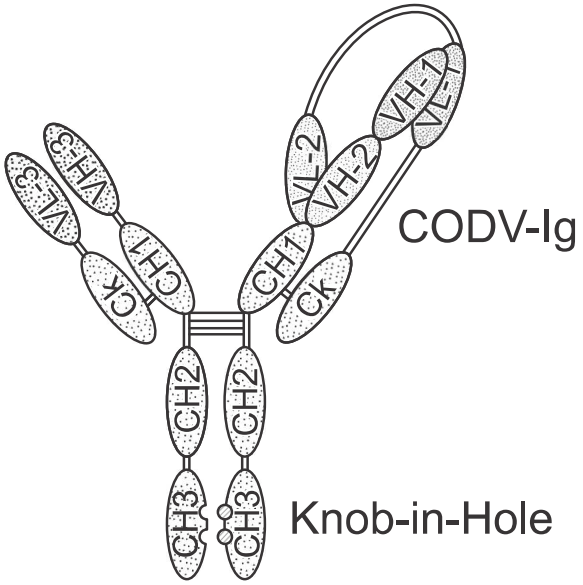


FIG. 1A

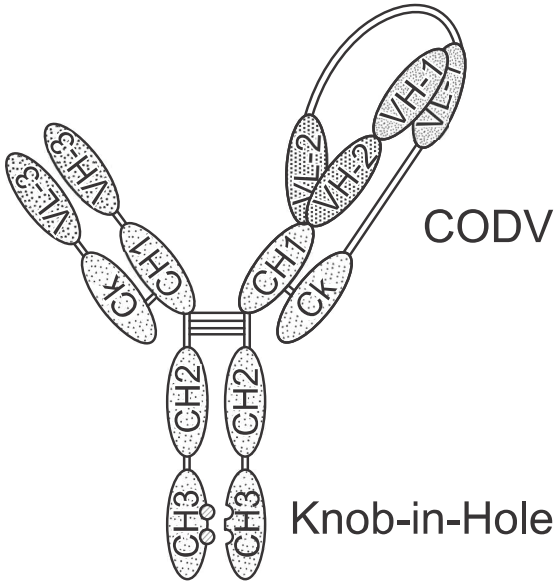


FIG. 1B

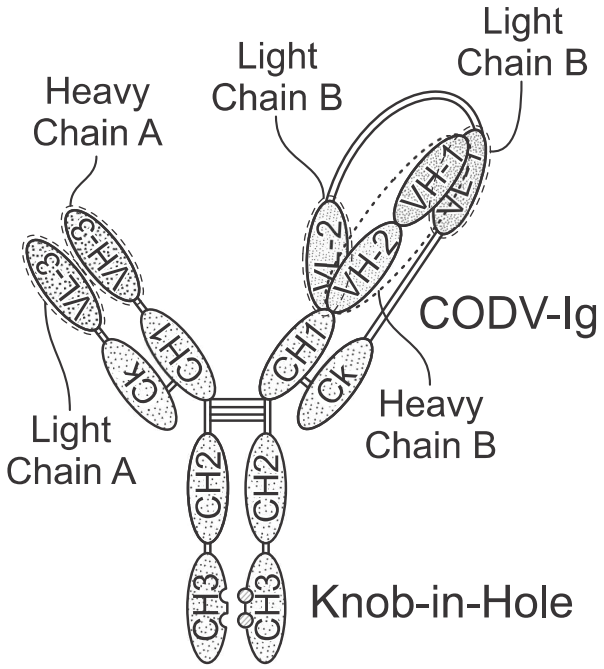


FIG. 1C

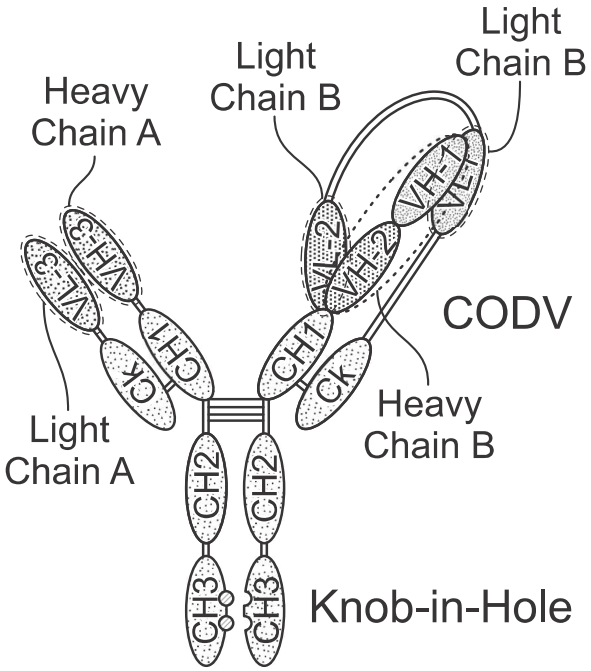


FIG. 1D

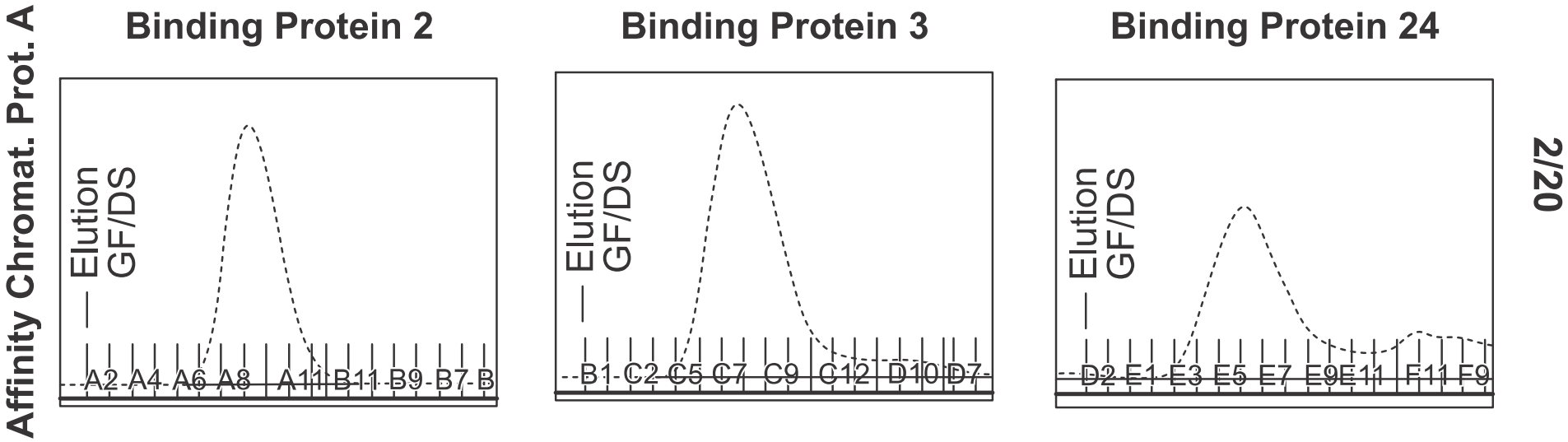

Affinity Chromat. Prot. A
Binding Protein 2
Elution
GF/DS
A2 A4 A6 A8 A11 B11 B9 B7 B
Binding Protein 3
Elution
GF/DS
B1 C2 C5 C7 C9 C12 D10 D7
Binding Protein 24
Elution
GF/DS
D2 E1 E3 E5 E7 E9 E11 F11 F9

FIG. 2A

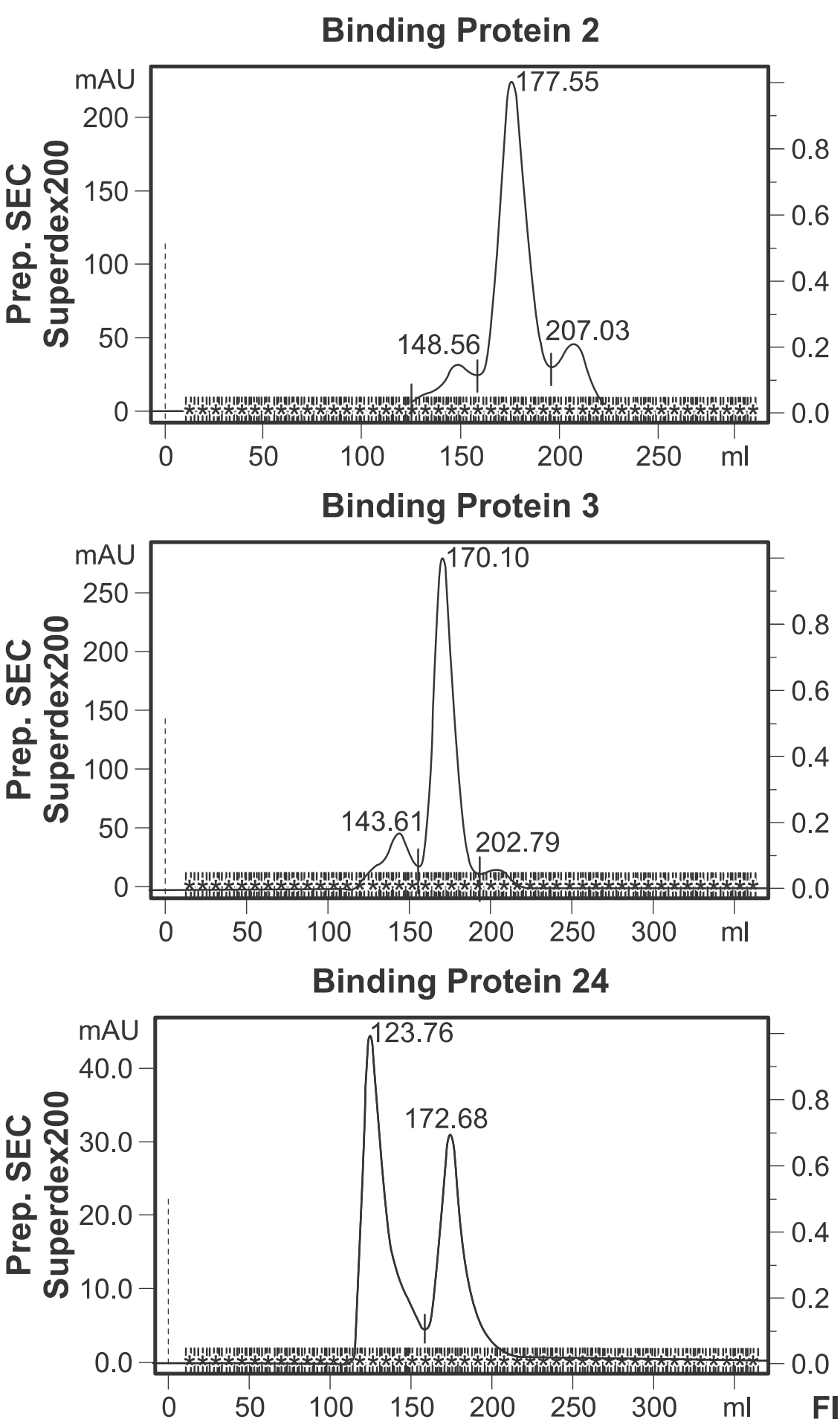

Binding Protein 2
mAU
Prep. SEC Superdex200
177.55
148.56
207.03
ml
Binding Protein 3
170.10
143.61
202.79
Binding Protein 24
123.76
172.68

FIG. 2B

Affinity Chromat. Prot. A
Injection Sample
GF/DS
Elution GF/DS
A2 A4 A6 A8 A10 B1 B3 B5 B7 B9
1240
1260
1280
MPER Ab
Empty Loops Discarded Outlet F7
CD4BS Ab "b"
Elution GF/DS
D2 E1 E3 E5 E7 E9 F1 F3 F5 F7
V1/V2 directed Ab "a"
Elution GF/DS
F4 F2 G1 G3 G5 G7 G9 H1 H2

FIG. 3A

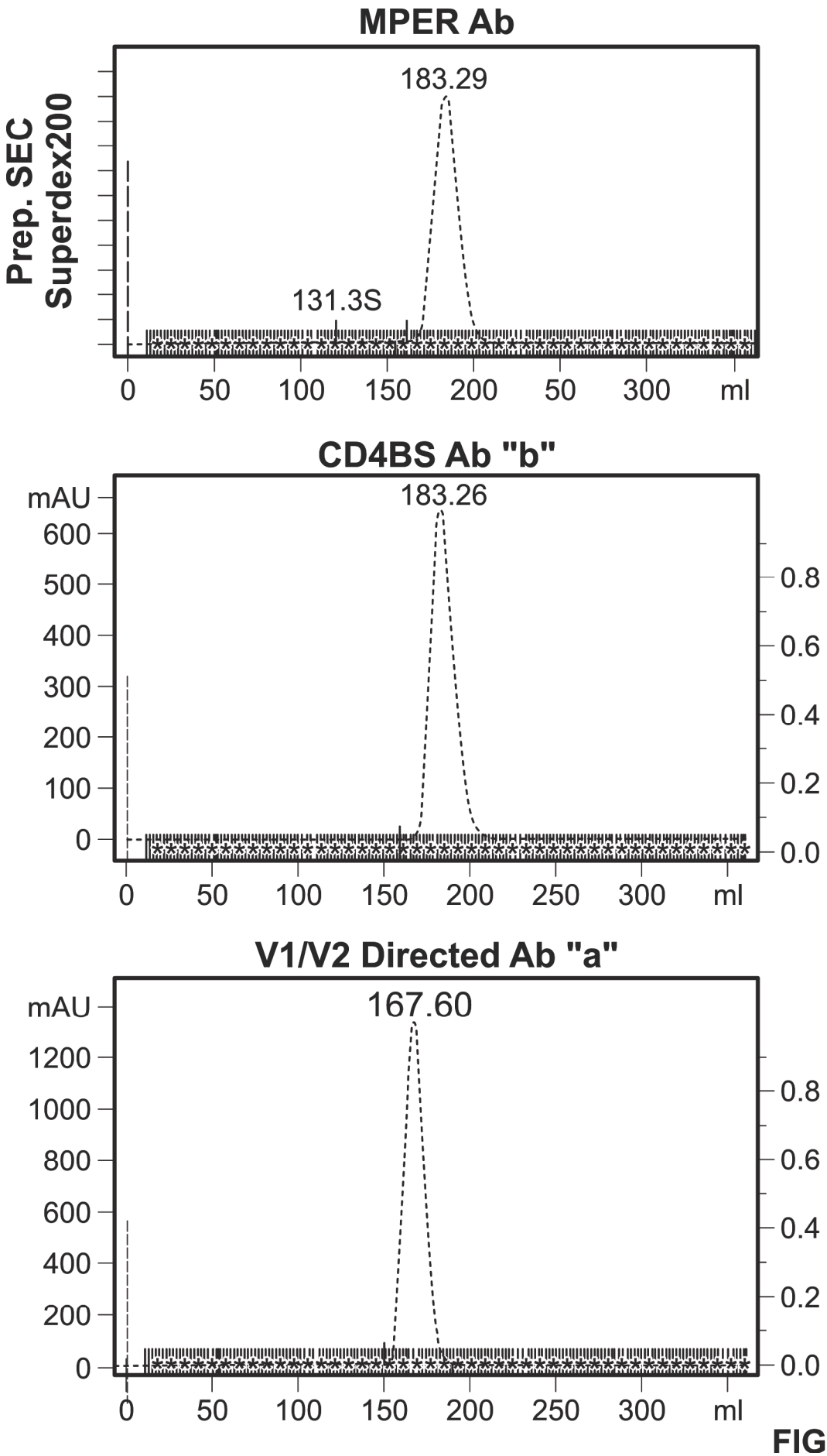

MPER Ab
Prep. SEC
Superdex200
183.29
131.3S
0
50
100
150
200
50
300
ml
CD4BS Ab "b"
mAU
183.26
600
500
400
300
200
100
0
0.8
0.6
0.4
0.2
0.0
0
50
100
150
200
250
300
ml
V1/V2 Directed Ab "a"
mAU
167.60
1200
1000
800
600
400
200
0
0.8
0.6
0.4
0.2
0.0
0
50
100
150
200
250
300
ml

FIG. 3B

MPER-V1/V2 directed "a" Ab

V1/V2 directed "a"-MPER Ab

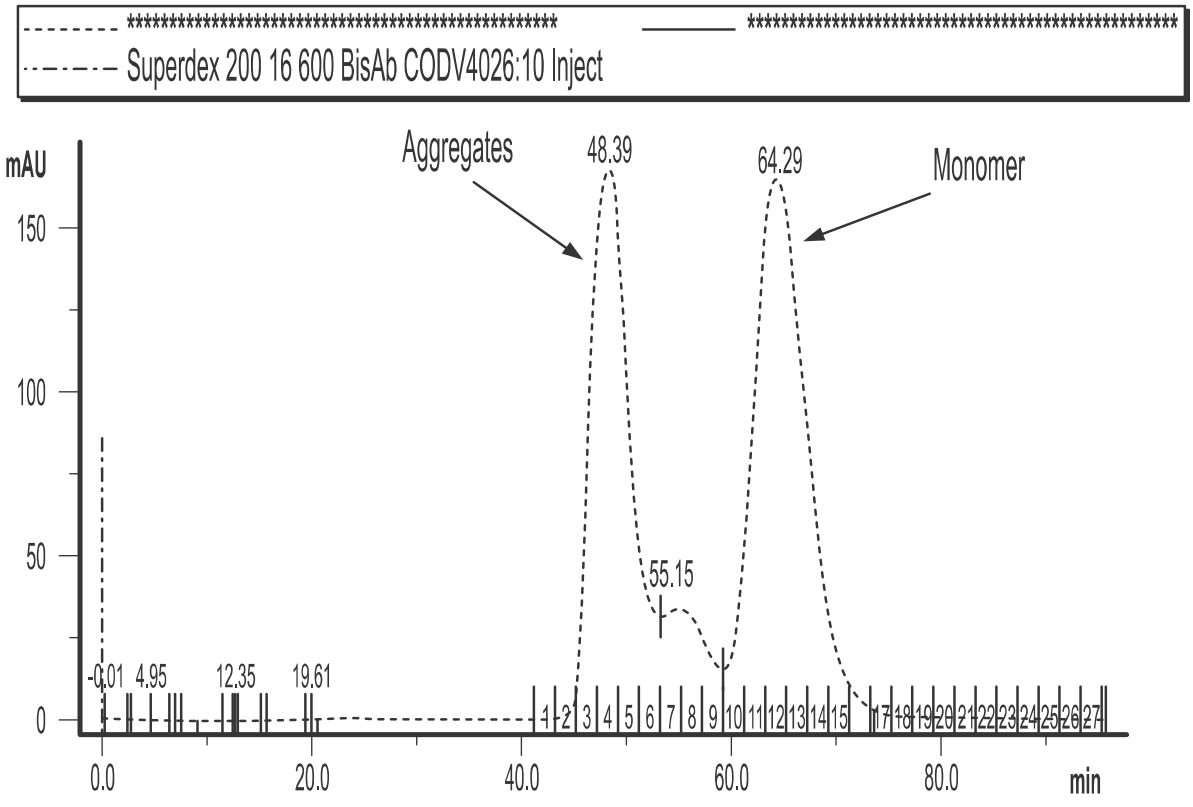
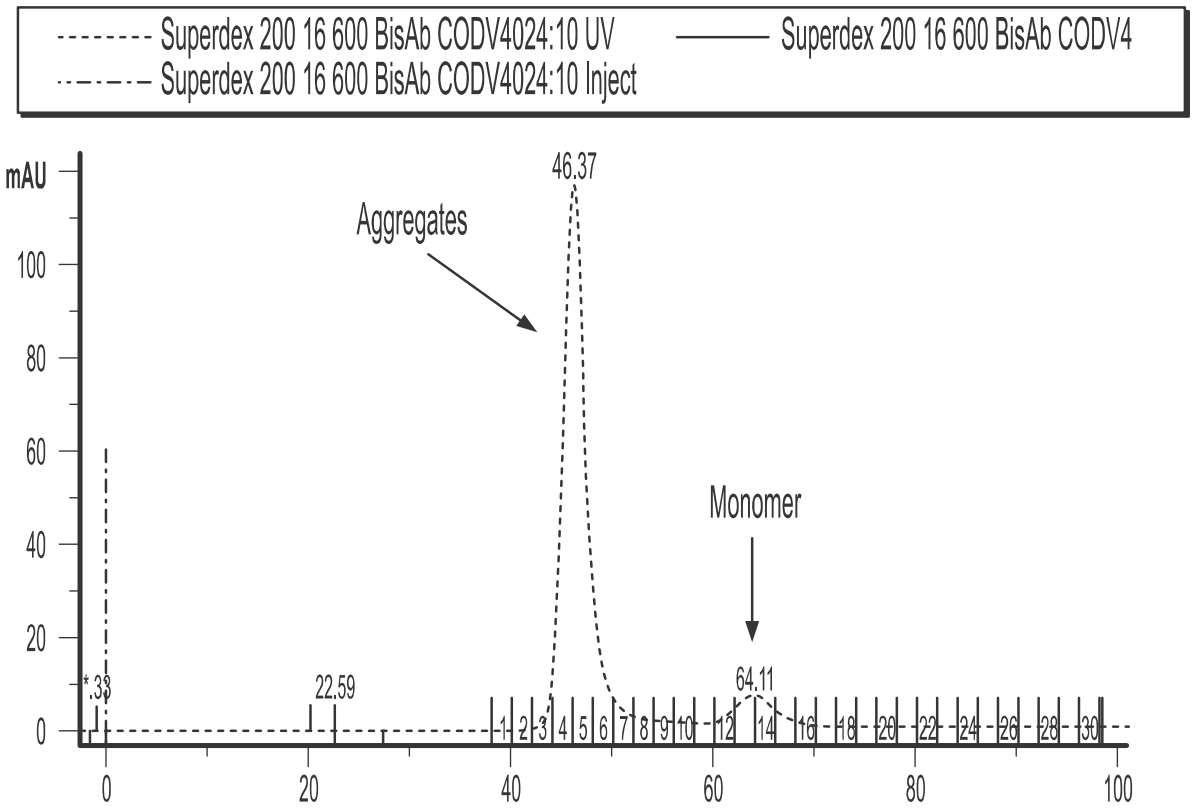


FIG. 4A

CD4BS "b"-V1/V2 directed "a" Ab



V1/V2 directed "a"-CD4BS "b" Ab

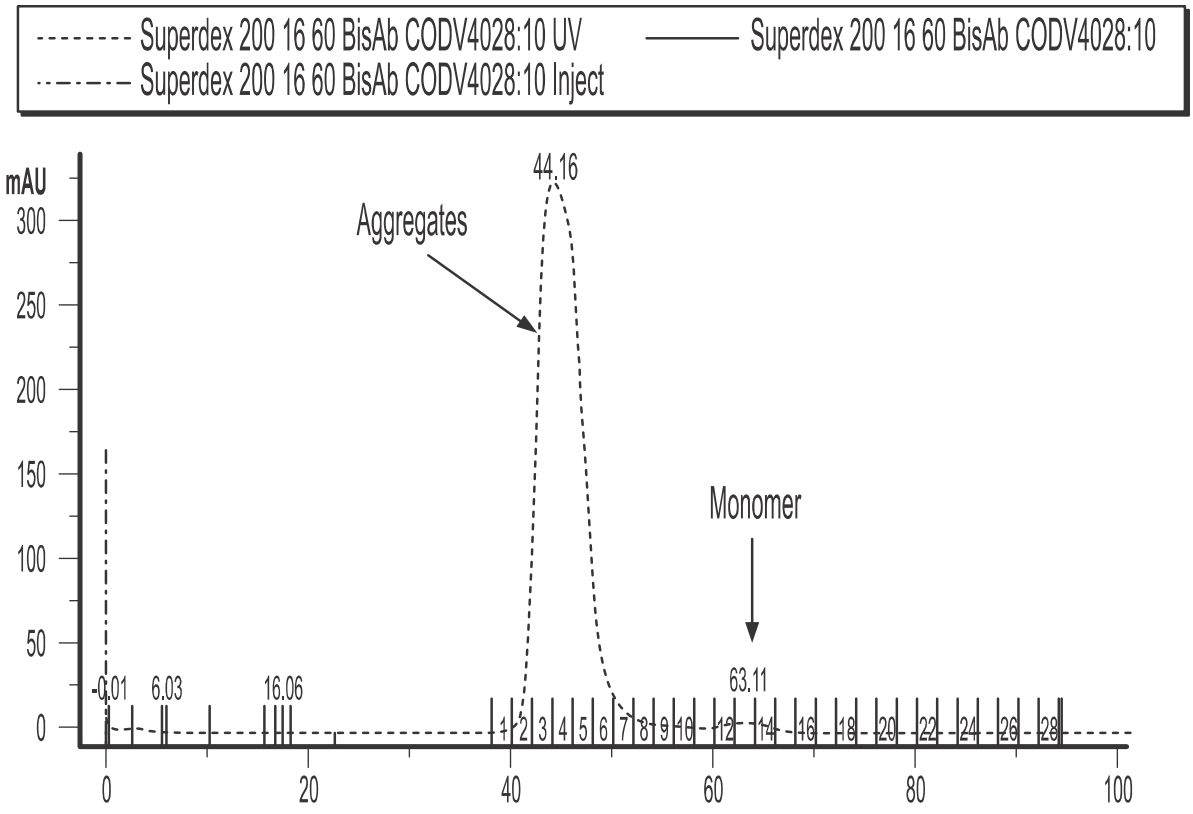


FIG. 4A (Cont.)

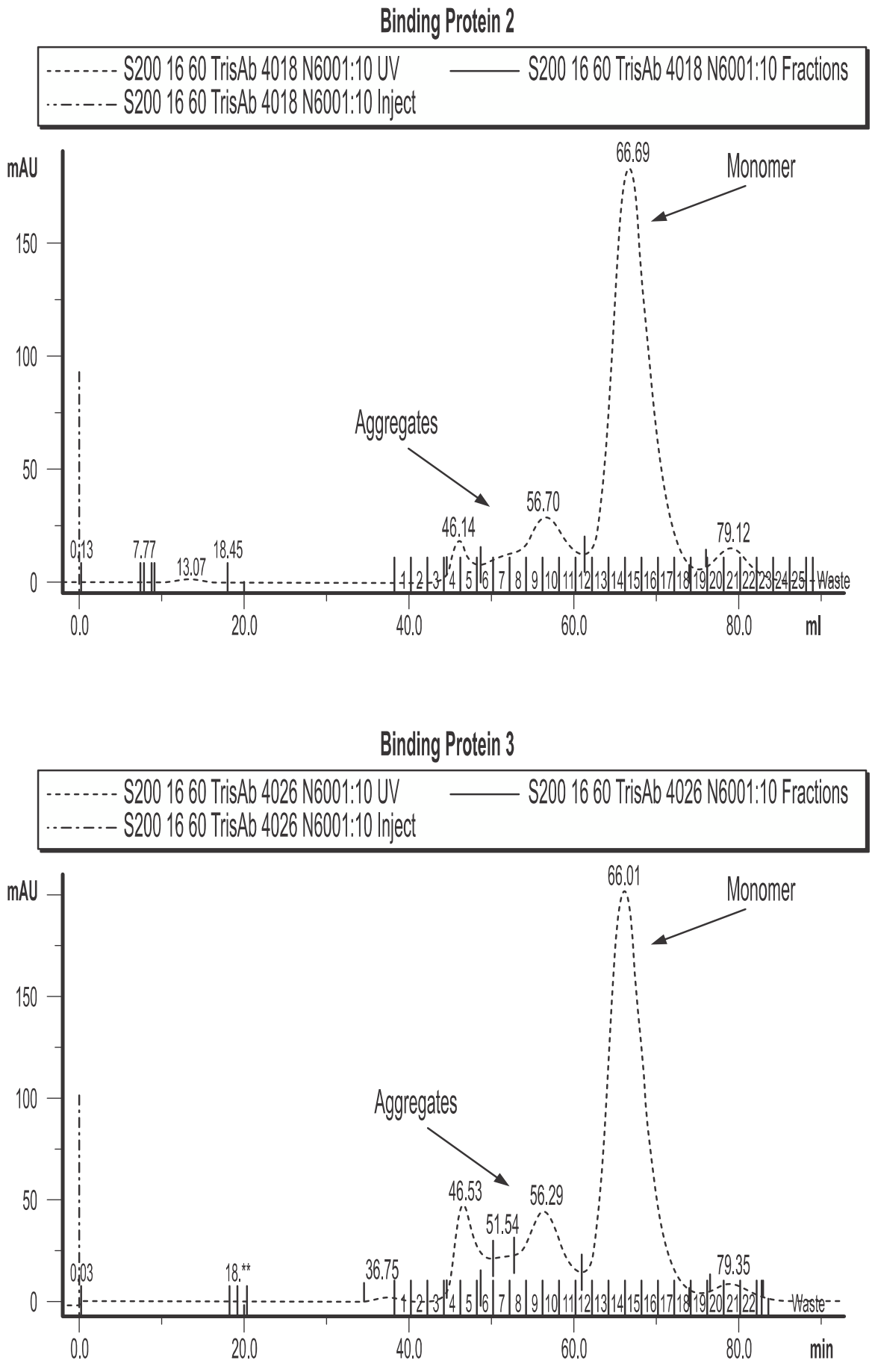
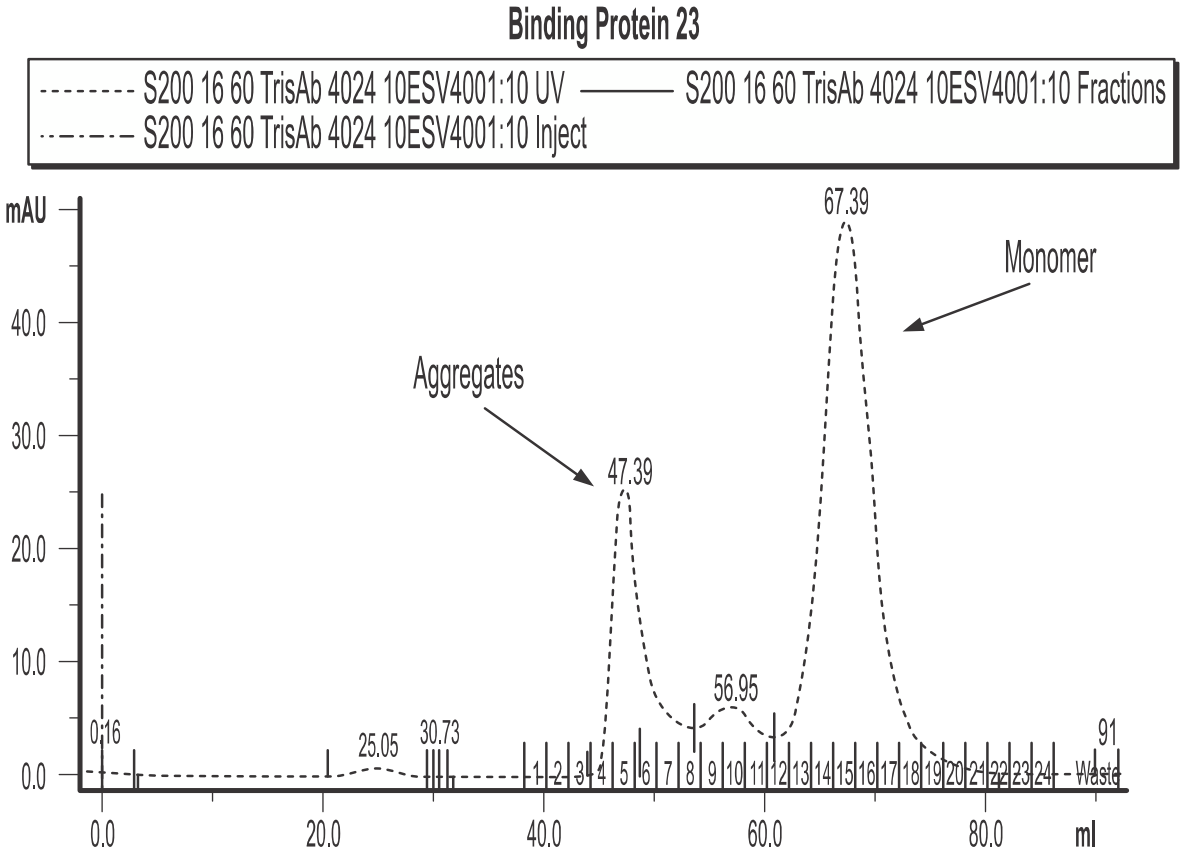

Binding Protein 2
S200 16 60 TrisAb 4018 N6001:10 UV
S200 16 60 TrisAb 4018 N6001:10 Inject
S200 16 60 TrisAb 4018 N6001:10 Fractions
mAU
150
100
50
0
66.69
Monomer
Aggregates
56.70
46.14
79.12
0.13
7.77
13.07
18.45
Waste
0.0
20.0
40.0
60.0
80.0
ml
Binding Protein 3
S200 16 60 TrisAb 4026 N6001:10 UV
S200 16 60 TrisAb 4026 N6001:10 Inject
S200 16 60 TrisAb 4026 N6001:10 Fractions
mAU
150
100
50
0
66.01
Monomer
Aggregates
46.53
56.29
51.54
79.35
0.03
18.**
36.75
Waste
0.0
20.0
40.0
60.0
80.0
min

FIG. 4B


Binding Protein 23
S200 16 60 TrisAb 4024 10ESV4001:10 UV
S200 16 60 TrisAb 4024 10ESV4001:10 Fractions
S200 16 60 TrisAb 4024 10ESV4001:10 Inject
mAU
40.0
30.0
20.0
10.0
0.0
67.39
Monomer
Aggregates
47.39
56.95
0.16
25.05
30.73
91
Waste
0.0
20.0
40.0
60.0
80.0
ml

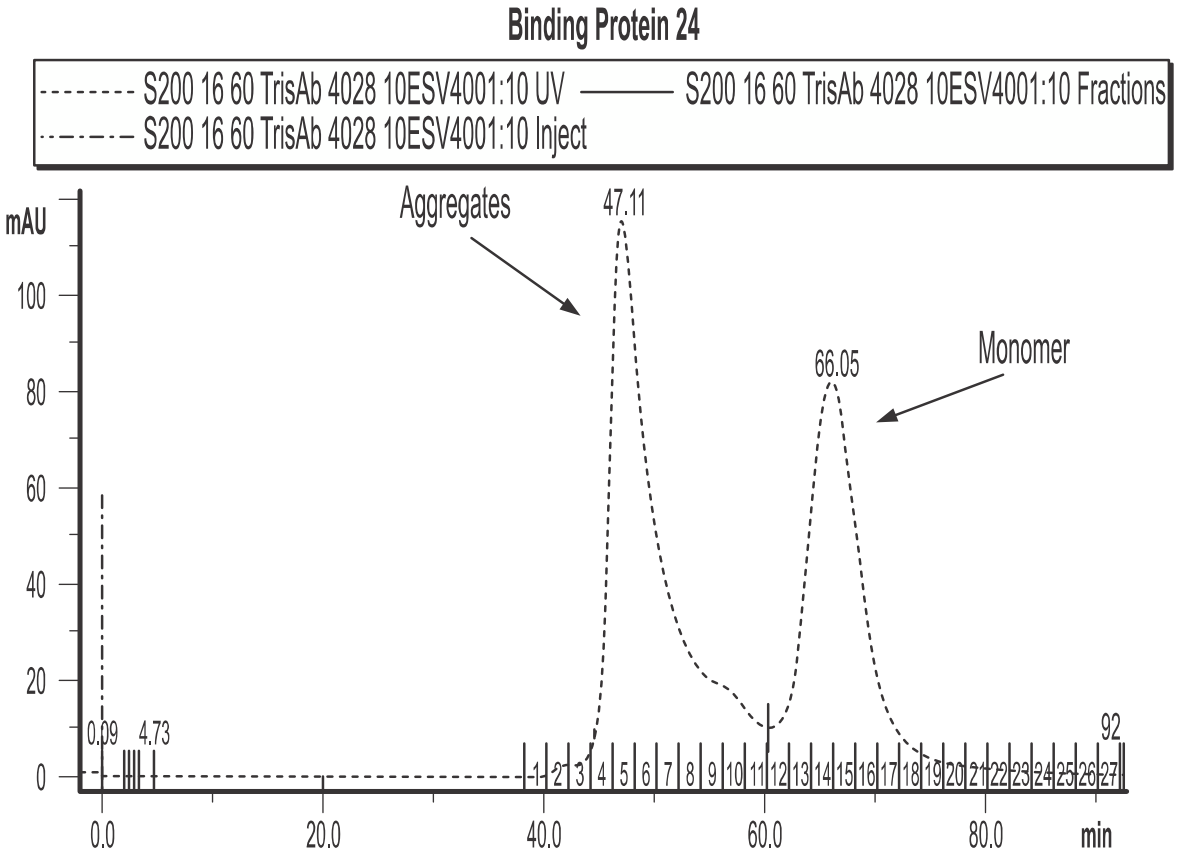

Binding Protein 24
S200 16 60 TrisAb 4028 10ESV4001:10 UV
S200 16 60 TrisAb 4028 10ESV4001:10 Fractions
S200 16 60 TrisAb 4028 10ESV4001:10 Inject
mAU
100
80
60
40
20
0
Aggregates
47.11
Monomer
66.05
0.09
4.73
92
0.0
20.0
40.0
60.0
80.0
min

FIG. 4B (Cont.)

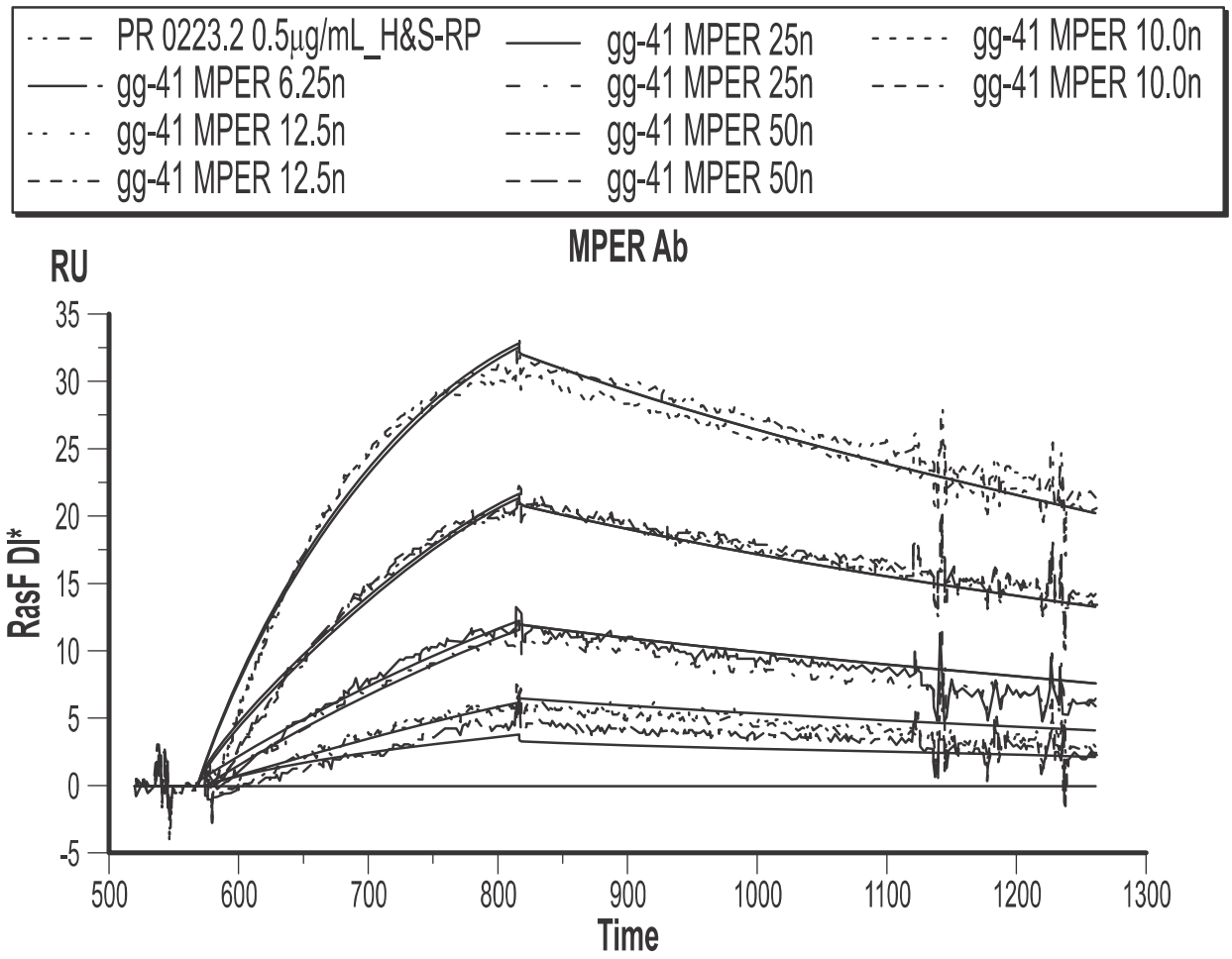
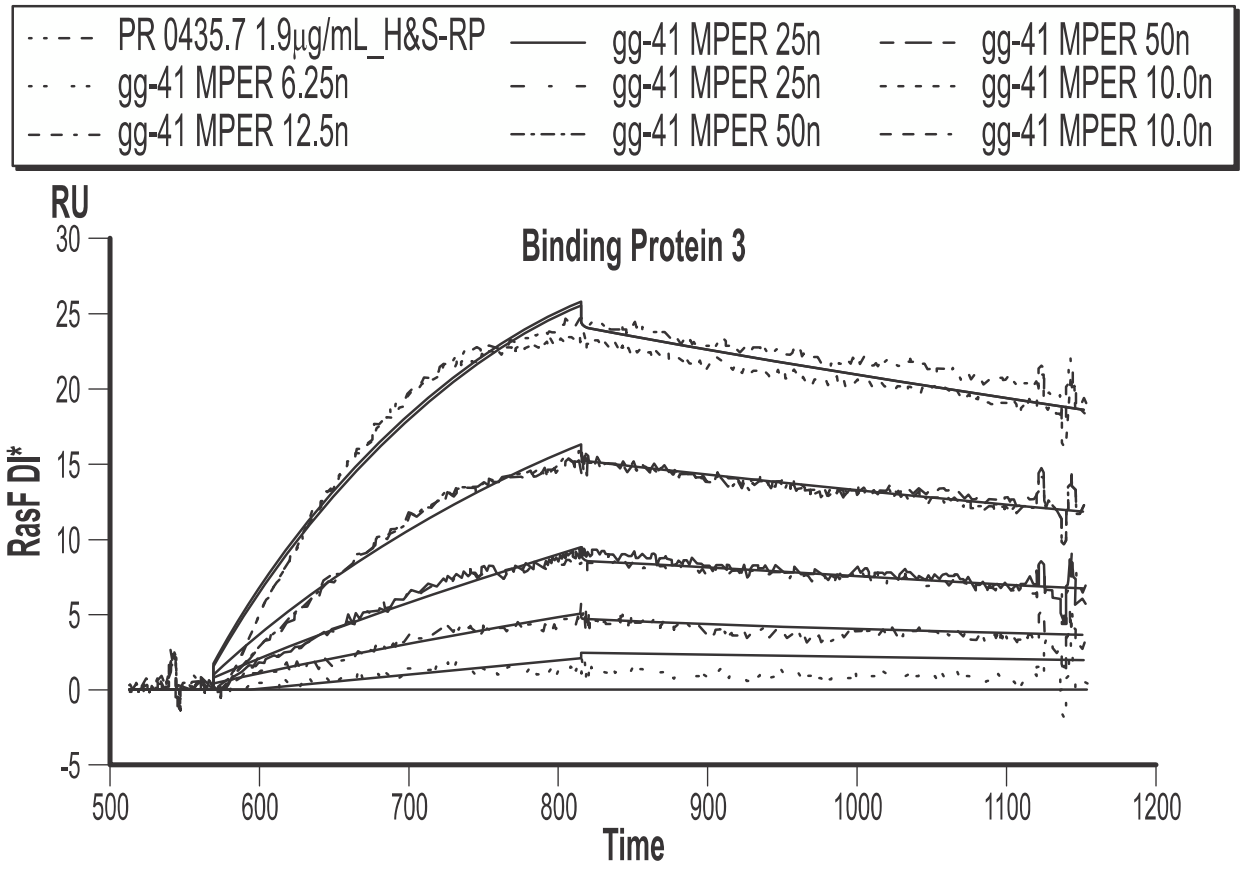

PR 0223.2 0.5µg/mL_H&S-RP
gg-41 MPER 6.25n
gg-41 MPER 12.5n
gg-41 MPER 12.5n
gg-41 MPER 25n
gg-41 MPER 25n
gg-41 MPER 50n
gg-41 MPER 50n
gg-41 MPER 10.0n
gg-41 MPER 10.0n
MPER Ab
RU
RasF DI*
Time
35
30
25
20
15
10
5
0
-5
500
600
700
800
900
1000
1100
1200
1300
PR 0425.6 2µg/mL_H&S-RP
gg-41 MPER 6.25n
gg-41 MPER 6.25n
gg-41 MPER 12.5n
gg-41 MPER 12.5n
gg-41 MPER 25n
gg-41 MPER 25n
gg-41 MPER 50n
gg-41 MPER 50n
gg-41 MPER 10.0n
gg-41 MPER 10.0n
Binding Protein 2
RU
RasF DI*
Time
30
25
20
15
10
5
0
-5
500
600
700
800
900
1000
1100
1200

FIG. 5


PR 0435.7 1.9µg/mL_H&S-RP
gg-41 MPER 6.25n
gg-41 MPER 12.5n
gg-41 MPER 25n
gg-41 MPER 25n
gg-41 MPER 50n
gg-41 MPER 50n
gg-41 MPER 10.0n
gg-41 MPER 10.0n
RU
Binding Protein 3
RasF DI*
Time
30
25
20
15
10
5
0
-5
500
600
700
800
900
1000
1100
1200

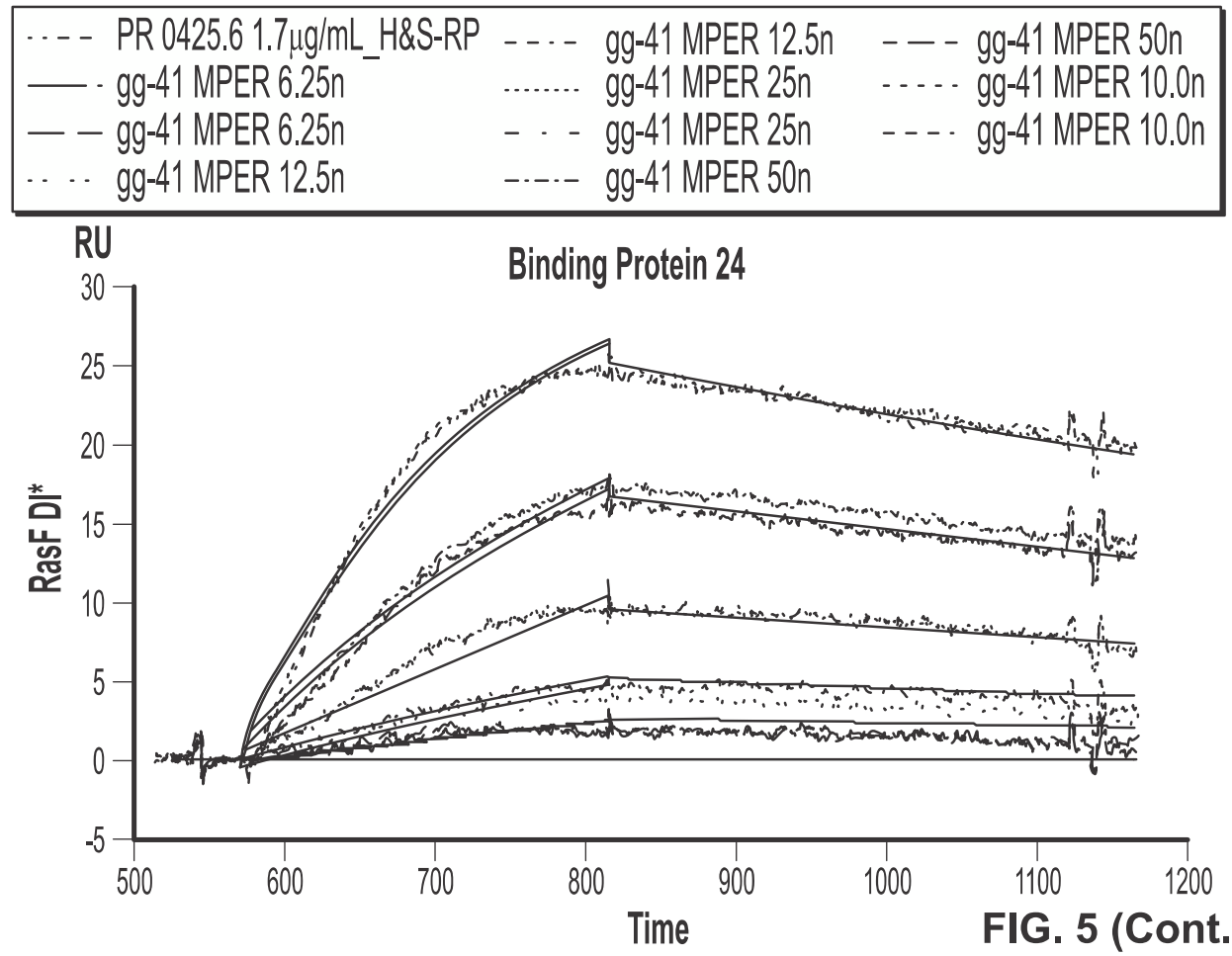

PR 0425.6 1.7µg/mL_H&S-RP
gg-41 MPER 6.25n
gg-41 MPER 6.25n
gg-41 MPER 12.5n
gg-41 MPER 12.5n
gg-41 MPER 25n
gg-41 MPER 25n
gg-41 MPER 50n
gg-41 MPER 50n
gg-41 MPER 10.0n
gg-41 MPER 10.0n
RU
Binding Protein 24
RasF DI*
Time
30
25
20
15
10
5
0
-5
500
600
700
800
900
1000
1100
1200

FIG. 5 (Cont.)

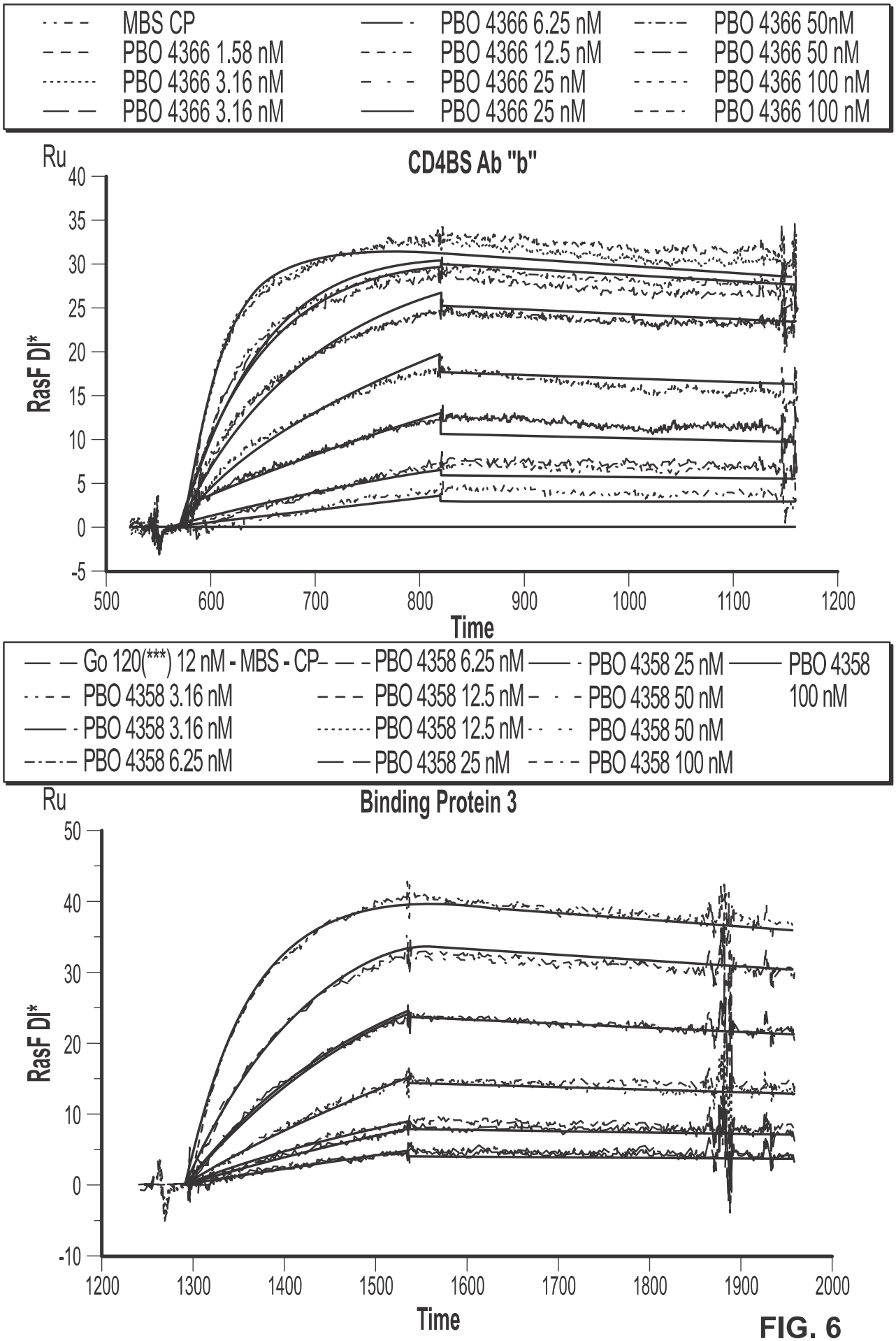
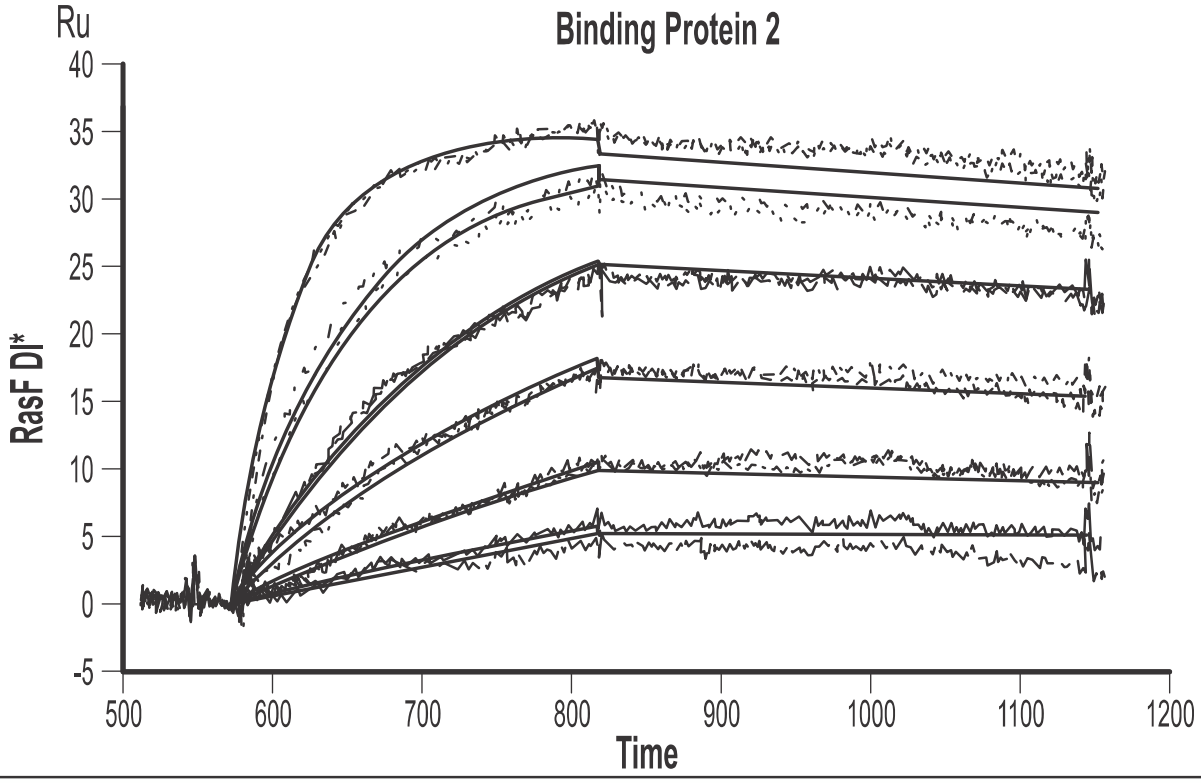
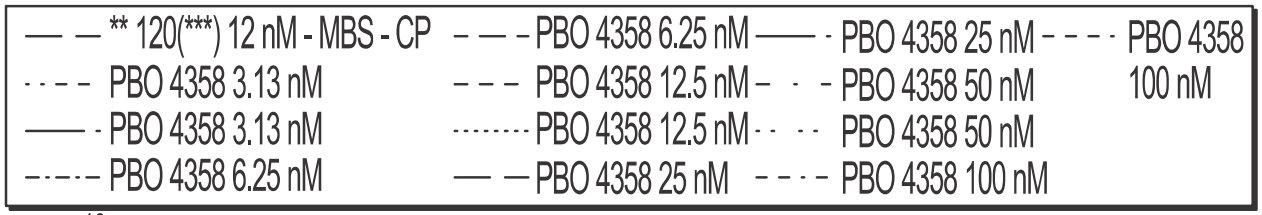

MBS CP
PBO 4366 1.58 nM
PBO 4366 3.16 nM
PBO 4366 3.16 nM
PBO 4366 6.25 nM
PBO 4366 12.5 nM
PBO 4366 25 nM
PBO 4366 25 nM
PBO 4366 50nM
PBO 4366 50 nM
PBO 4366 100 nM
PBO 4366 100 nM
Ru
CD4BS Ab "b"
RasF DI*
Time
Go 120(***) 12 nM - MBS - CP
PBO 4358 3.16 nM
PBO 4358 3.16 nM
PBO 4358 6.25 nM
PBO 4358 6.25 nM
PBO 4358 12.5 nM
PBO 4358 12.5 nM
PBO 4358 25 nM
PBO 4358 25 nM
PBO 4358 50 nM
PBO 4358 50 nM
PBO 4358 100 nM
PBO 4358 100 nM
Ru
Binding Protein 3
RasF DI*
Time

FIG. 6

*** 12 nM - MBS - CP
PBO 4356 6.25 nM
PBO 4356 12.5 nM
PBO 4356 25 nM
PBO 4356 30 nM
PBO 4356 100 nM
PBO 4356 3.13 nM
PBO 4356 3.13 nM
PBO 4356 6.25 nM
PBO 4356 12.5 nM
PBO 4356 25 nM
PBO 4356 30 nM
PBO 4356 100 nM


Ru
Binding Protein 2
RasF DI*
Time
40
35
30
25
20
15
10
5
0
-5
500
600
700
800
900
1000
1100
1200


** 120(***) 12 nM - MBS - CP
PBO 4358 6.25 nM
PBO 4358 12.5 nM
PBO 4358 25 nM
PBO 4358 50 nM
PBO 4358 100 nM
PBO 4358 3.13 nM
PBO 4358 3.13 nM
PBO 4358 6.25 nM
PBO 4358 12.5 nM
PBO 4358 25 nM
PBO 4358 50 nM
PBO 4358 100 nM

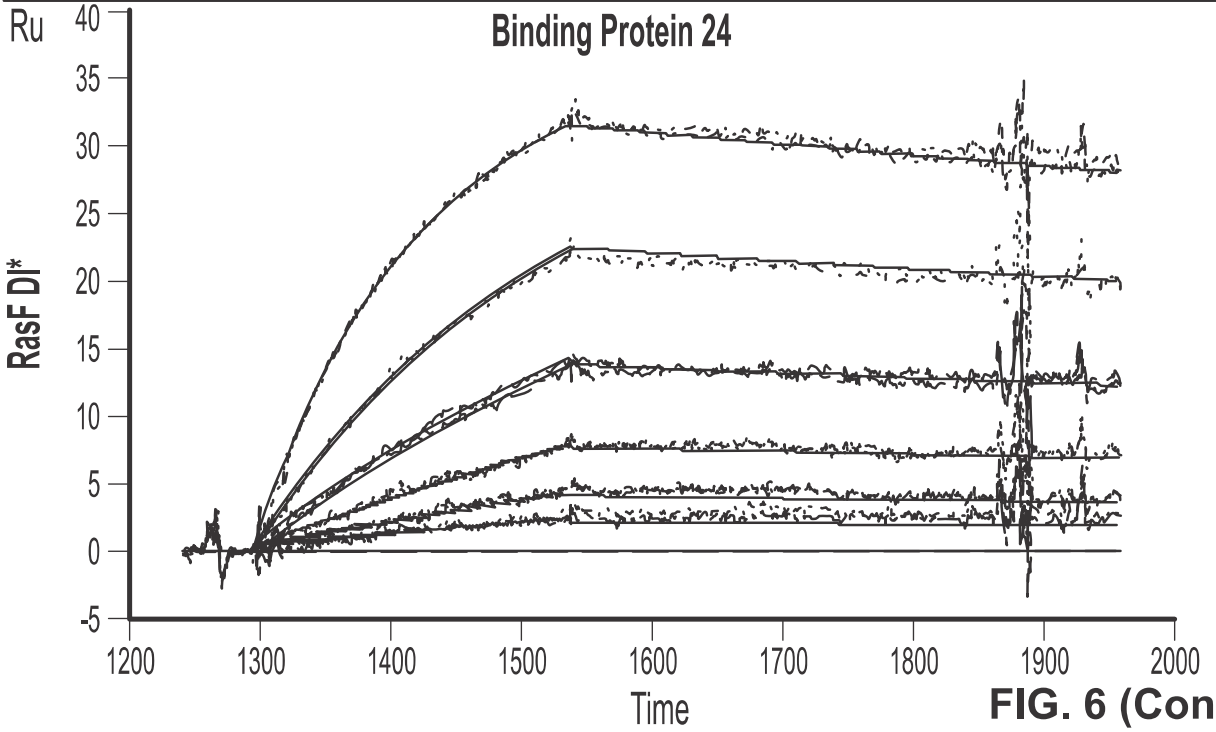

Ru
Binding Protein 24
RasF DI*
Time
40
35
30
25
20
15
10
5
0
-5
1200
1300
1400
1500
1600
1700
1800
1900
2000

FIG. 6 (Cont.)

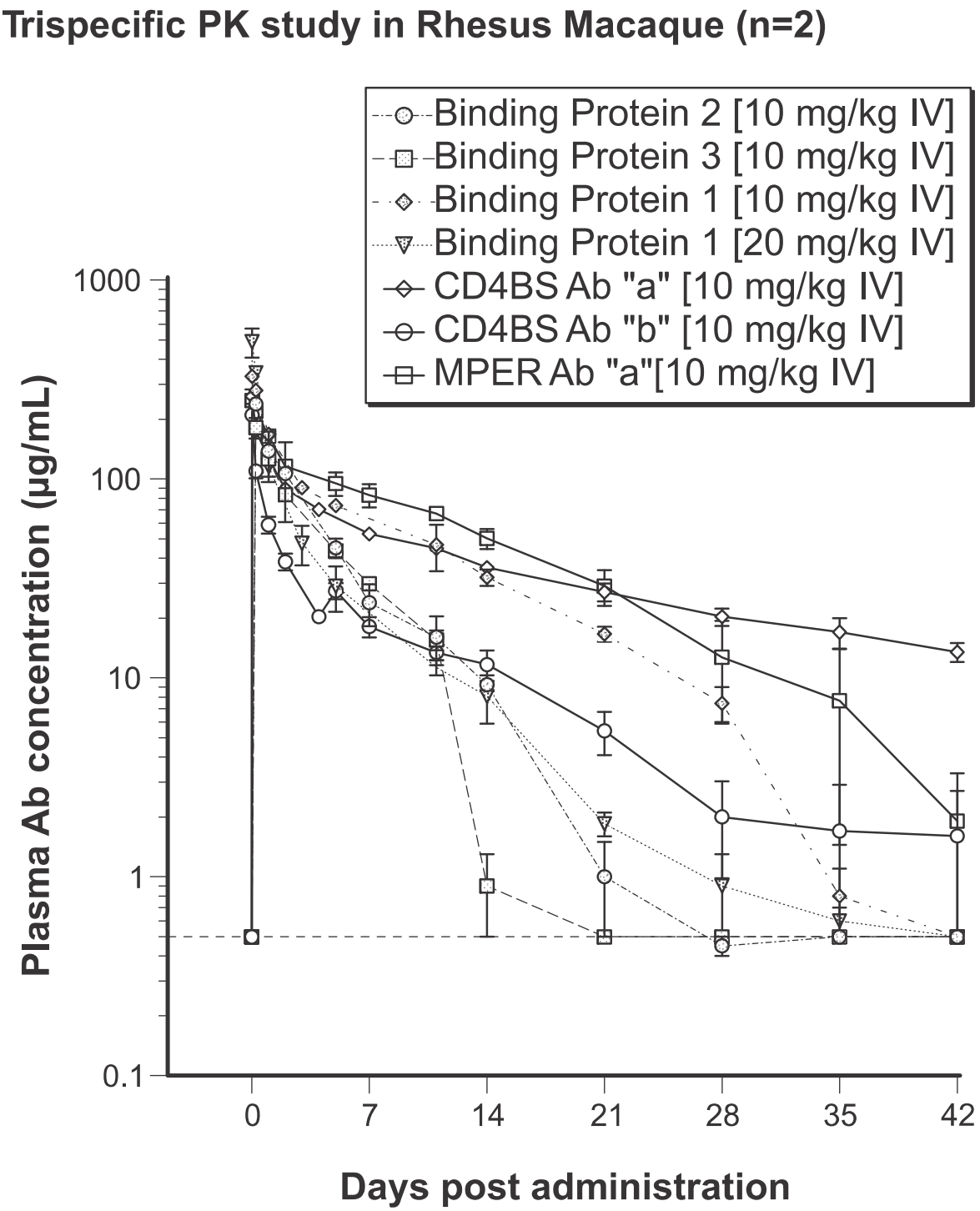
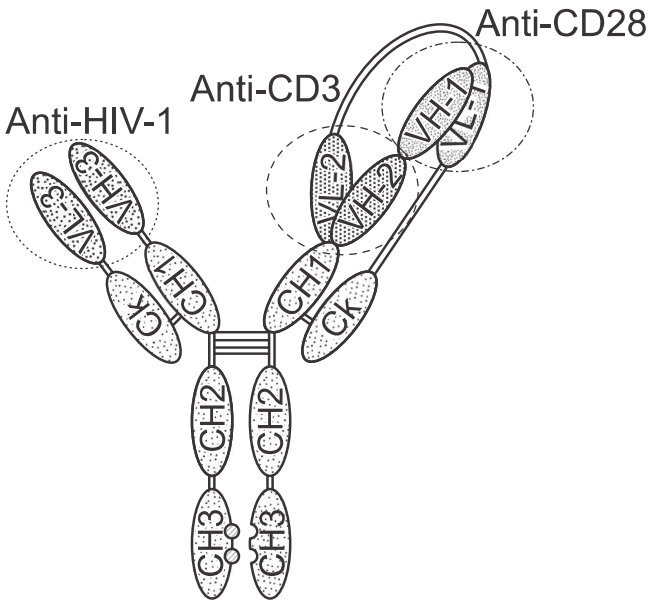
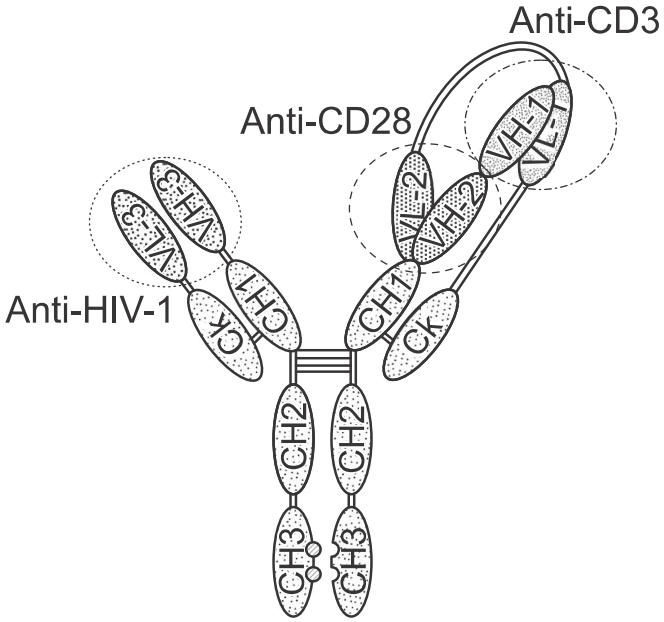

Trispecific PK study in Rhesus Macaque (n=2)
Binding Protein 2 [10 mg/kg IV]
Binding Protein 3 [10 mg/kg IV]
Binding Protein 1 [10 mg/kg IV]
Binding Protein 1 [20 mg/kg IV]
CD4BS Ab "a" [10 mg/kg IV]
CD4BS Ab "b" [10 mg/kg IV]
MPER Ab "a"[10 mg/kg IV]
Plasma Ab concentration (µg/mL)
1000
100
10
1
0.1
0
7
14
21
28
35
42
Days post administration

FIG. 7



Format - Trispecific T Cell Engager

FIG. 8A



Format - Trispecific T Cell Engager

FIG. 8B

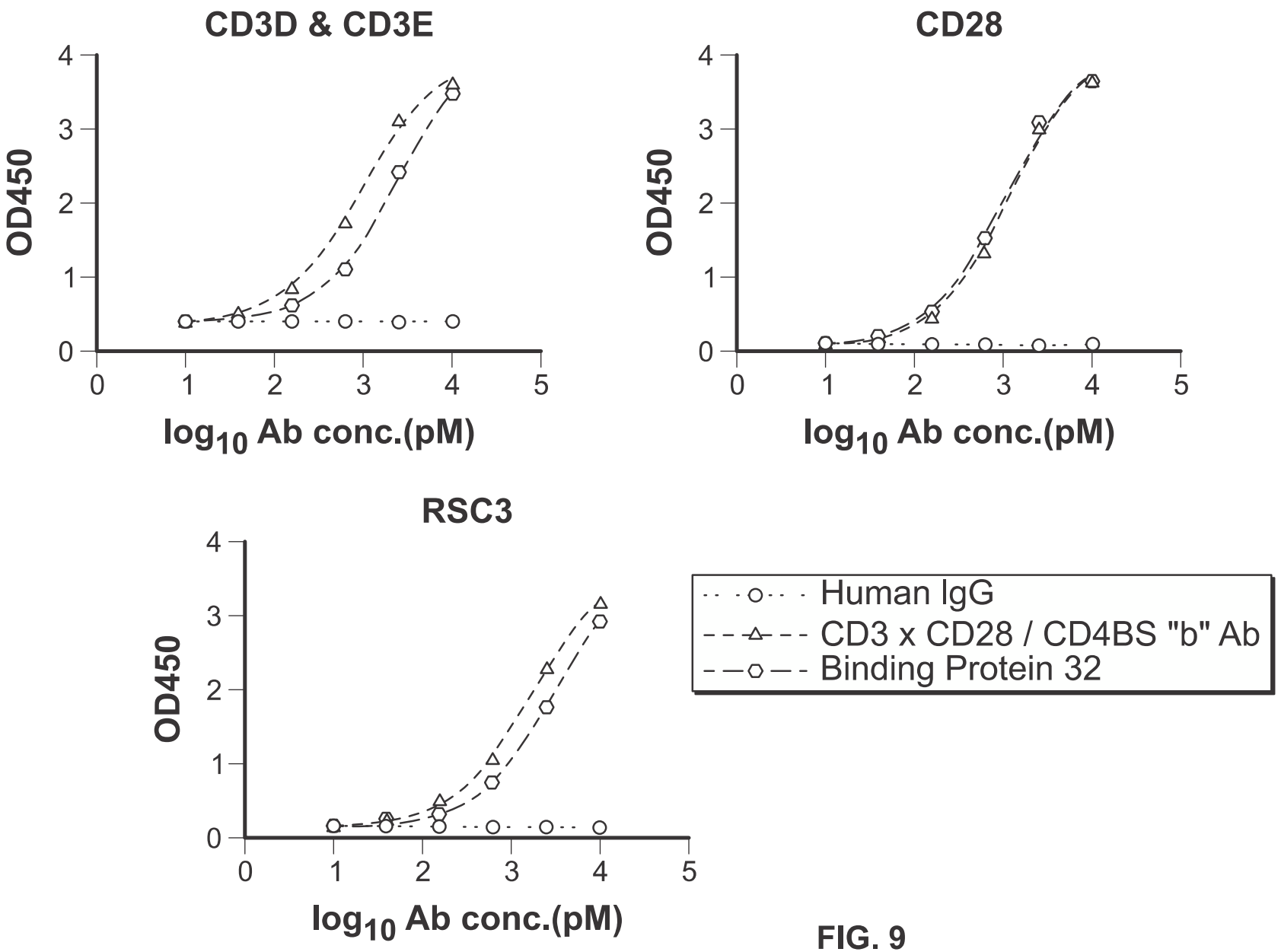

CD3D & CD3E
OD450
log10 Ab conc.(pM)
CD28
OD450
log10 Ab conc.(pM)
RSC3
OD450
log10 Ab conc.(pM)
Human IgG
CD3 x CD28 / CD4BS "b" Ab
Binding Protein 32

FIG. 9

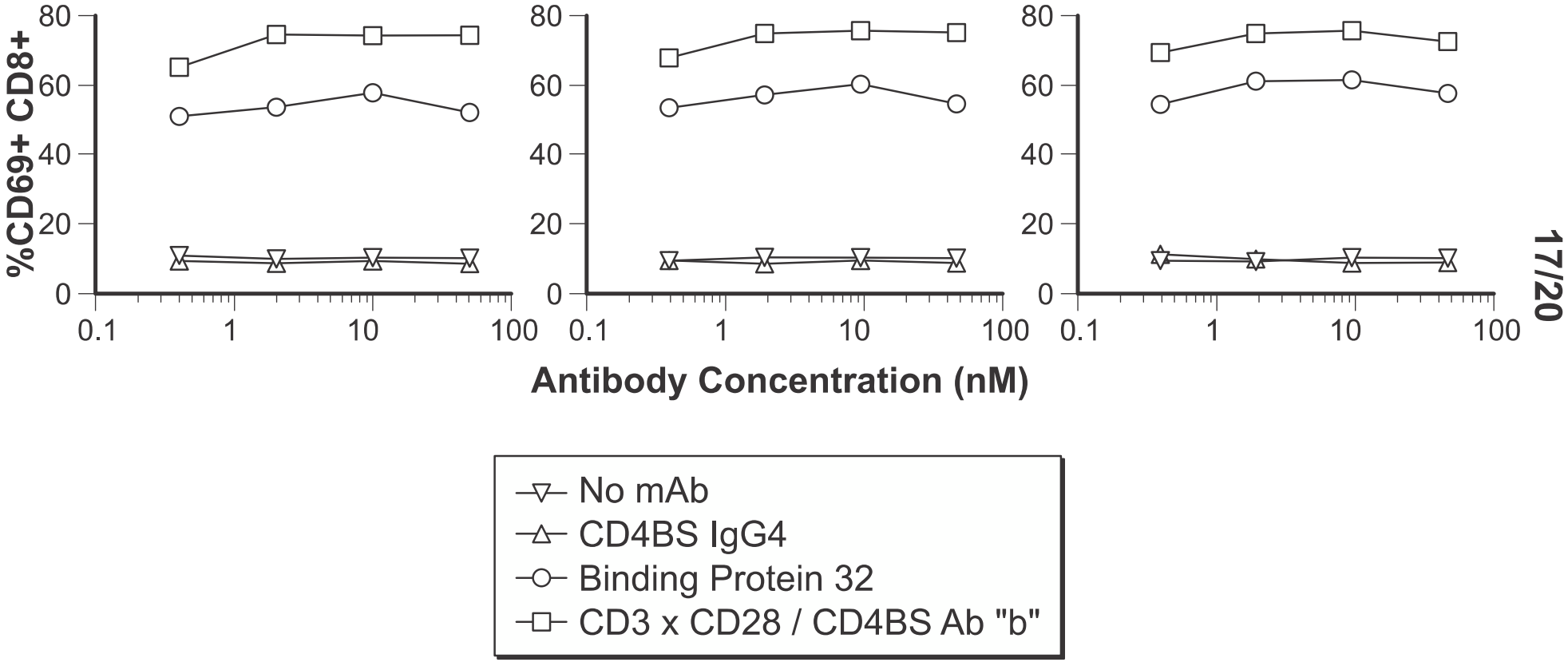

%CD69+ CD8+
80
60
40
20
0
0.1
1
10
100
Antibody Concentration (nM)
No mAb
CD4BS IgG4
Binding Protein 32
CD3 x CD28 / CD4BS Ab "b"

FIG. 10

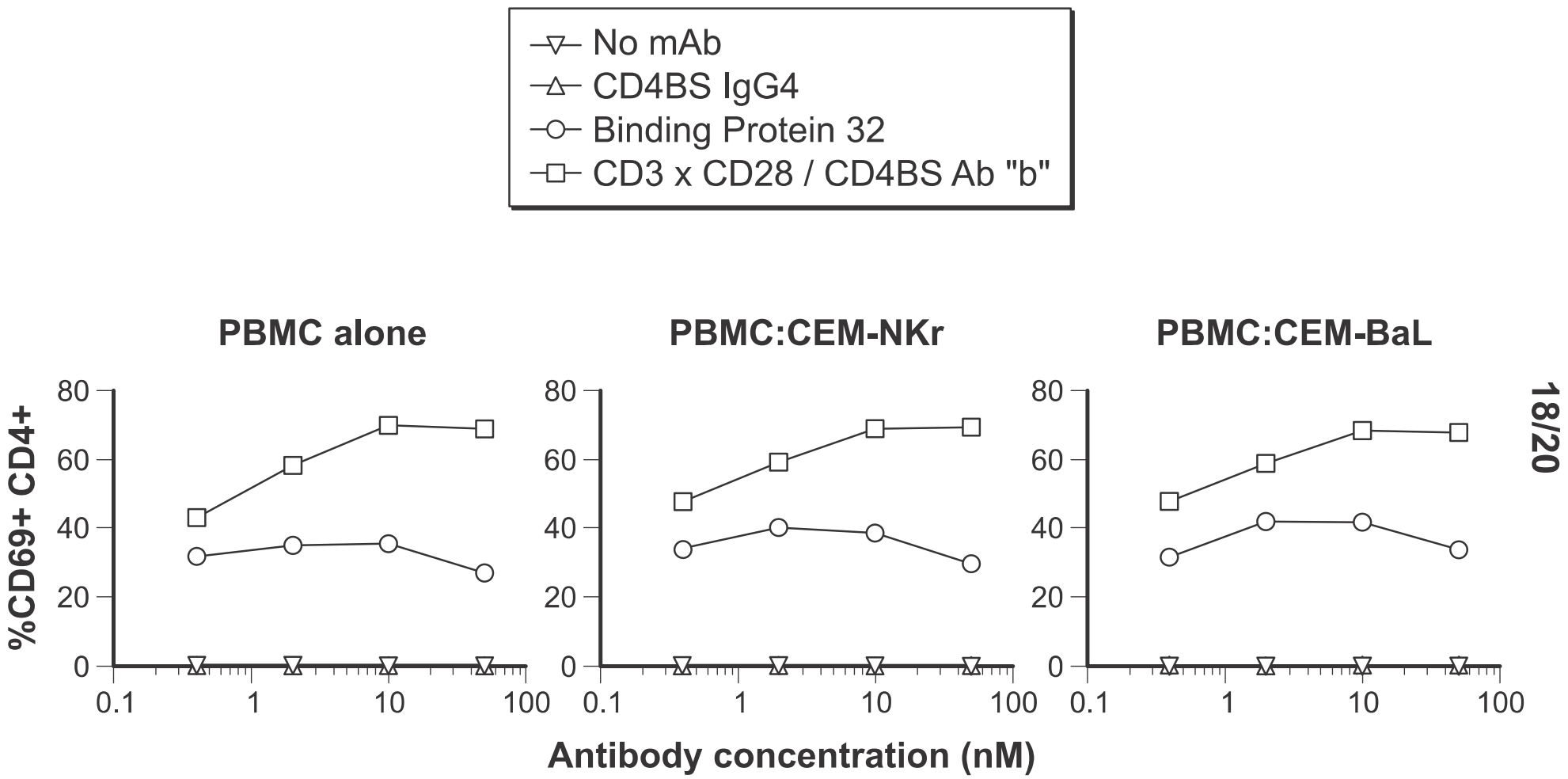

No mAb
CD4BS IgG4
Binding Protein 32
CD3 x CD28 / CD4BS Ab "b"
PBMC alone
PBMC:CEM-NKr
PBMC:CEM-BaL
%CD69+ CD4+
18/20
80
60
40
20
0
0.1
1
10
100
Antibody concentration (nM)

FIG. 11

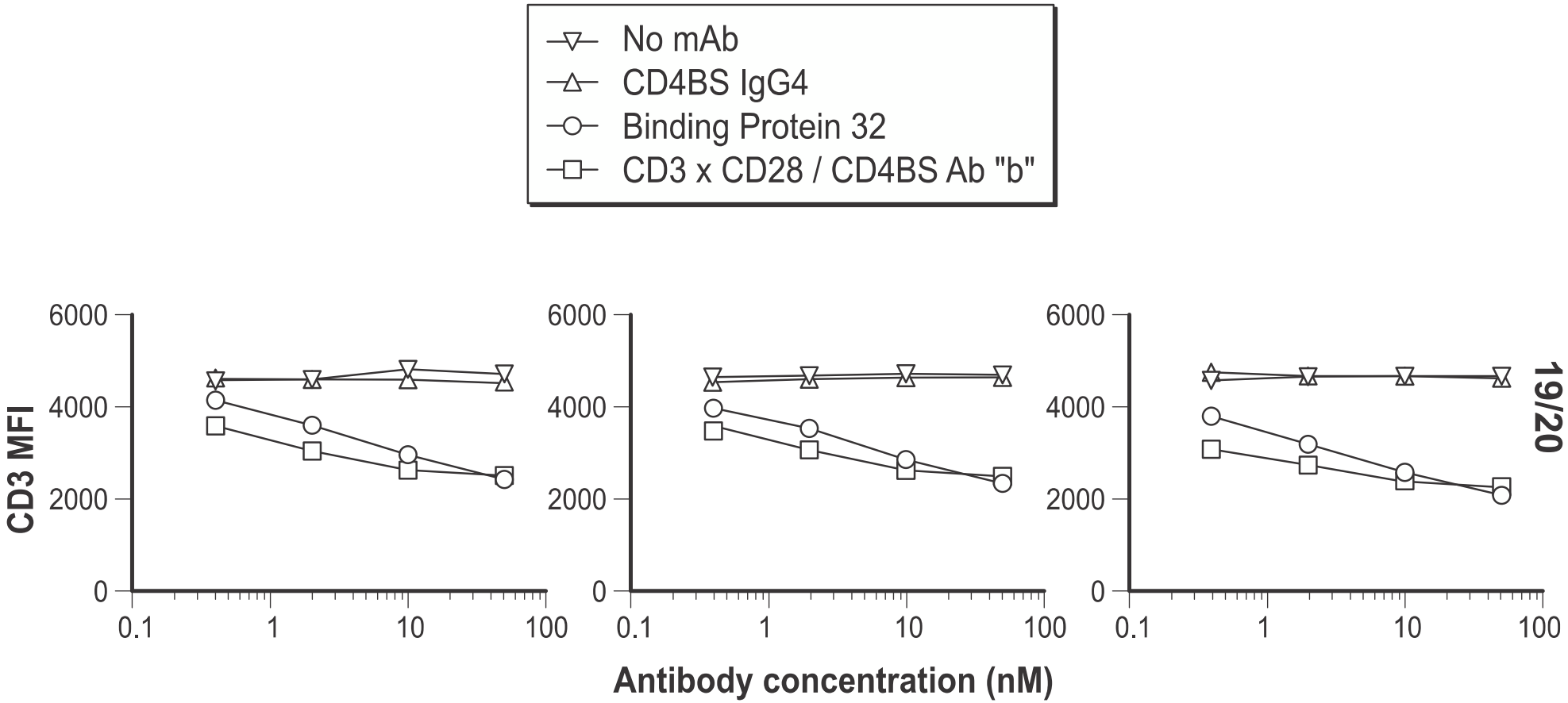

No mAb
CD4BS IgG4
Binding Protein 32
CD3 x CD28 / CD4BS Ab "b"
CD3 MFI
6000
4000
2000
0
0.1
1
10
100
19/20
Antibody concentration (nM)

FIG. 12

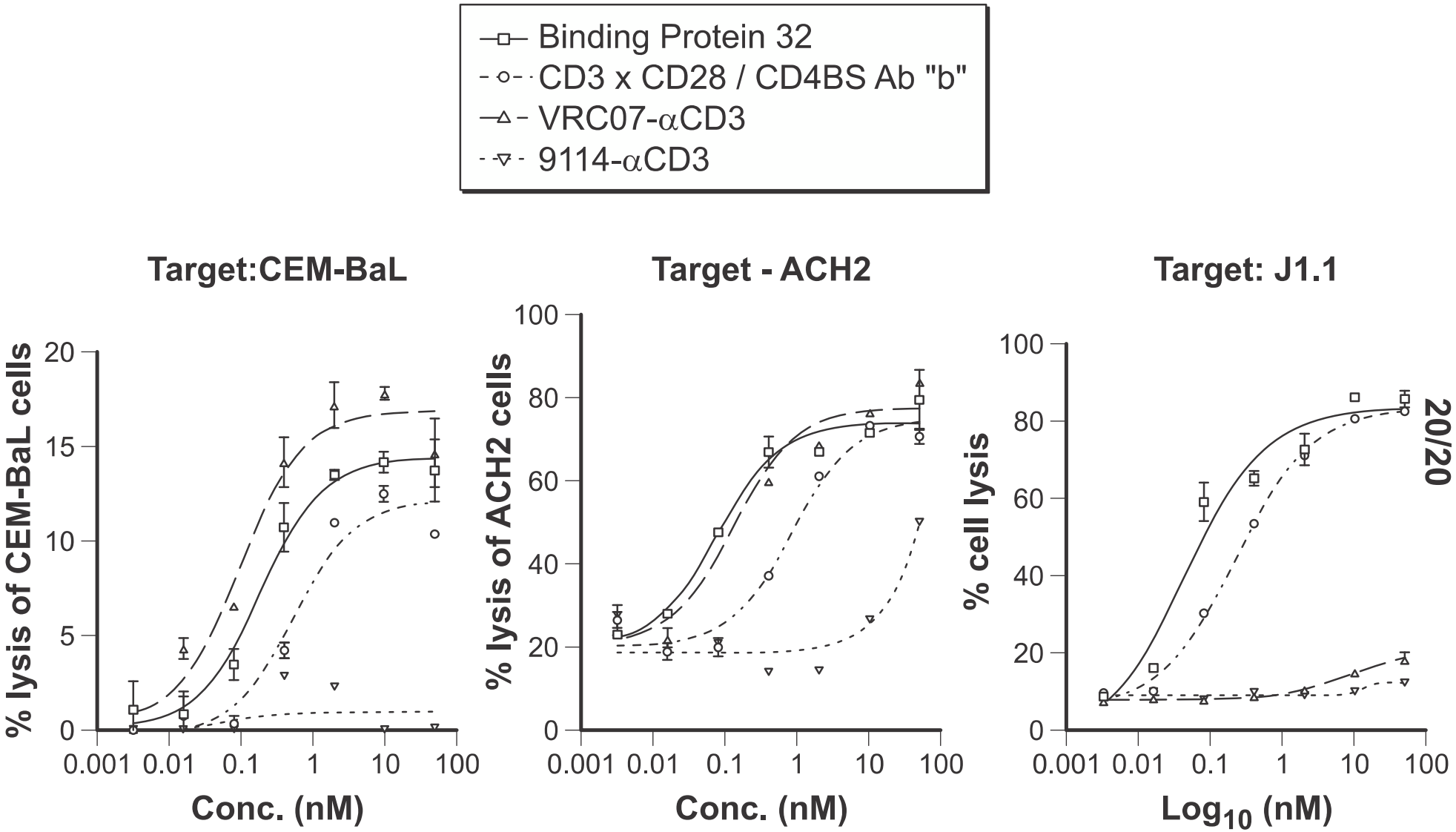


FIG. 13A

FIG. 13B

FIG. 13C