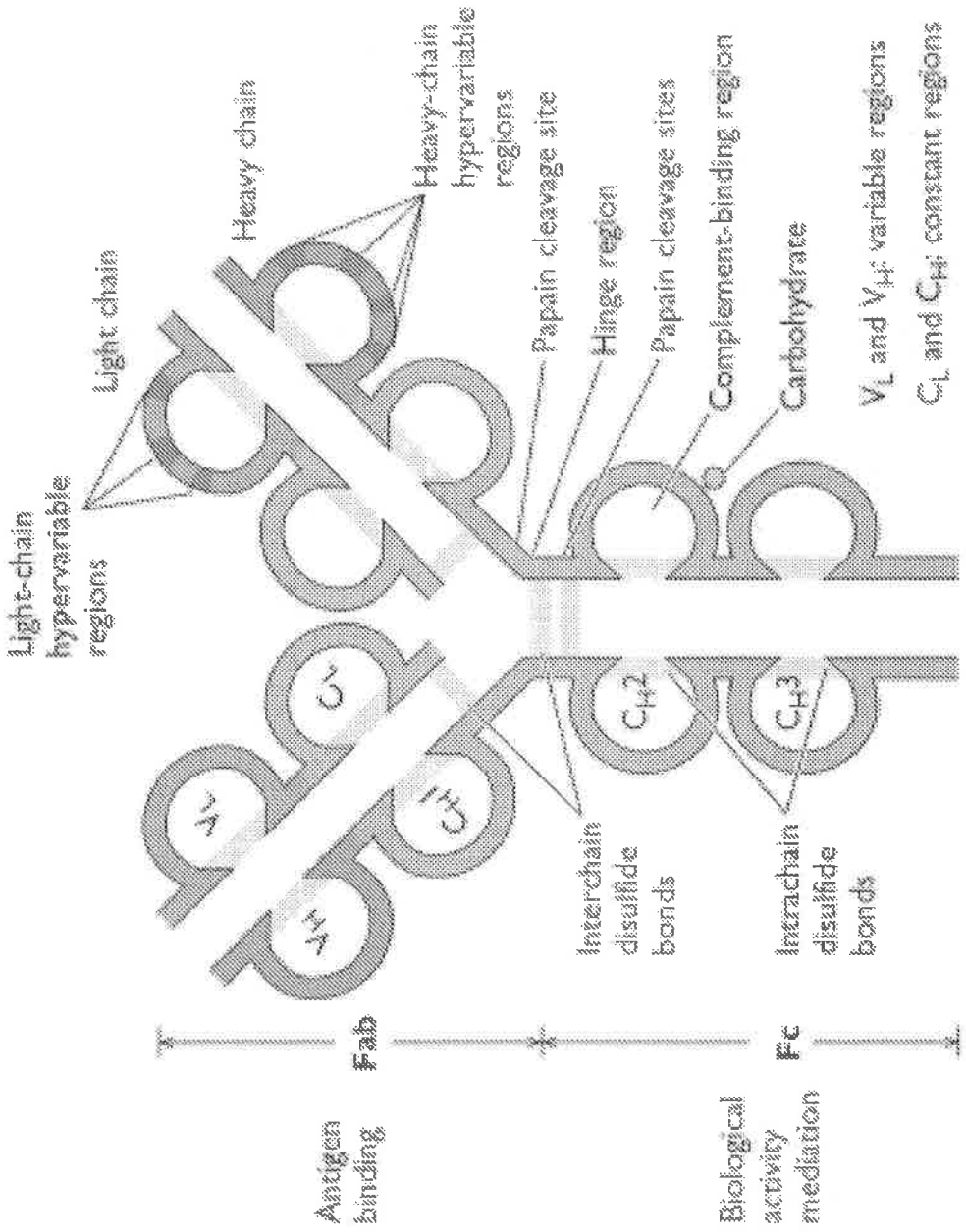

Light-chain hypervariable regions
Light chain
Heavy chain
Heavy-chain hypervariable regions
Papain cleavage site
Hinge region
Papain cleavage sites
Complement-binding region
Carbohydrate
V_L and V_H: variable regions
C_L and C_H: constant regions
Interchain disulfide bonds
Intrachain disulfide bonds
C_H2
C_H3
Fab
Fc
Antigen binding
Biological activity mediation

Figure 1

HA Binding Affinity K_D (pM) from ELISA					
H1	H3	H5	H7	H9	BSA
74	37200	101	32600	84	No

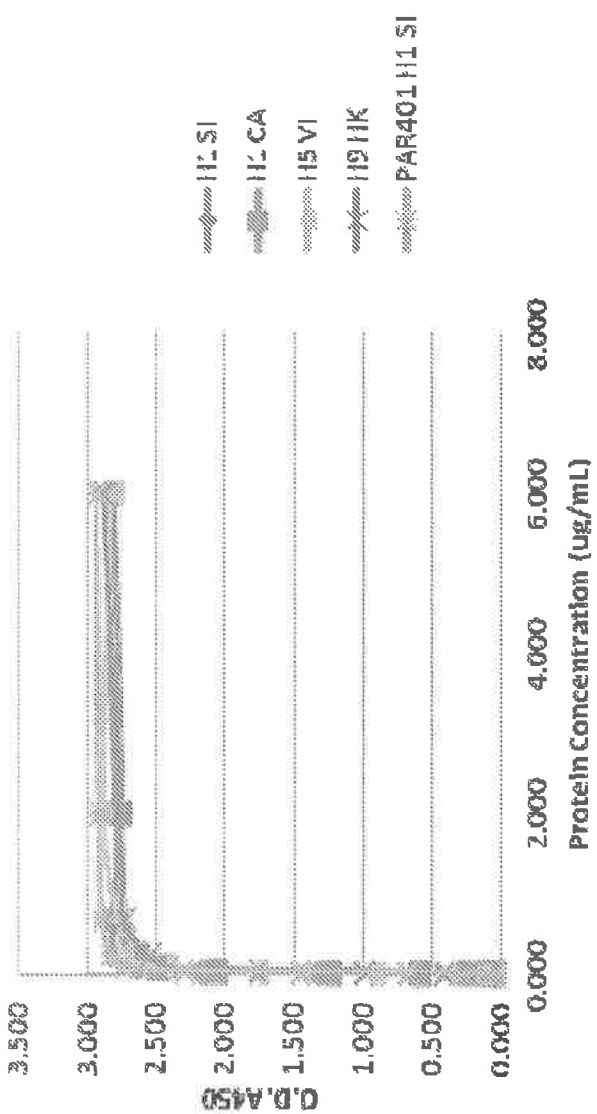


Figure 2A

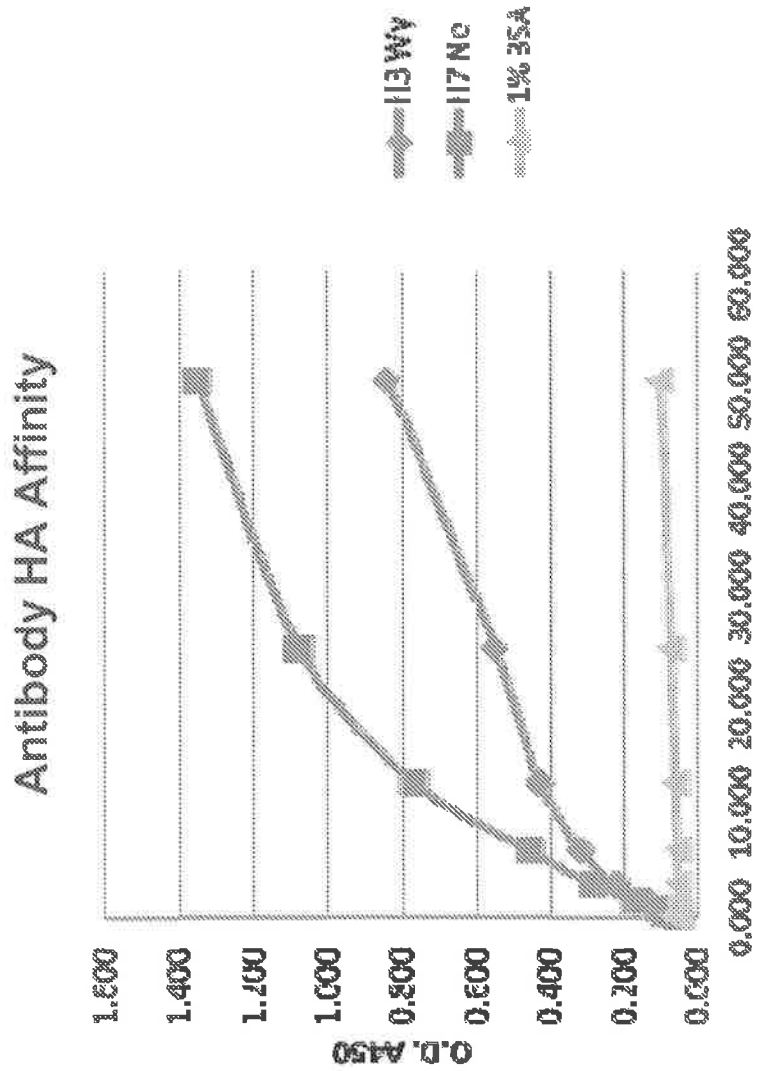

Antibody HA Affinity
O.D. A450
1.600
1.400
1.200
1.000
0.800
0.600
0.400
0.200
0.000
0.000 10.000 20.000 30.000 40.000 50.000 60.000
Protein Concentration (ug/mL)
113 Wt
117 No
1% 354

Figure 2B

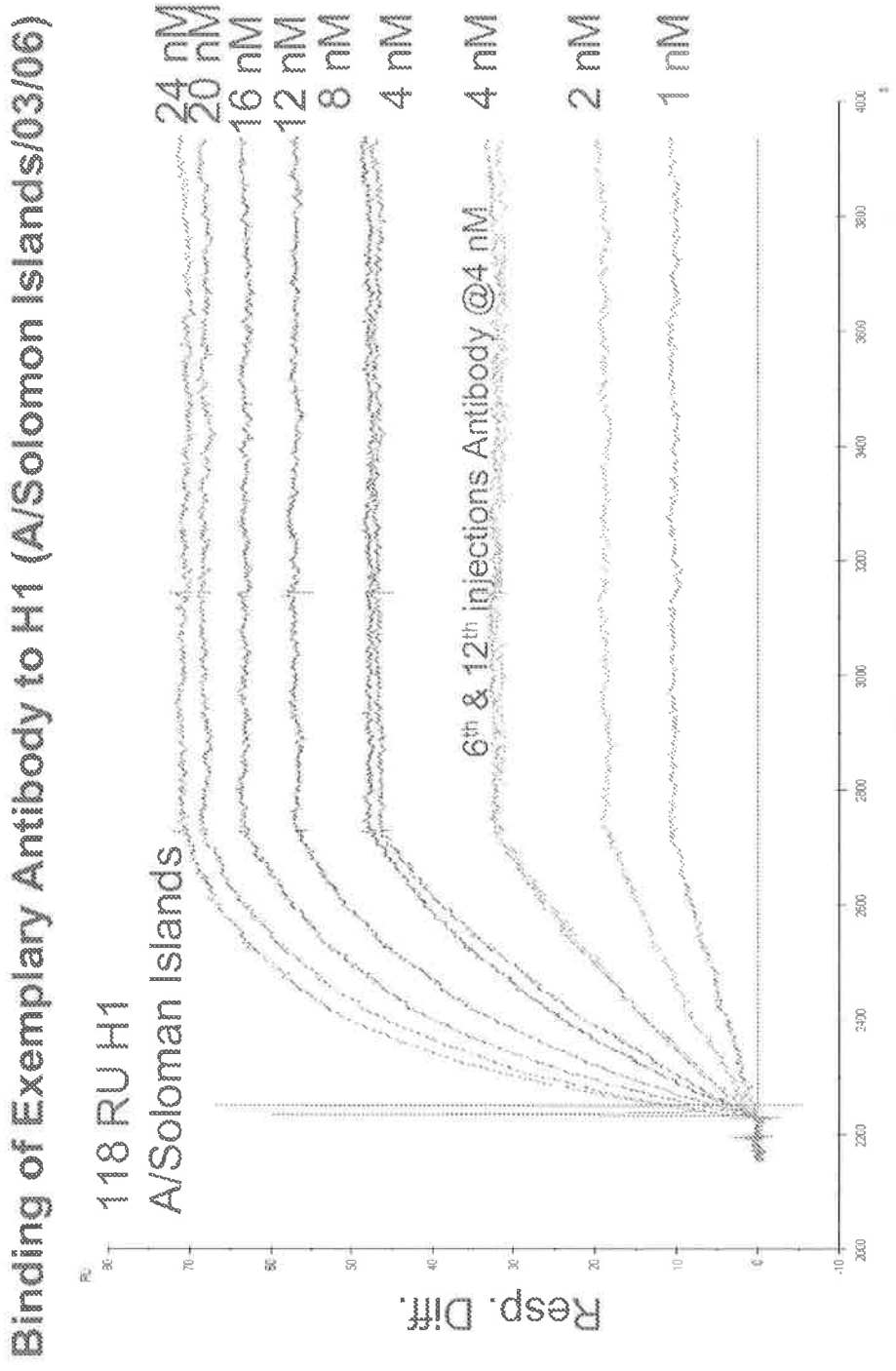

Binding of Exemplary Antibody to H1 (A/Solomon Islands/03/06)
118 RU H1
A/Soloman Islands
24 nM
20 nM
16 nM
12 nM
8 nM
4 nM
6th & 12th injections Antibody @4 nM
4 nM
2 nM
1 nM
Resp. Diff.
Time
K_a=2.97x10^{5}M^{-1}s^{-1}(±0.21%)

Figure 3A

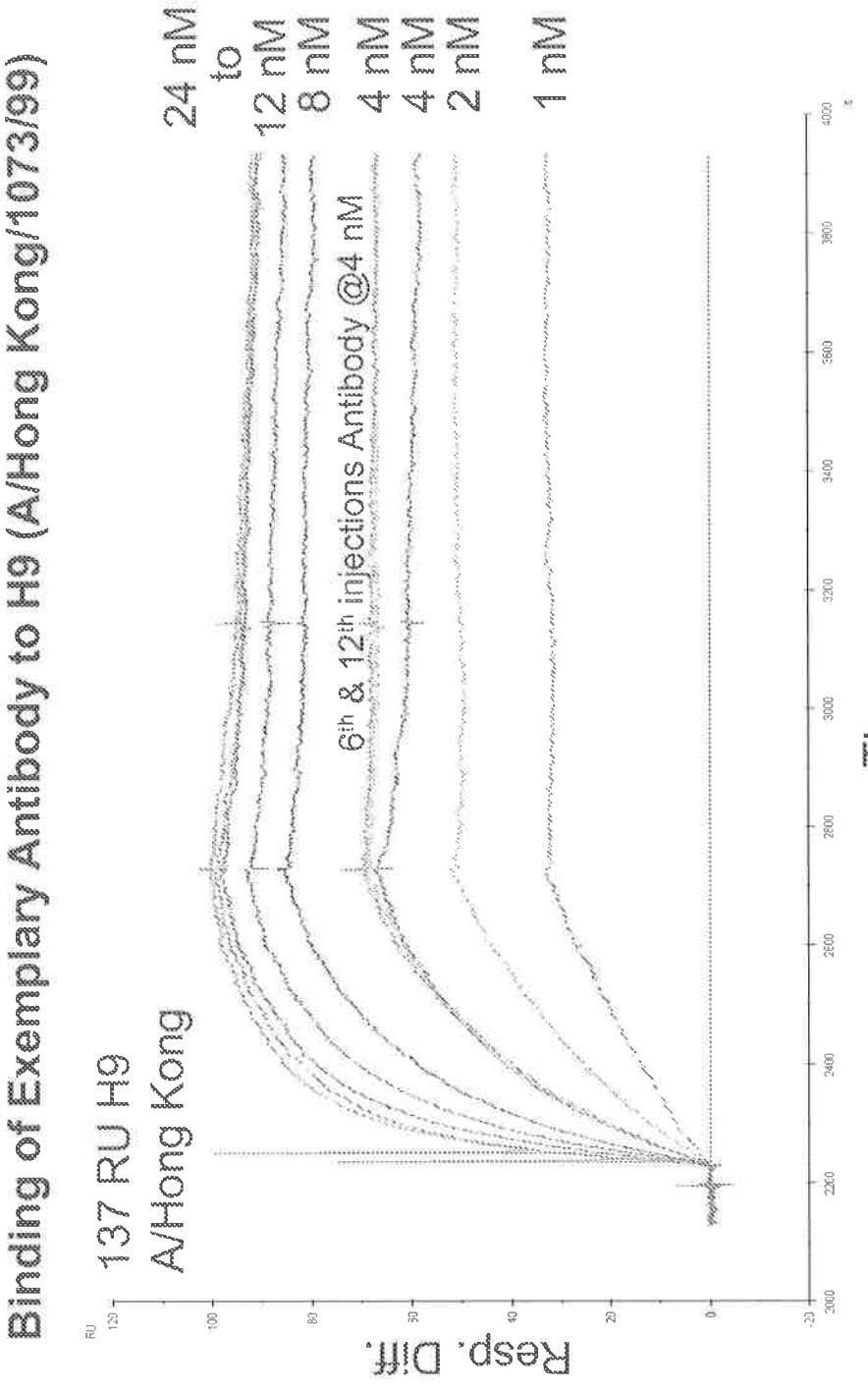

Binding of Exemplary Antibody to H9 (A/Hong Kong/1073/99)
137 RU H9
A/Hong Kong
24 nM to 12 nM
8 nM
4 nM
4 nM
2 nM
1 nM
6th & 12th injections Antibody @4 nM
Resp. Diff.
RU
Time
k_a=7.15x10^{5}M^{-1}s^{-1}(±0.23%)
k_d=5.10x10^{-5}s^{-1}(±1.18%)
K_D=71pM

Figure 3B

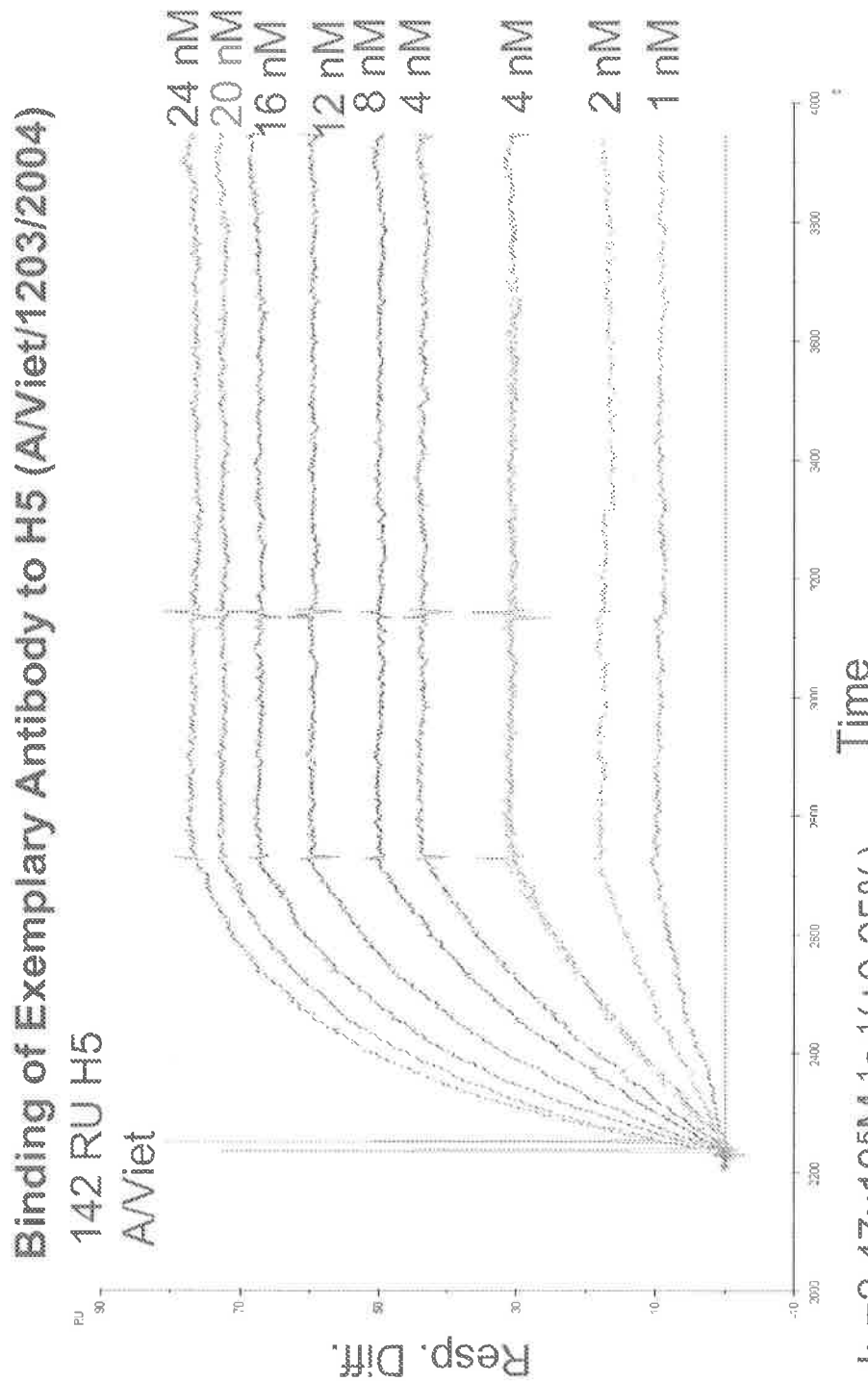

Binding of Exemplary Antibody to H5 (A/Viet/1203/2004)
142 RU H5
A/Viet
24 nM
20 nM
16 nM
12 nM
8 nM
4 nM
4 nM
2 nM
1 nM
Resp. Diff.
RU
Time
K_a=2.47x10^{5}M^{-1}s^{-1}(±0.25%)
K_d=7.38x10^{-6}s^{-1}(±3.73%)
K_D=30pM

Figure 3C

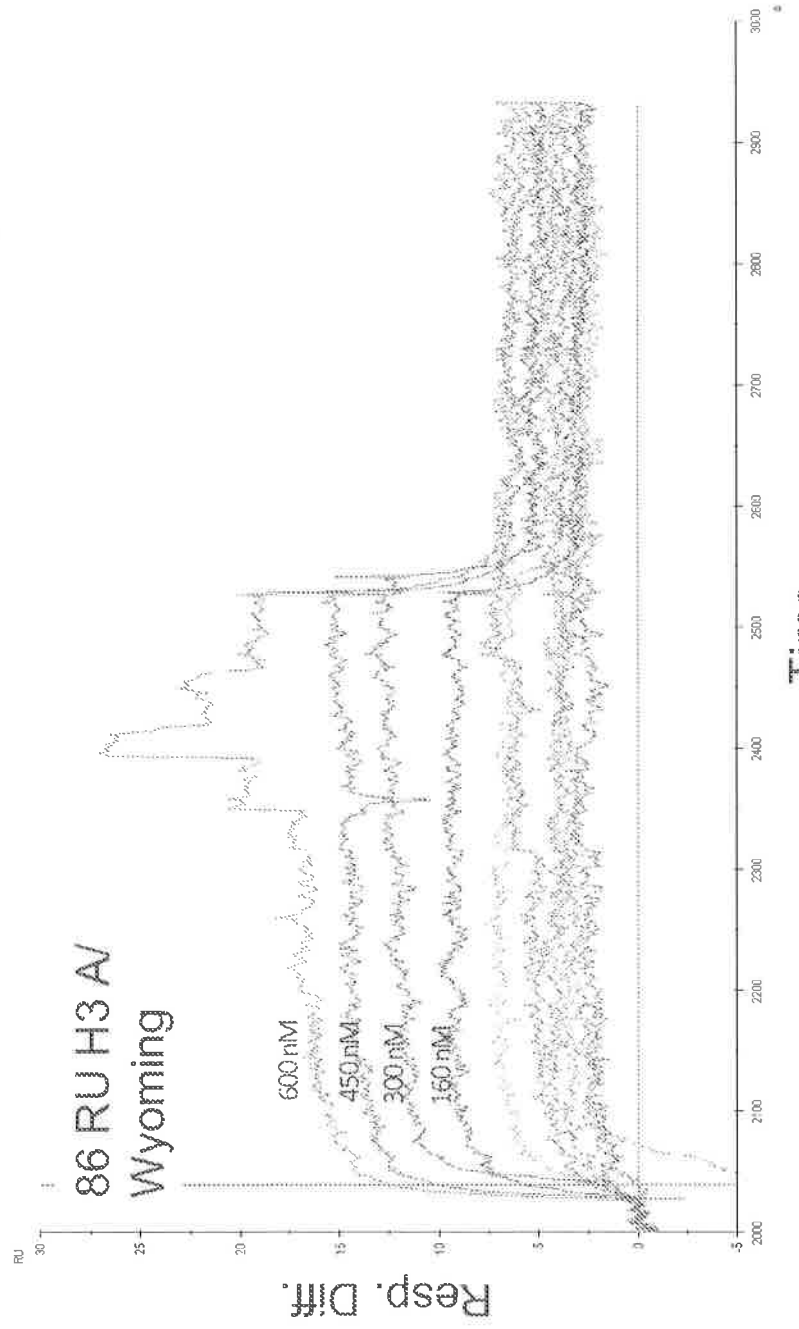

Binding of Exemplary Antibody to H3 (A/Wyoming)
86 RU H3 A/ Wyoming
600 nM
450nM
300 nM
150 nM
Resp. Diff.
RU
Time

Figure 3D

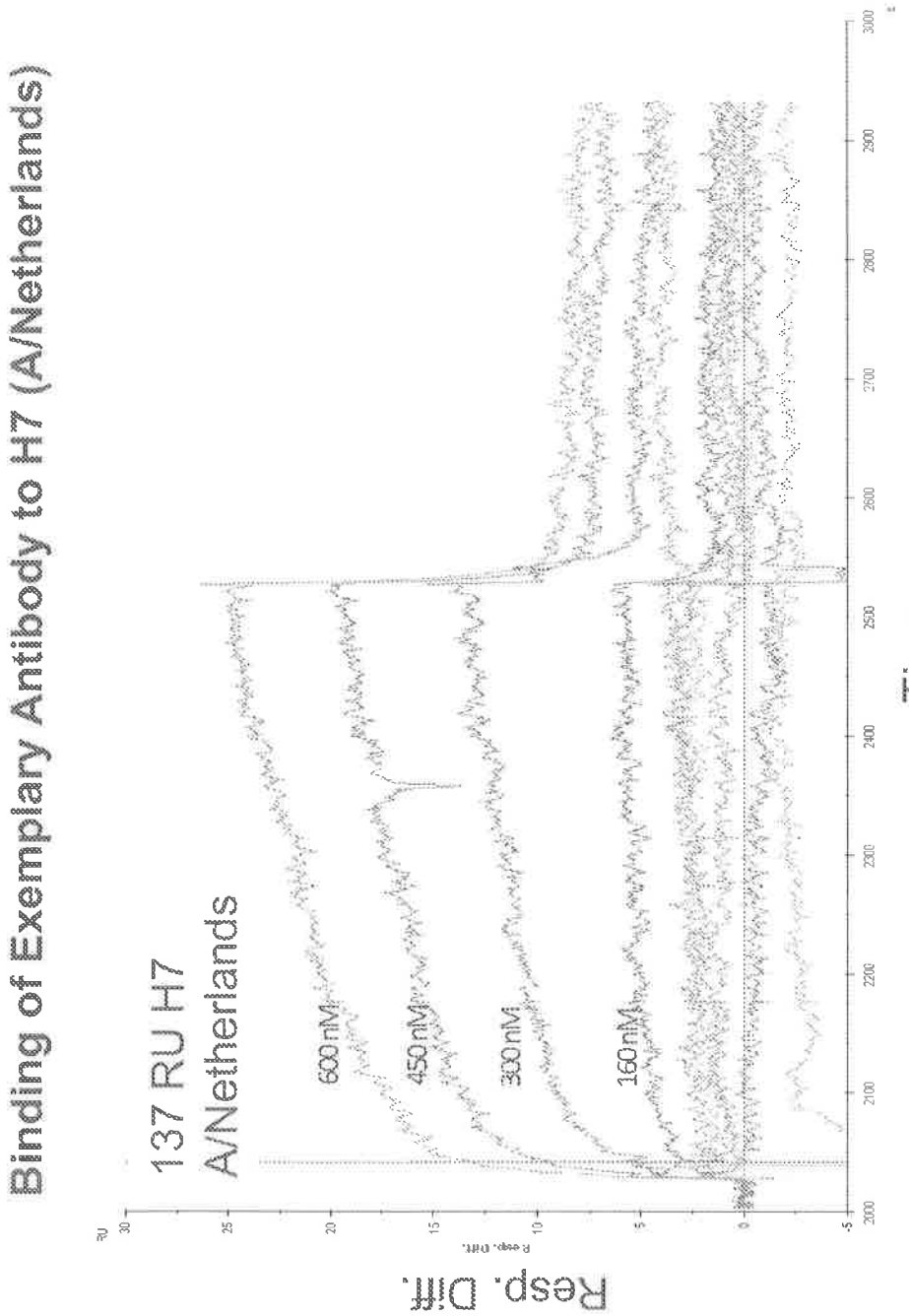

Binding of Exemplary Antibody to H7 (A/Netherlands)
137 RU H7
A/Netherlands
600 nM
450 nM
300 nM
160 nM
Resp. Diff.
Time

Figure 3E

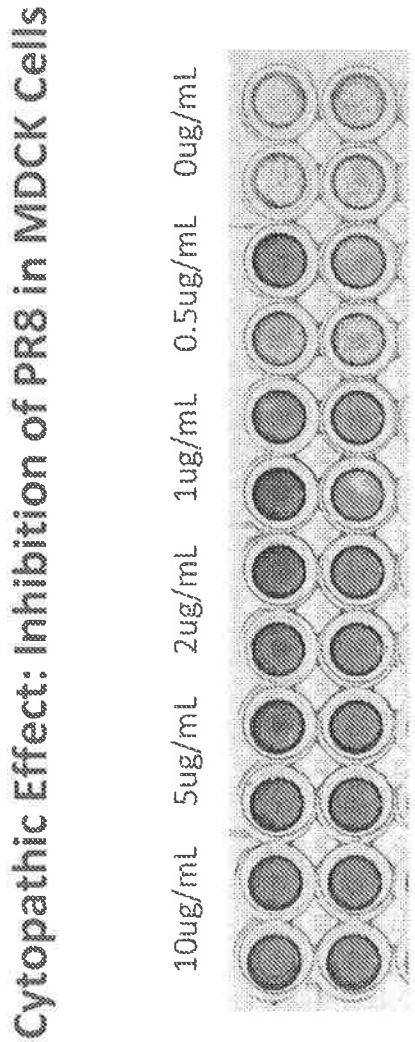

Cytopathic Effect: Inhibition of PR8 in MDCK Cells
10ug/mL
5ug/mL
2ug/mL
1ug/mL
0.5ug/mL
0ug/mL

Figure 4

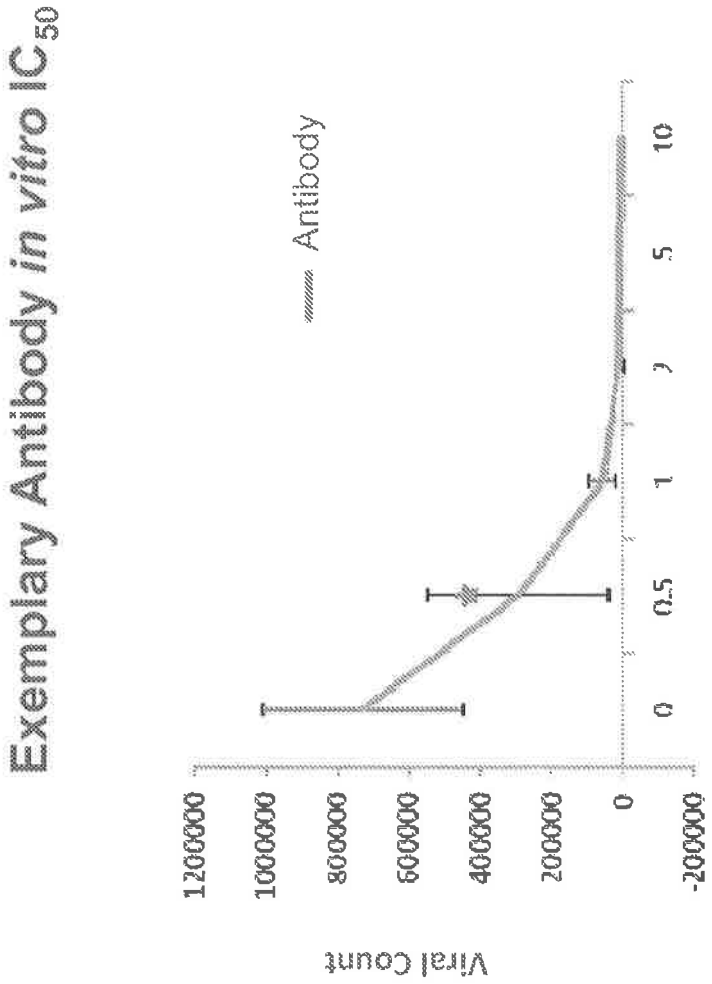

Exemplary Antibody in vitro IC50
Antibody
Viral Count
1200000
1000000
800000
600000
400000
200000
0
-200000
0
0.5
1
5
10
[Agent] (µg/mL)

Figure 5

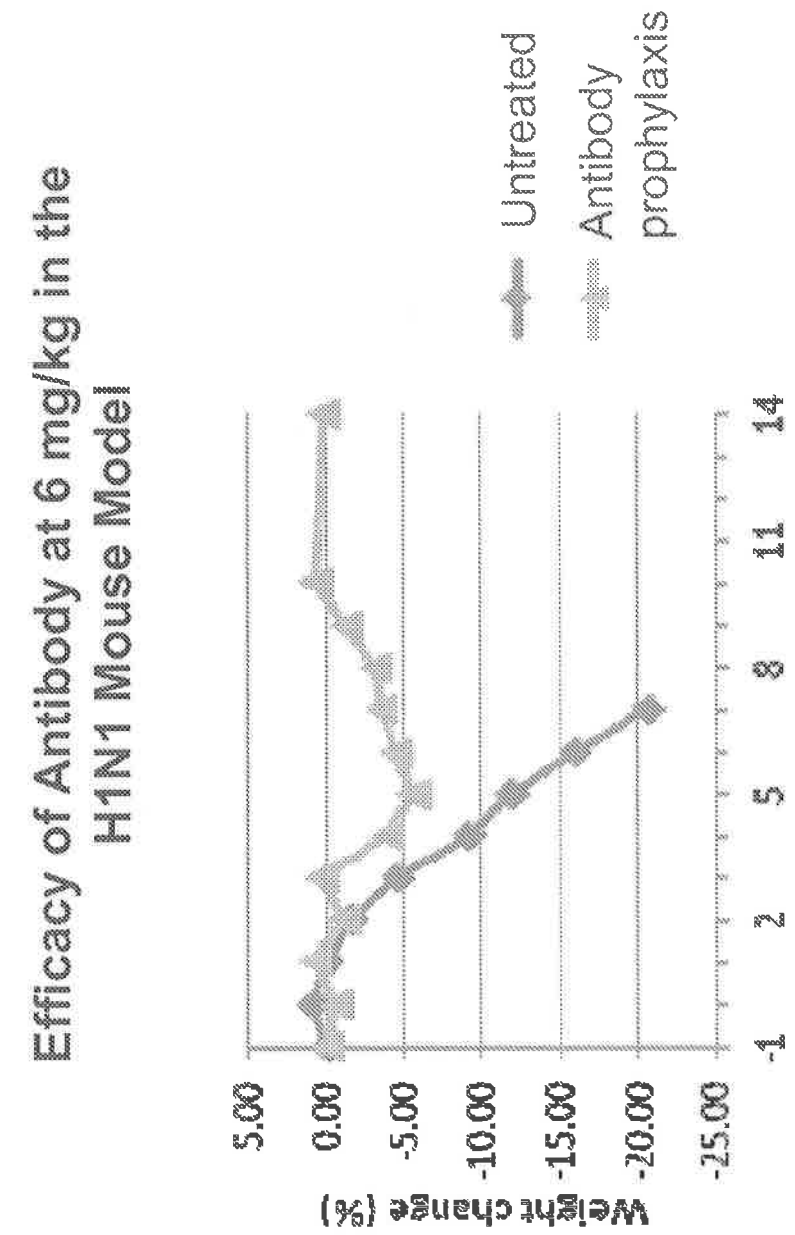

Efficacy of Antibody at 6 mg/kg in the H1N1 Mouse Model
Untreated
Antibody prophylaxis
Weight change (%)
5.00
0.00
-5.00
-10.00
-15.00
-20.00
-25.00
-1
2
5
8
11
14
Days post infection

Figure 6

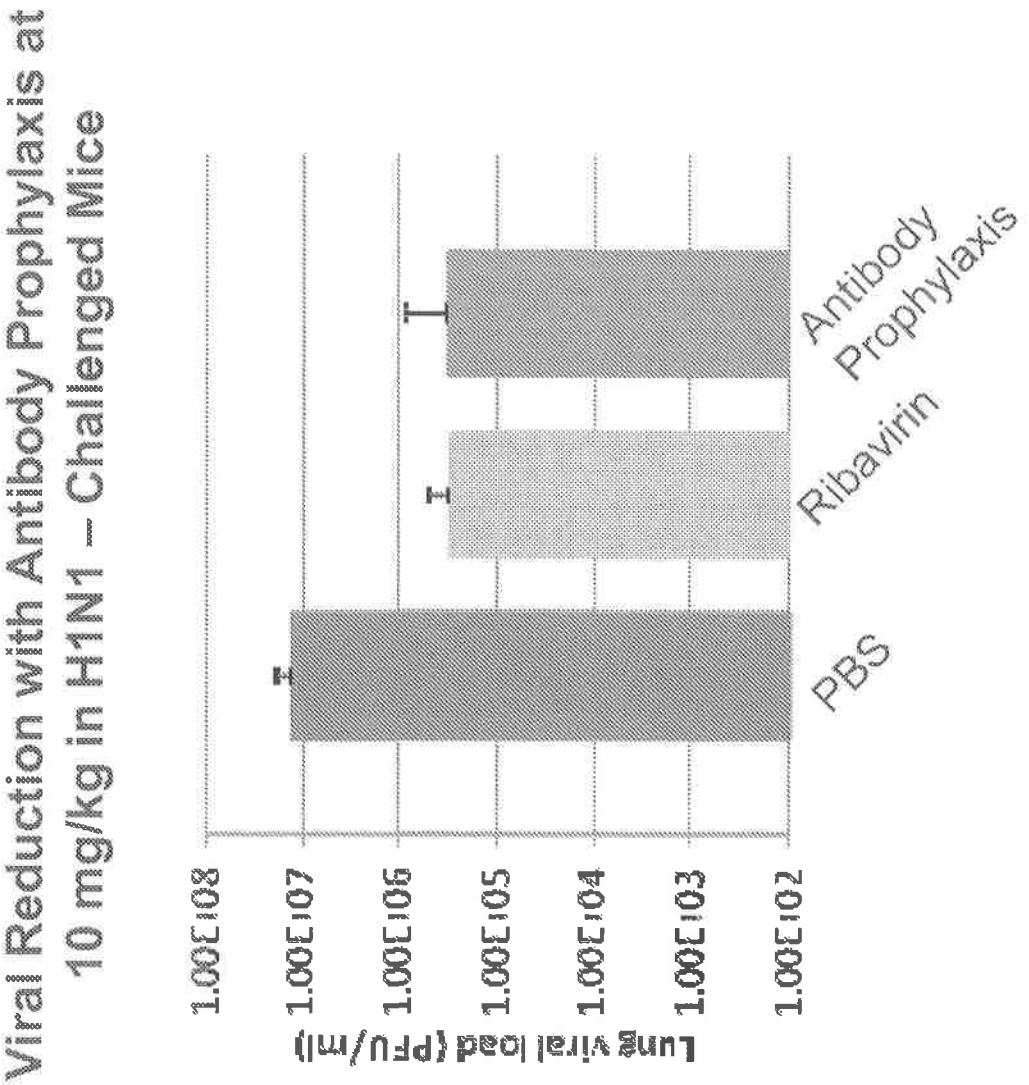

Viral Reduction with Antibody Prophylaxis at
10 mg/kg in H1N1 – Challenged Mice
Lung Viral load (PFU/ml)
1.00E+08
1.00E+07
1.00E+06
1.00E+05
1.00E+04
1.00E+03
1.00E+02
PBS
Ribavirin
Antibody
Prophylaxis

Figure 7

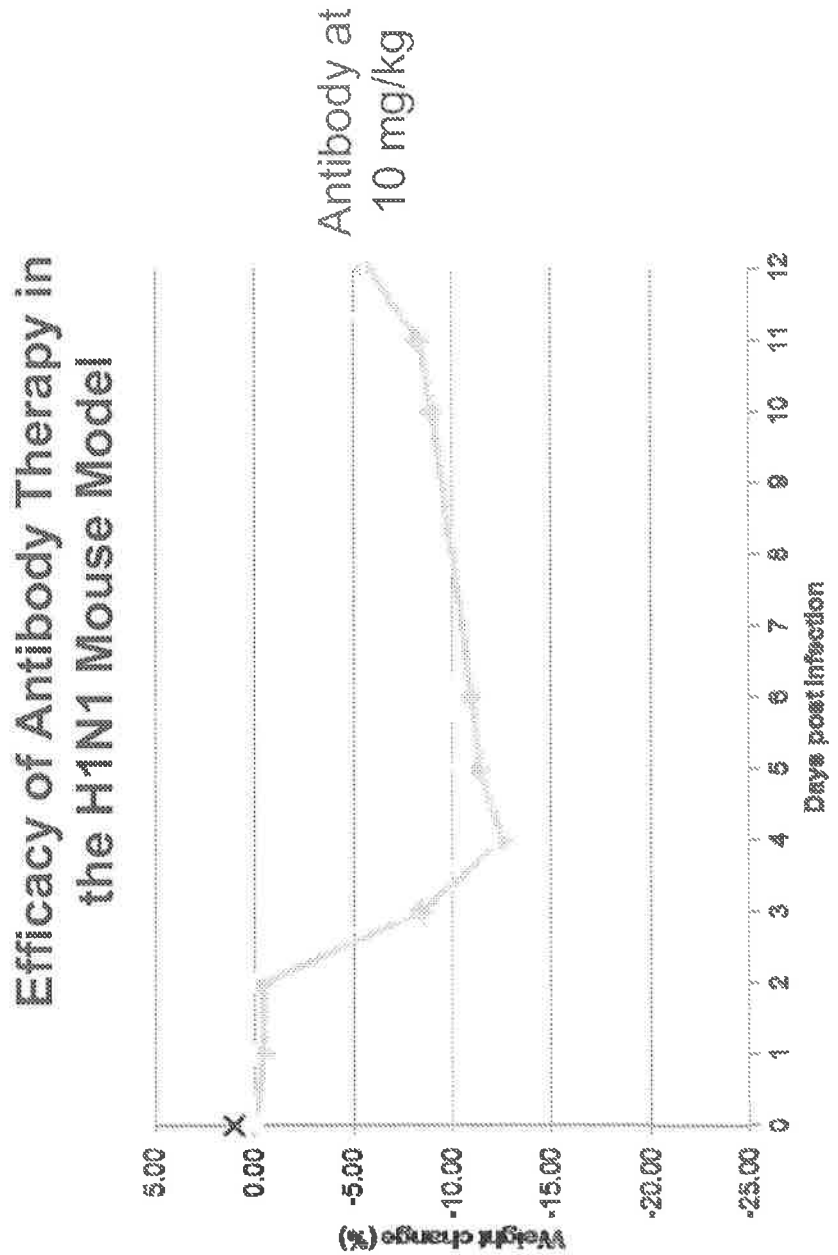

Efficacy of Antibody Therapy in the H1N1 Mouse Model
Antibody at 10 mg/kg
Weight change (%)
5.00
0.00
-5.00
-10.00
-15.00
-20.00
-25.00
0
1
2
3
4
5
6
7
8
9
10
11
12
Days post infection

Figure 8

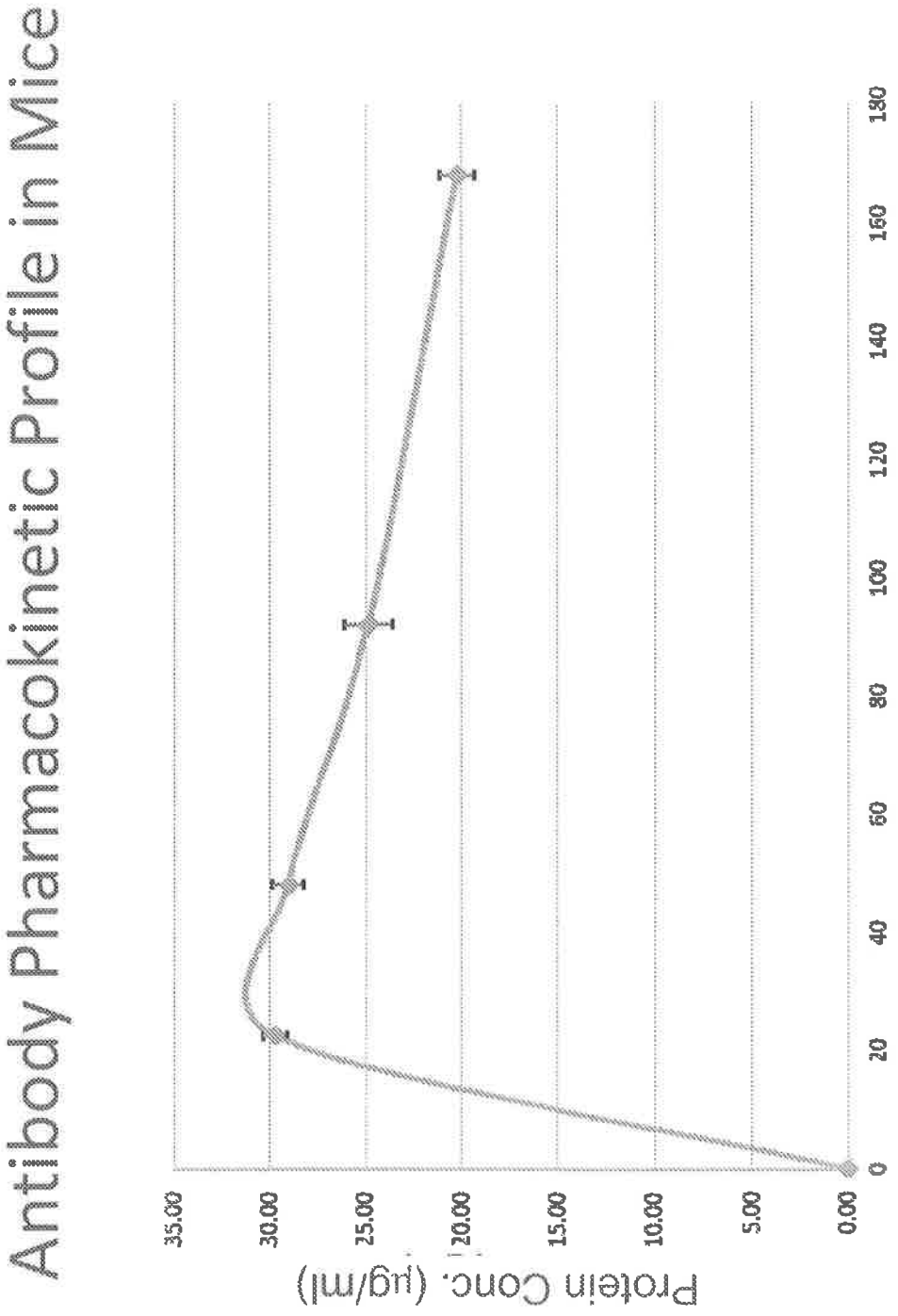

Antibody Pharmacokinetic Profile in Mice
Protein Conc. (µg/ml)
35.00
30.00
25.00
20.00
15.00
10.00
5.00
0.00
0
20
40
60
80
100
120
140
160
180
Time (hr)

Figure 9

CDR Residues Are In Bold

Heavy chain sequences

VH1	EVQLLESGGGLVKPGQSLKLSCAASGFTFTSYGMHWVRQPPGKGLEWVAVISYDGSYKYY	
VH2	EVQLLESGGGVVQPGRSLKLSCAASGFTFSSYGMHWVRQAPGKGLEWVAVISYDGSNKYY	
VH3	EVQLLESGGGVVQPGRSLKLSCAASGFTFSSYGMHWVRQAPGKGLEWVAVVSYDGSNKYY	
VH4	EVQLLESGGGVVQPGRSLKLSCAASGFTFSSYGMHWVRQAPGKGLEWVAVVSYDGSNKYY	
VH5	EVQLLESGGGLVKPGQSLKLSCAASGFTFSSYGMHWVRQPPGKGLEWVAVVSYDGSNKYY	
VH6	EVQLLESGGGLVKPGQSLKLSCAASGFTFSSYGMHWVRQPPGKGLEWVAVVSYDGSNKYY	
VH7	EVQLLESGGGLVKPGQSLKLSCAASGFTFSSYGMHWVRQPPGKGLEWVAVVSYDGSNKYY	
VH8	EVQLLESGGGLVKPGQSLKLSCAASGFTFSSYGMHWVRQPPGKGLEWVAVVSYDGSNKYY	
VH9	EVQLLESGGGLVKPGQSLKLSCAASGFTFSSYGMHWVRQPPGKGLEWVAVVSYDGSNKYY	
VH10	EVQLLESGGGLVKPGQSLKLSCAASGFTFSSYGMHWVRQPPGKGLEWVAVVSYDGSNKYY	
VH11	EVQLLESGGGLVKPGQSLKLSCAASGFTFSSYGMHWVRQPPGKGLEWVAVVSYDGSYKYY	
VH12	EVQLLESGGGLVKPGQSLKLSCAASGFTFTSYGMHWVRQPPGKGLEWVAVISYDGSYKYY	
VH13	EVQLLESGGGLVKPGQSLKLSCAASGFTFTSYGMHWVRQPPGKGLEWVAVISYDGSYKYY	
VH14	EVQLLESGGGLVKPGQSLKLSCAASGFTFTSYGMHWVRQPPGKGLEWVAVISYDGSYKYY	
VH15	EVQLLESGGGLVKPGQSLKLSCAASGFTFTSYGMHWVRQPPGKGLEWVAVISYDGSYKYY	
VH16	EVQLLESGGGLVKPGQSLKLSCAASGFTFTSYGMHWVRQPPGKGLEWVAVISYDGSYKYY	

VH1	ADSVQGRFTISRDNSKNTLYLQMNSLRAEDTAVYYCAKDSELRSLLYFEWLSQGYFNPWG	
VH2	ADSVEGRFTISRDNSKNTLYLQMNSLRAEDTAVYYCAKDGKLRSLLYFEWLSSGLLDYWG	
VH3	ADSVEGRFTISRDNSKNTLYLQMNSLRAEDTAVYYCAKDGKLRSLLYFEWLSSGLLDYWG	
VH4	APKFEGRFTISRDNSKNTLYLQMNSLRAEDTAVYYCAKDGKLRSLLYFEWLSSGLLDYWG	
VH5	ADSVQGRFTISRDNSKNTLYLQMNSLRAEDTAVYYCAKDGKLRSLLYFEWLSSGLLDYWG	
VH6	ADSVQGRFTISRDNSKNTLYLQMNSLRAEDTAVYYCGKDSQLRSLVYFEWLSSGLLDYWG	
VH7	ADSVQGRFTISRDNSKNTLYLQMNSLRAEDTAVYYCAKDSQLRSLLYFEWLSSGLLDYWG	
VH8	ADSVQGRFTISRDNSKNTLYLQMNSLRAEDTAVYYCAKDSKLRSLLYFEWLSSGLLDYWG	
VH9	ADSVQGRFTISRDNSKNTLYLQMNSLRAEDTAVYYCAKDTQLRTIVYFEWLSQGFYDIWG	
VH10	ADSVQGRFTISRDNSKNTLYLQMNSLRAEDTAVYYCAKDSQLRTIVYFEWLSQGYFDPWG	
VH11	ADSVQGRFTISRDNSKNTLYLQMNSLRAEDTAVYYCAKDSQLRSLLYFEWLSSGLLDYWG	
VH12	ADSVQGRFTISRDNSKNTLYLQMNSLRAEDTAVYYCGKDSQLRSLIYFEWLSNGYFDIWG	
VH13	ADSVQGRFTISRDNSKNTLYLQMNSLRAEDTAVYYCAKDSQLRSLLYFEWLSNGFYDIWG	
VH14	ADSVQGRFTISRDNSKNTLYLQMNSLRAEDTAVYYCAKDSNLRTIVYFEWLSSGLLDYWG	
VH15	ADSVQGRFTISRDNSKNTLYLQMNSLRAEDTAVYYCAKDSQLRTIVYFEWLSQGYFDPWG	
VH16	ADSVQGRFTISRDNSKNTLYLQMNSLRAEDTAVYYCAKDTQLRTIVYFEWLSQGFYDIWG	

VH1	AGTTLTVSSASTK
VH2	QGAMVTVSSASTK
VH3	QGAMVTVSSASTK
VH4	QGAMVTVSSASTK
VH5	QGAMVTVSSASTK
VH6	QGAMVTVSSASTK
VH7	QGAMVTVSSASTK
VH8	QGAMVTVSSASTK
VH9	QGAMVTVSSASTK
VH10	QGAMVTVSSASTK
VH11	QGAMVTVSSASTK
VH12	AGTTLTVSSASTK
VH13	AGTTLTVSSASTK
VH14	AGTTLTVSSASTK
VH15	AGTTLTVSSASTK
VH16	AGTTLTVSSASTK

Figure 10A

CDR Residues Are In Bold

Light chain sequences

VL1 EIVMTQSPDSLAVSLGERATINC**KSSQSVTYNYKNYLA**WYQQKPGQPPKLLIY**WASTR**
VL2 DIQMTQSPSSLSASVGDRVTITC**RASQDV----NTAVA**WYQQKPGKAPKLLIY**SASFL**
VL3 DIQMTQSPSSLSASVGDRVTITC**RASQDIPRSISGYVA**WYQQKPGKAPKLLIY**WGSYL**
VL4 DIQMTQSPSSLSASVGDRVTITC**RASQDIPFSYKGYVA**WYQQKPGKAPKLLIY**WGSYL**
VL5 DIQMTQSPSSLSASVGDRVTITC**RASQSITFDYKNYVA**WYQQKPGKAPKLLIY**WGSYL**
VL6 DIQMTQSPSSLSASVGDRVTITC**RASQSITFNYKNYVA**WYQQKPGKAPKLLIY**WGSYL**
VL7 DIQMTQSPSSLSASVGDRVTITC**RASQSITFSYKNYVA**WYQQKPGKAPKLLIY**WGSYL**
VL8 DIQMTQSPSSLSASVGDRVTITC**RASQDIPFSYKGYVA**WYQQKPGKAPKVLIY**WGSYL**
VL9 DIQMTQSPSSLSASVGDRVTITC**RASQSITFDYKNYVA**WYQQKPGKAPKVLIY**WGSYL**
VL10 DIQMTQSPSSLSASVGDRVTITC**RASQSITFNYKNYVA**WYQQKPGKAPKVLIY**WGSYL**
VL11 DIQMTQSPSSLSASVGDRVTITC**RASQSITFSYKNYVA**WYQQKPGKAPKVLIY**WGSYL**

VL1 **ES**GVPDRFSGSGSGTDFTLTISSLQAEDVAVYYC**QQYYRTPPT**FGGGTKLDIKGS
VL2 **YS**GVPSRFSGSRSGTDFTLTISSLQPEDFATYYC**QQHYTTPPT**FGQGTKVEIKGS
VL3 **YS**GVPSRFSGSRSGTDFTLTISSLQPEDFATYYC**QQHYTTPPT**FGQGTKVEIKGS
VL4 **ES**GVPSRFSGSGSGTDFTLTISSLQPEDFATYYC**QQHYTTPPT**FGQGTKVEIKGS
VL5 **E-**GVPSRFSGSGSGTDFTLTISSLQPEDFATYYC**QQHYTTPPT**FGQGTKVEIKGS
VL6 **ES**GVPSRFSGSGSGTDFTLTISSLQPEDFATYYC**QQHYTTPPT**FGQGTKVEIKGS
VL7 **ES**GVPSRFSGSGSGTDFTLTISSLQPEDFATYYC**QQHYTTPPT**FGQGTKVEIKGS
VL8 **ES**GVPSRFSGSGSGTDFTLTISSLQPEDFATYYC**QQHYTTPPT**FGQGTKVEIKGS
VL9 **ES**GVPSRFSGSGSGTDFTLTISSLQPEDFATYYC**QQHYTTPPT**FGQGTKVEIKGS
VL10 **ES**GVPSRFSGSGSGTDFTLTISSLQPEDFATYYC**QQHYTTPPT**FGQGTKVEIKGS
VL11 **ES**GVPSRFSGSGSGTDFTLTISSLQPEDFATYYC**QQHYTTPPT**FGQGTKVEIKGS

Figure 10B