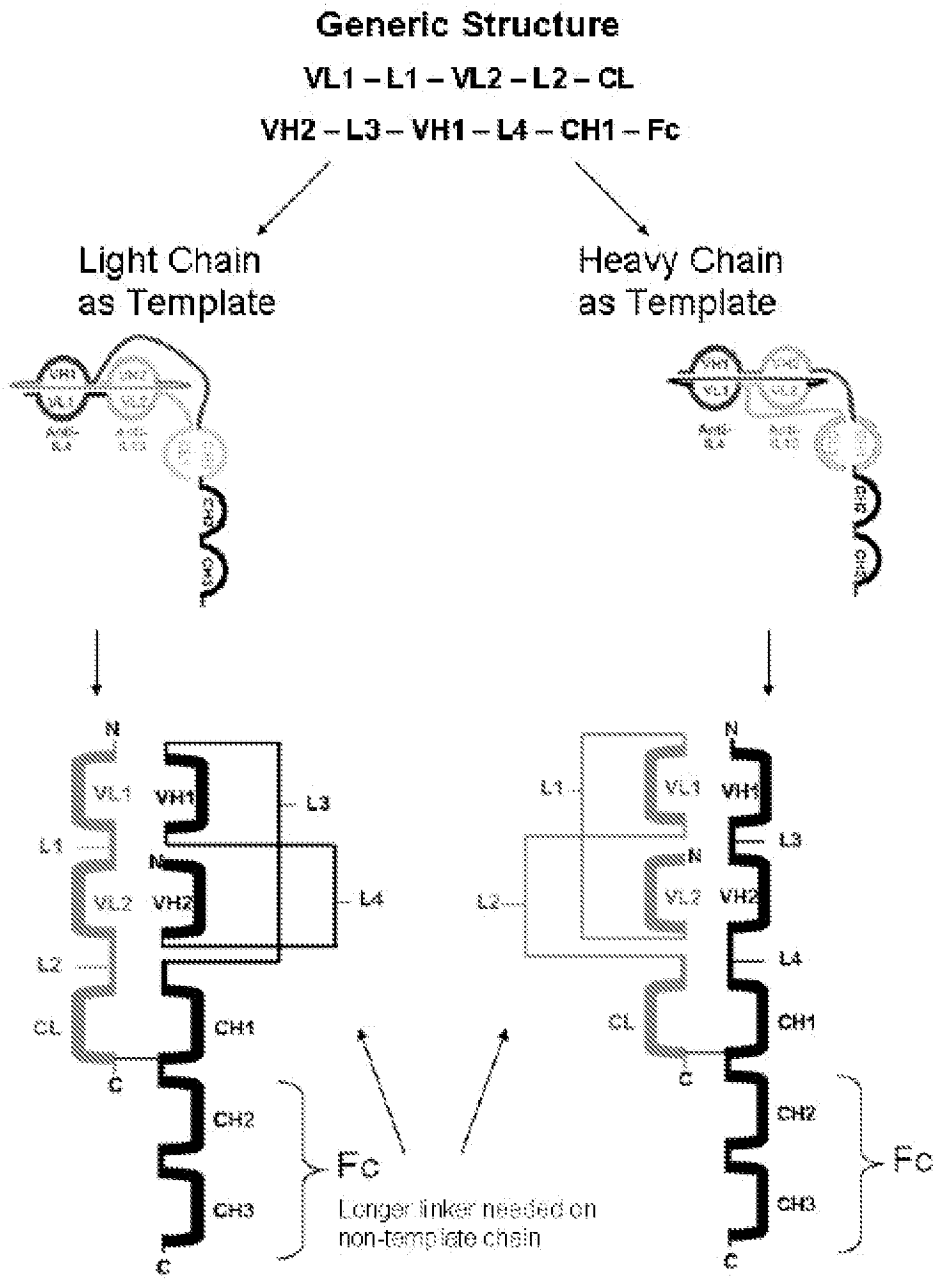
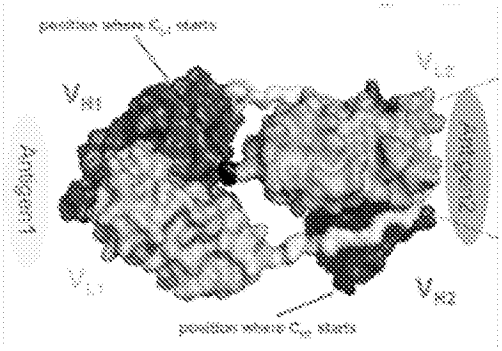
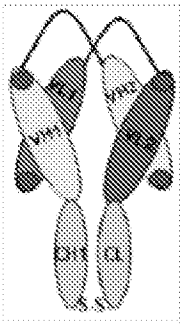
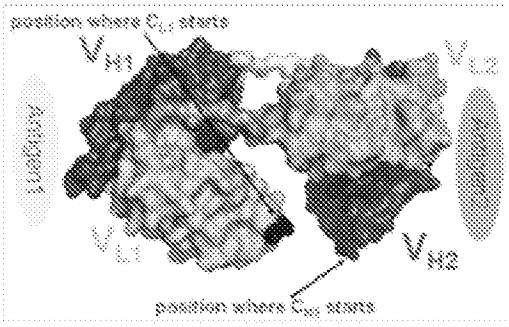

Generic Structure
VL1 – L1 – VL2 – L2 – CL
VH2 – L3 – VH1 – L4 – CH1 – Fc
Light Chain as Template
Heavy Chain as Template
N
VL1
VH1
L3
L1
N
L4
VL2
VH2
L2
CL
CH1
C
CH2
Fc
CH3
Longer linker needed on non-template chain
C

FIG. 7



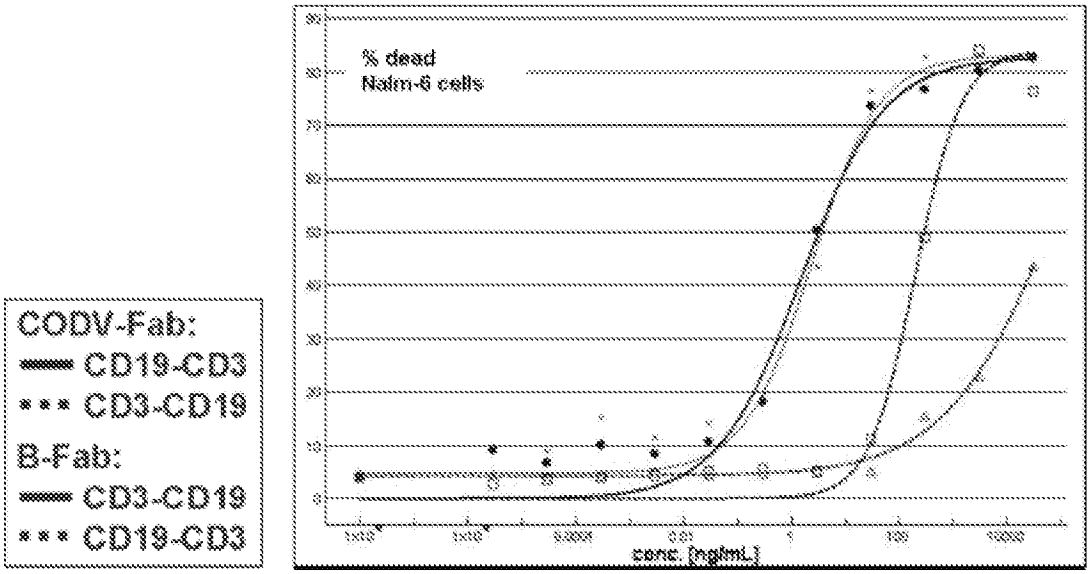

| | On-rate [1/Ms] | Off-rate [1/s] | KD [M] |
|---|---|---|---|
| Parental anti-IL4 mAb | 2.49E+07 | 1.95E-04 | 7.83E-12 |
| Parental anti-IL13 mAb | 1.69E+06 | 1.30E-04 | 8.19E-11 |
| TBTI (IL4) | 6.70E+06 | 1.50E-04 | 2.63E-11 |
| TBTI (IL13) | 3.29E+06 | 1.70E-04 | 5.19E-11 |




| | On-rate [1/Ms] | Off-rate [1/s] | KD [M] |
|---|---|---|---|
| Parental anti-IL4 mAb | 2.49E+07 | 1.95E-04 | 7.83E-12 |
| Parental anti-IL13 mAb | 1.69E+06 | 1.30E-04 | 8.16E-11 |
| CODH (IL4) | 3.16E+07 | 2.89E-04 | 9.14E-12 |
| CODH (IL13) | 1.20E+06 | 1.12E-04 | 9.34E-11 |

FIG. 8


% dead
Nalm-6 cells
conc. [ng/mL]
CODV-Fab:
CD19-CD3
CD3-CD19
B-Fab:
CD3-CD19
CD19-CD3