FIGURE 1A

Heavy chain germlining

FW %ID	ID	FW1	CDR1	FW2	CDR2	FW3	SEQ ID NO:
	MOR-8457 Heavy Chain	EVQLVESGGGLVQPGGSLRLSCAASGFTFS	SYAMS	WVRQAPGKGLEWVS	YIS_DDGSlKYYADSVKG	RFTISRDNSKNTLYLQMNSLRAEDTAVYYCAR	2
98.6	lcl|IMGT. IGHV3-23~01	....L.....	.....	.....	A..qSG.._T.....	.....K	25
98.6	lcl|IMGT. IGHV3-23~02	....L.....	.....	.....	A..qSG.._T..G.....	.....K	26
98.6	lcl|IMGT. IGHV3-23~03	....L.....	.....	.....	V.Y_SG..sT.....	.....K	27
98.6	lcl|IMGT. IGHV3-23~05	....L.....	.....	.....	A.Y_SG..sT.....	.....K	28

FIGURE 1B

Light chain germlining

FW %ID	ID	FW1	CDR1	FW2	CDR2	FW3	SEQ ID NO:
	MOR-8457 Light Chain	SYELTQPPSVSVAPGQTARISC	SGDSLGSYFVH	WYQQKPGQAPVLVIY	DDSNRPS	GIPERFSGSNSGNTATLTISGTQAEDEADYYC	1
92.7	lcl|IMGT.I GLV3-1~01	...........S.....S.T.	...K..DKYAC	........S.....	Q..K...	.....M.....	29
91.3	lcl|IMGT.I GLV3-25~03	...........S.....T.	...A.PKQYAY	.....	K..E...	.....S..T.V.....V.....	30
91.3	lcl|IMGT.I GLV3-9~01	.....L.....L.....T.	G.NNI..KN..	.....	R.....	.....RA..G.....	31
89.8	lcl|IMGT.I GLV3-25~01	....M.....S.....T.	...A.PKQYAY	.....	K..E...	.....S..T.V.....V.....	32

FIGURE 1 (Continued)

1C MOR8457-VL SYELTQPPSVSVAPGQTARISCSGDSLGSYFVHWYQQKPG QAPVLVIYDDSNRPSGIPERFSGSNSGNTATLTISGTQAED EADYYCSAFTHNSDVFGGGTKLTVL (SEQ ID NO:1)

1D MOR8457-VH EVQLVESGGGLVQPGGSLRLSCAASGFTFSSYAMSWVRQ APGKGLEWVSYISDDGSLKYYADSVKGRFTISRDNSKNT LYLQMNSLRAEDTAVYYCARHPYWYGGQLDLWGQGTL VTVSS (SEQ ID NO:2)

1E MOR8457-GL-VL SYELTQPPSVSVSPGQTASITCSGDSLGSYFVHWYQQ KPGQSPVLVIYDDSNRPSGIPERFSGSNSGNTATLTIS GTQAMDEADYYCSAFTHNSDVFGGGTKLTVL (SEQ ID NO:4)

FIGURE 1 (Continued)

1F MOR8457-GL-VH

EVQLLESGGGLVQPGGSLRLSCAASGFTFSSYAM
SWVRQAPGKGLEWVSYISDDGSLKYYADSVKGR
FTISRDNSKNTLYLQMNSLRAEDTAVYYCAKHP
YWYGGQLDLWGQGTLVTVSS (SEQ ID NO:6)

1G MOR8457-GL-LC

SYELTQPPSVSVSPGQTASITCSGDSLGSYFVHWYQQ
KPGQSPVLVIYDDSNRPSGIPERFSGSNSGNTATLTIS
GTQAMDEADYYCSAFTHNSDVFGGGTKLTVLGQPK
AAPSVTLFPPSSEELQANKATLVCLISDFYPGAVTVA
WKADSSPVKAGVETTTPSKQSNNKYAASSYLSLTPE
QWKSHRSYSCQVTHEGSTVEKTVAPTECS (SEQ ID
NO:16)

FIGURE 1 (Continued)

1H MOR8457-GL-hIgG1-3m-HC

EVQLLESGGGLVQPGGSLRLSCAASGFTFSSYAMSWV
RQAPGKGLEWVSYISDDGSLKYYADSVKGRFTISRDN
SKNTLYLQMNSLRAEDTAVYYCAKHPYWYGGQLDL
WGQGTLVTVSSASTKGPSVFPLAPSSKSTSGGTAALGC
LVKDYFPEPVTVSWNSGALTSGVHTFPAVLQSSGLYSL
SSVVTVPSSSLGTQTYICNVNHKPSNTKVDKKVEPKS
CDKTHTCPPCPAPEAAGAPSVFLFPPKPKDTLMISRT
PEVTCVVVDVSHEDPEVKFNWYVDGVEVHNAKTKP
REEQYNSTYRVVSVLTVLHQDWLNGKEYKCKVSNKA
LPAPIEKTISKAKGQPREPQVYTLPPSREEMTKNQVSL
TCLVKGFYPSDIAVEWESNGQPENNYKTTPPVLDSDG
SFFLYSKLTVDKSRWQQGNVFSCSVMHEALHNHYTQ
KSLSLSPG (SEQ ID NO:14)

FIGURE 1 (Continued)

1I	MOR8457-15-VL	SYELTQPPSVSVSPGQTASITCSGDSLGSYFVHWYQQKPG QSPVLVIYDDSNRPSGIPERFSGSNSGNTATLTISGTQAM DEADYYCSAFTHNSNVFGGGTKLTVL (SEQ ID No: 34)
1J	MOR8457-15/16-VH	EVQLLQSGGGLVKPGGSLRLSCAASGFTFSSYAMSWVRQ APGKGLEWVSYISDDGSLKYYADSVKGRFTISRDNSKNTL YLQMNSLRAEDTAVYYCARHPYWYGGQLDLWGQGTLVT VSS (SEQ ID No: 44)
1K	MOR8457-16-VL	SYELTQPPSVSVSPGQTASITCSGDSLGSYFVHWYQQKPG QSPVLVIYDDSKRPSGIPERFSGSNSGNTATLTISGTQAM DEADYYCSAFTHNSDVFGGGTKLTVL (SEQ ID No: 39)

FIGURE 1 (Continued)

1L	MOR8457-15-LC	SYELTQPPSVSVSPGQTASITCSGDSLGSYFVHWYQ QKPGQSPVLVIYDDSNRPSGIPERFSGSNSGNTATL TISGTQAMDEADYYCSAFTHNSNVFGGGTKLTVLG QPKAAPSVTLFPPSSEELQANKATLVCLISDFYPGA VTVAWKADSSPVKAGVETTTPSKQSNNKYAASSYL SLTPEQWKSHRSYSCQVTHEGSTVEKTVAPTECS (SEQ ID No: 37)

FIGURE 1 (Continued)

1M	MOR8457-15/16-HC	EVQLLQSGGGLVKPGGSLRLSCAASGFTFSSYAMSW VRQAPGKGLEWVSYISDDGSLKYYADSVKGRFTISR DNSKNTLYLQMNSLRAEDTAVYYCARHPYWYGGQ LDLWGQGTLVTVSSASTKGPSVFPLAPSSKSTSGGT AALGCLVKDYFPEPVTVSWNSGALTSGVHTFPAVL QSSGLYSLSSVVTVPSSSLGTQTYICNVNHKPSNTKV DKKVEPKSCDKTHTCPPCPAPEAAGAPSVFLFPPK PKDTLMISRTPEVTCVVVDVSHEDPEVKFNWYVD GVEVHNAKTKPREEQYNSTYRVVSVLTVLHQDWL NGKEYKCKVSNKALPAPIEKTISKAKGQPREPQVYT LPPSREEMTKNQVSLTCLVKGFYPSDIAVEWESNG QPENNYKTTPPVLDSDGSFFLYSKLTVDKSRWQQG NVFSCSVMHEALHNHYTQKSLSLSPG (SEQ ID No: 46)

FIGURE 1 (Continued)

1N	MOR8457-16-LC	SYELTQPPSVSVSPGQTASITCSGDSLGSYFVHWYQQK PGQSPVLVIYDDSKRPSGIPERFSGSNSGNTATLTISGT QAMDEADYYCSAFTHNSDVFGGGTKLTVLGQPKAAPS VTLFPPSSEELQANKATLVCLISDFYPGAVTVAWKADS SPVKAGVETTTPSKQSNNKYAASSYLSLTPEQWKSHR SYSCQVTHEGSTVEKTVAPTECS(SEQ ID No: 42)

FIGURE 2

Binding Kinetics of MOR 8457 Antibodies to different PDGFs

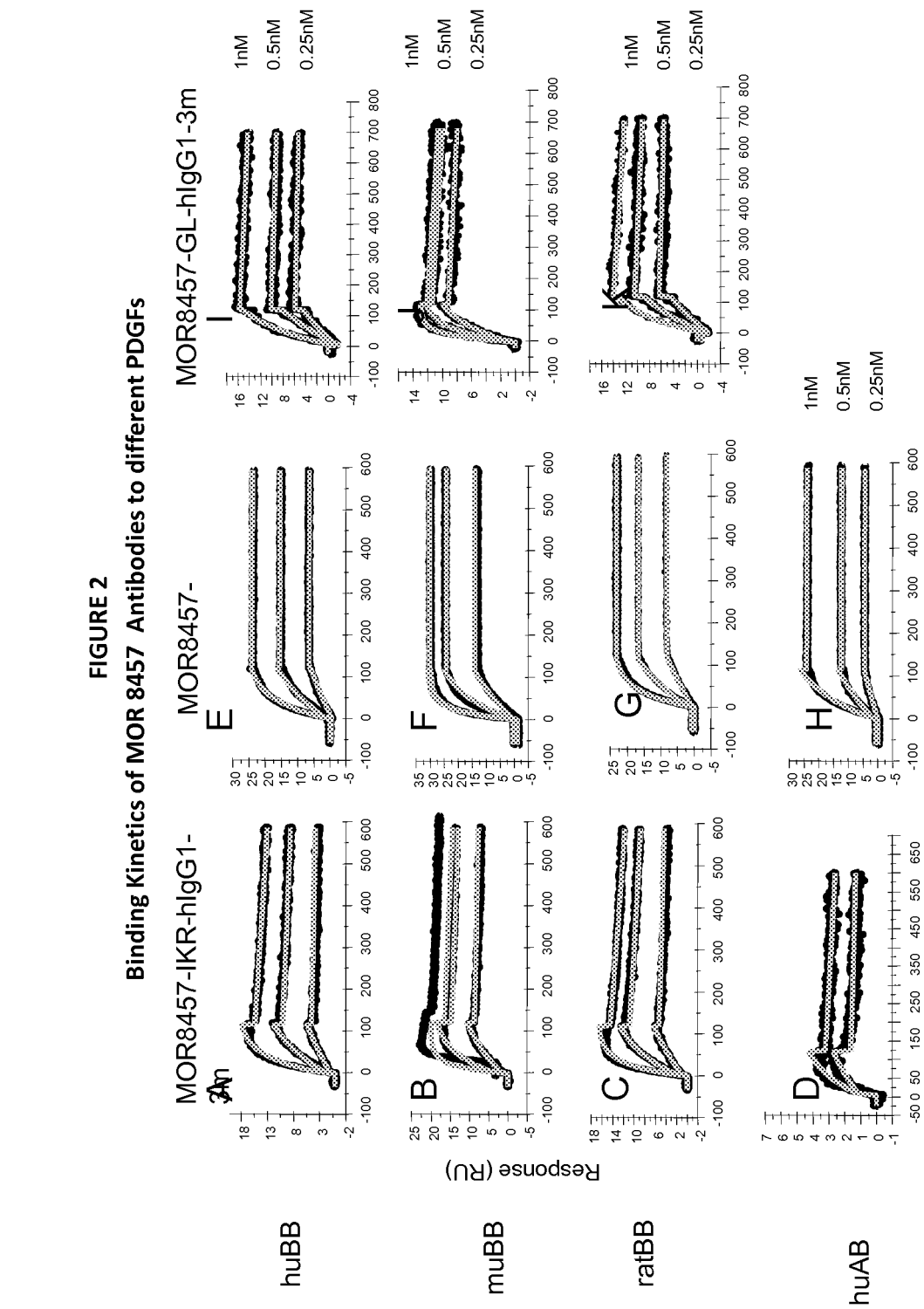


FIGURE 3

MOR8457-IKR-hIgG1-3m but not PDGFRβ-hIGg1 bound human PDGF-BB when PDGF-BB was bound to MOR8457-mIgG1

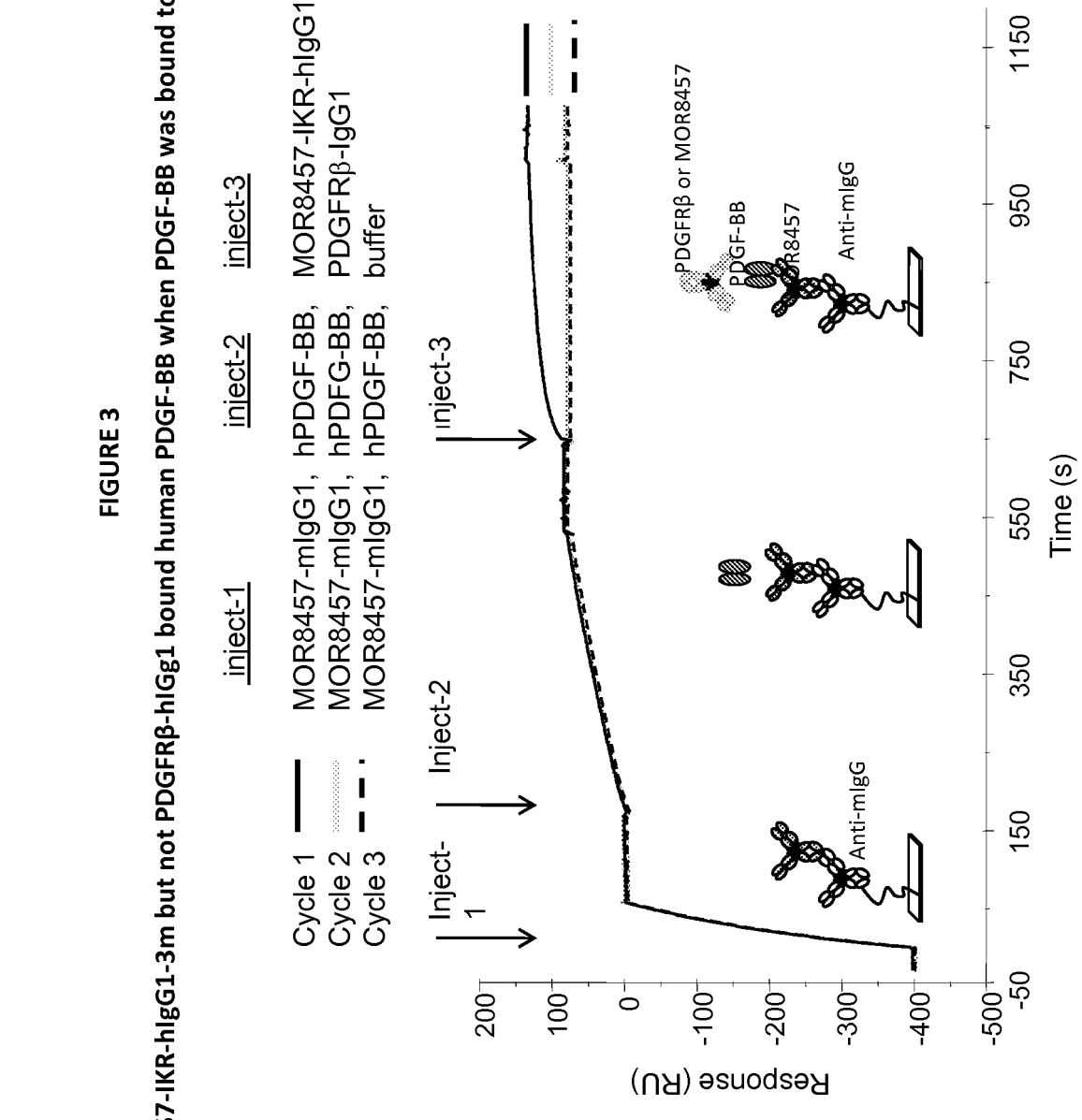


FIGURE 4

MOR8457-IKR-hIgG1-3m did not bind human PDGF-BB when it was bound to hPDGFRβ-hIgG1.

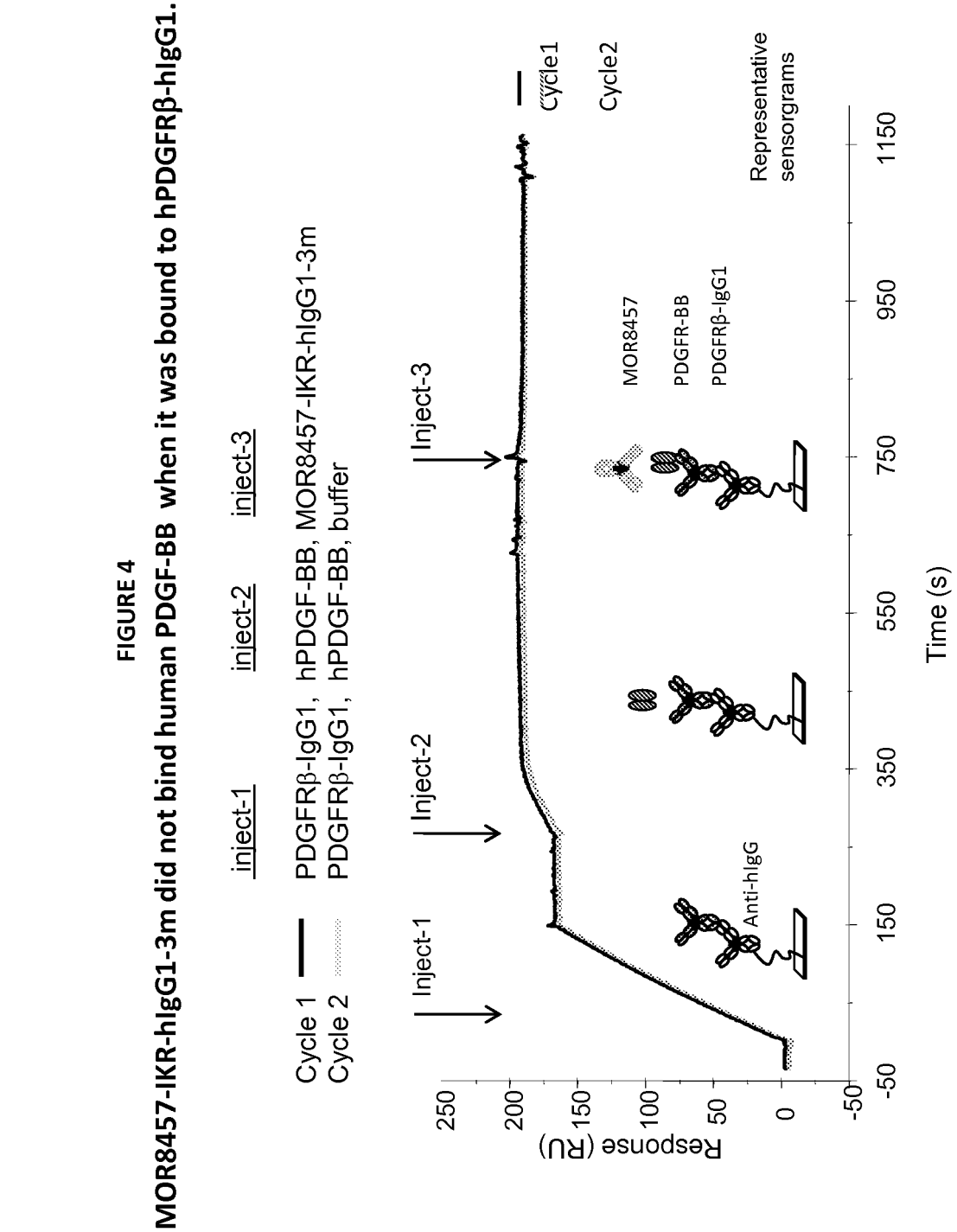


FIGURE 5

MOR8457 blocked human PDGF-BB binding to PDGFRβ-hIgG1 in solution.

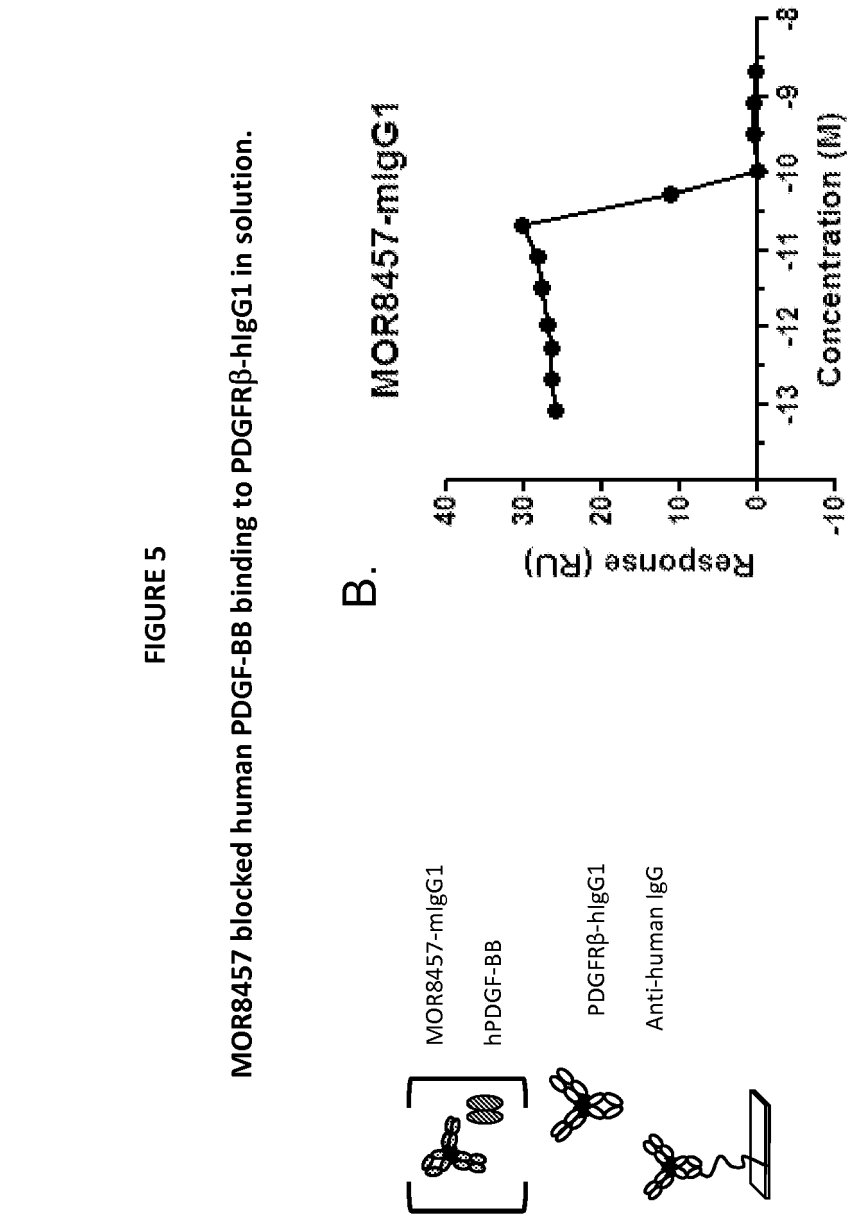


FIGURE 6

Binding Mode of MOR-8457 to PDGF-BB

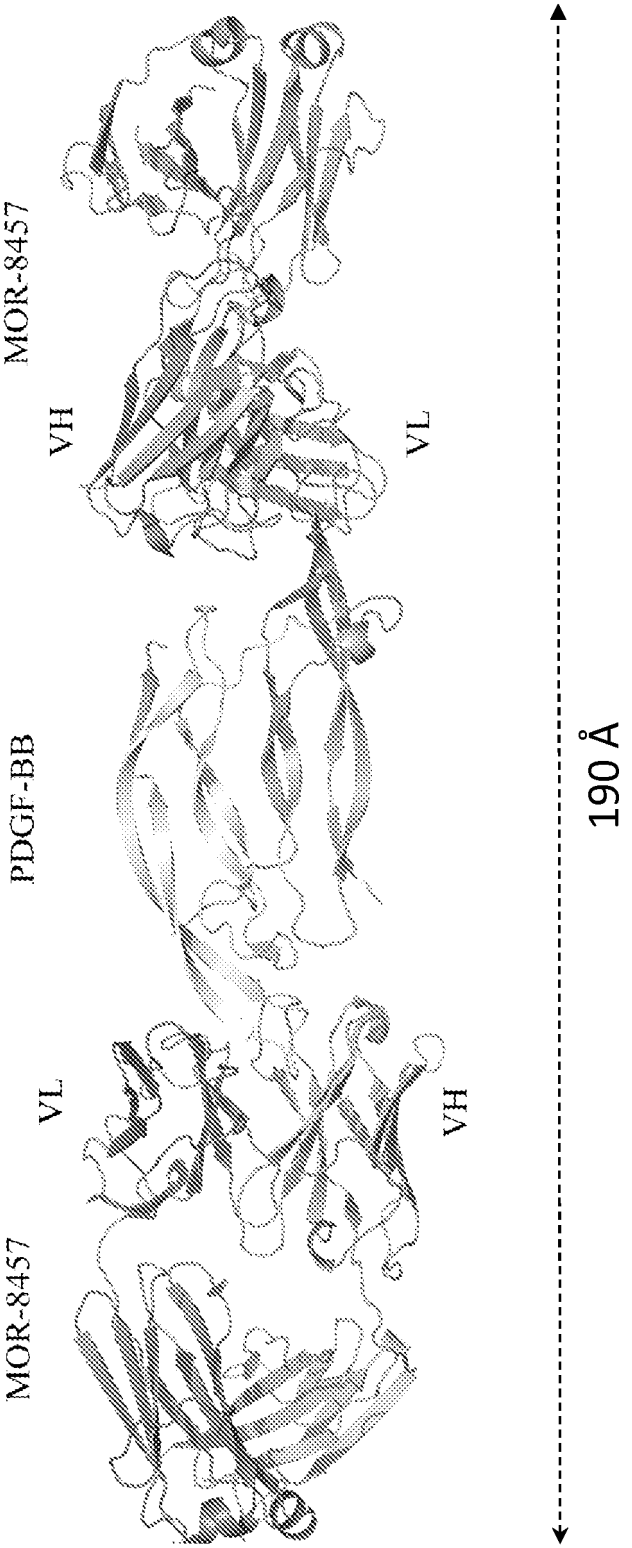


FIGURE 7

MOR-8457 Binding Epitope on PDGF-BB

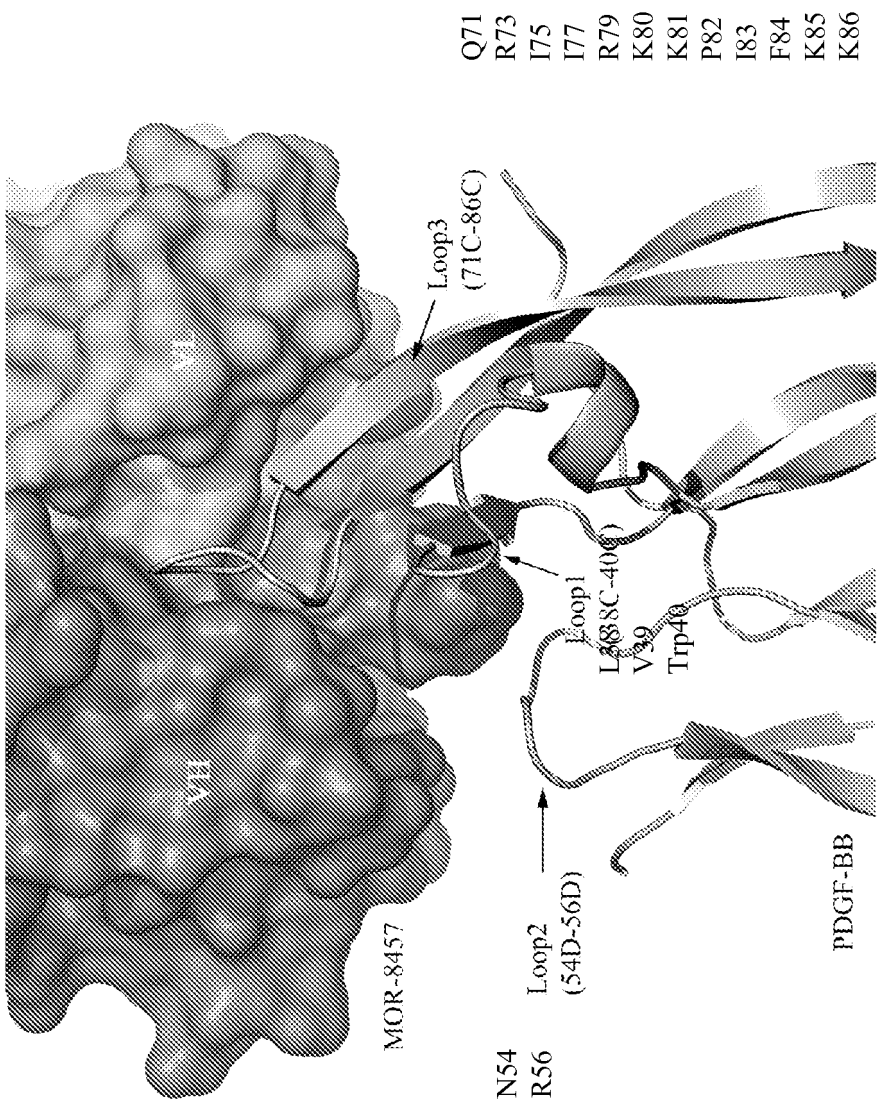


FIGURE 8

MOR8457 potently inhibited PDGF-BB induced human mesangial cell proliferation.

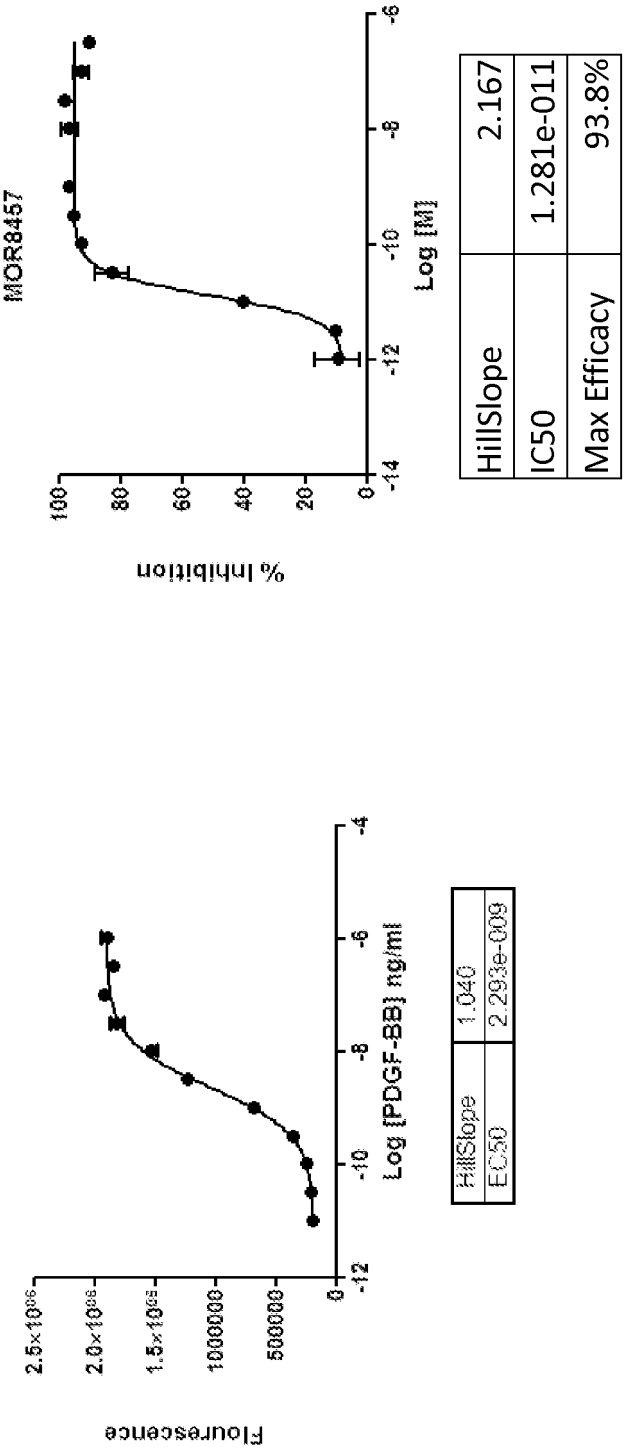
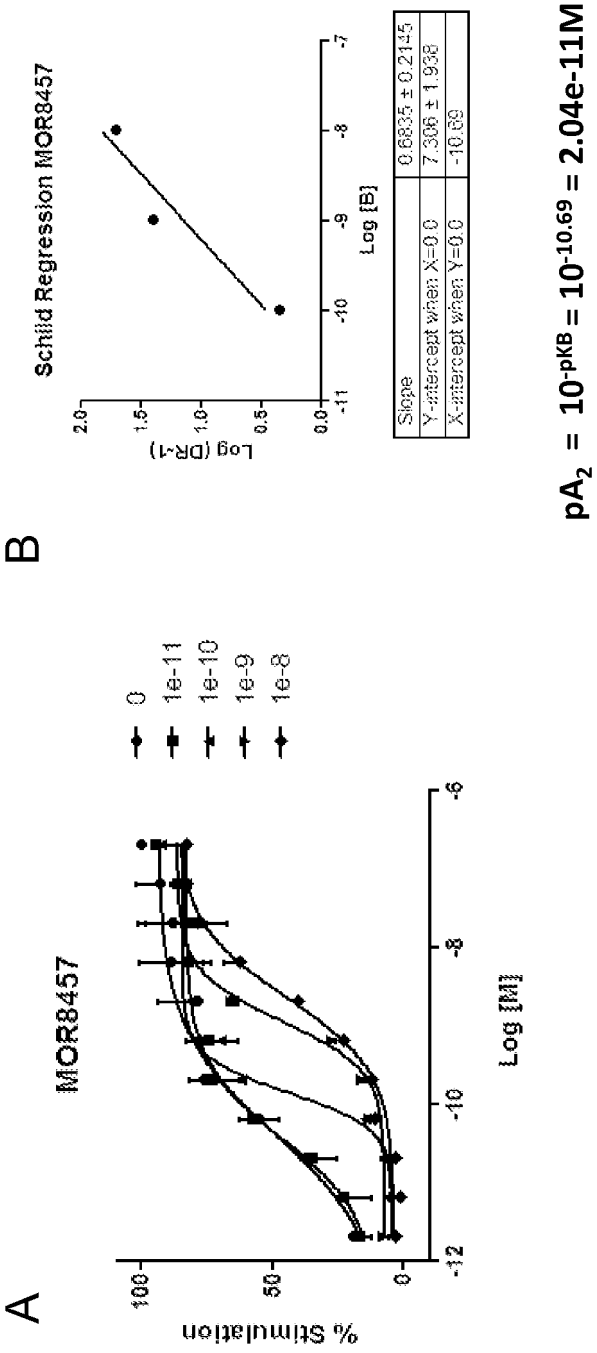


FIGURE 9

Schild analysis for competitive inhibition of MOR8457



$pA_2 = 10^{-pKB} = 10^{-10.69} = 2.04e\text{-}11M = \sim 20pM$

FIGURE 10

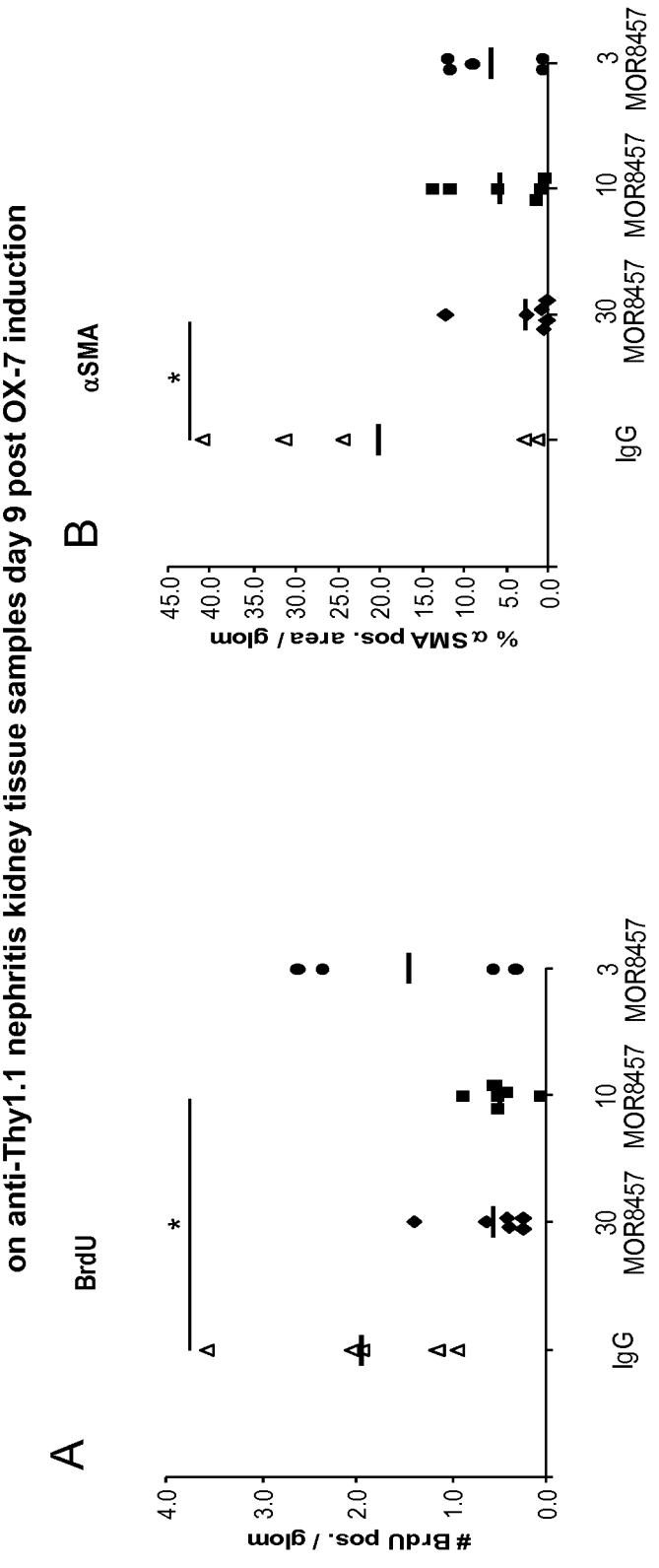

Effect of MOR8457-mIgG1 or isotype control on mesangial cell proliferation
on anti-Thy1.1 nephritis kidney tissue samples day 9 post OX-7 induction
A
BrdU
BrdU pos. / glom
4.0
3.0
2.0
1.0
0.0
*
IgG
30 MOR8457
10 MOR8457
3 MOR8457
B
αSMA
% αSMA pos. area / glom
45.0
40.0
35.0
30.0
25.0
20.0
15.0
10.0
5.0
0.0
*
IgG
30 MOR8457
10 MOR8457
3 MOR8457

FIGURE 11

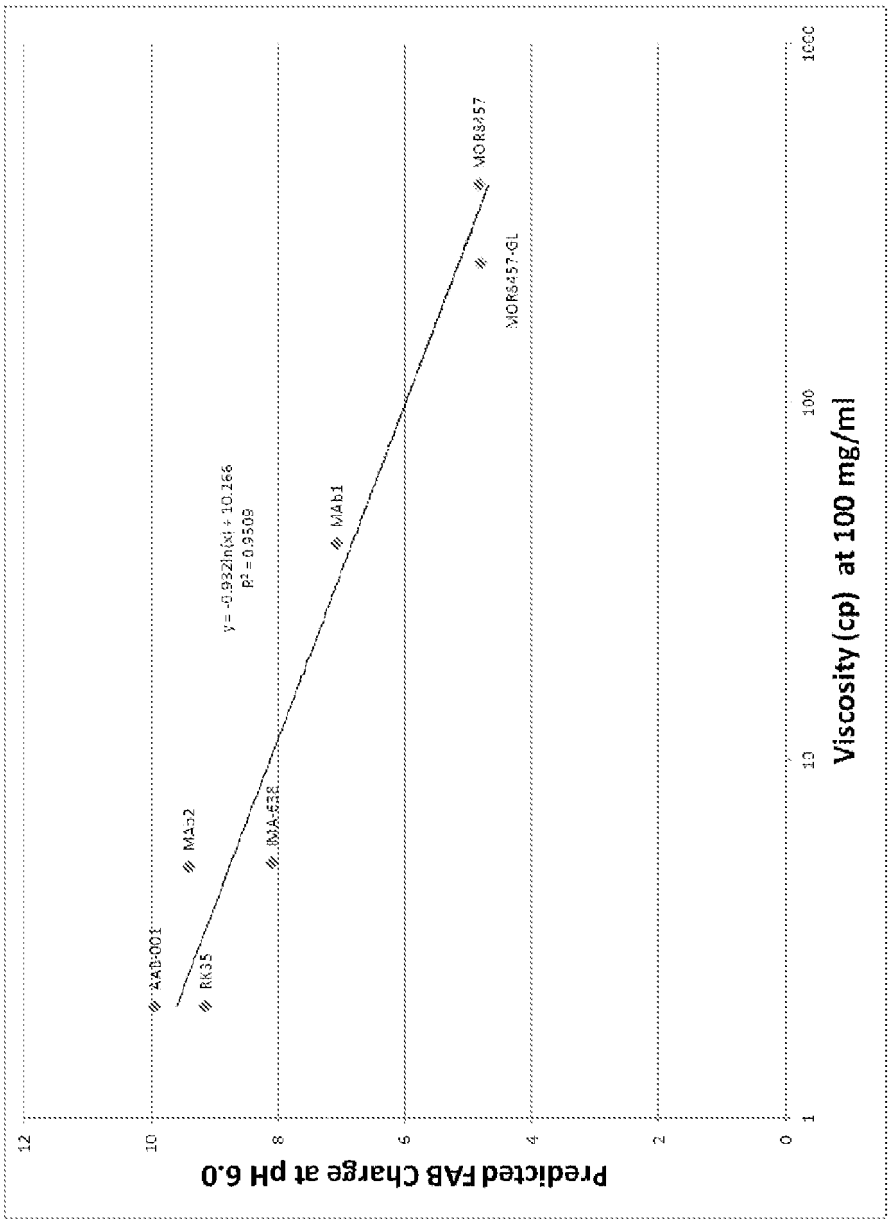

Predicted FAB Charge at pH 6.0
Viscosity (cp) at 100 mg/ml
0
2
4
6
8
10
12
1
10
100
1000
y = -5.932ln(x) + 10.166
R² = 0.9509
KAB-001
MA-32
RK35
MA-638
MAb1
MOR8457
MOR8457-GL

FIGURE 12


Predicted FAB Dipole Moment Magnitude at pH6.0
Viscosity (cp) at 100 mg/ml
MAB_
y = 57.374ln(x) + 361.02
R² = 0.2973
MOR8457-GL
MOR8457
AAB-001
MA-638
MAB?
RK35
1000
900
800
700
600
500
400
300
200
100
0
1
10
100
1000

FIGURE 13

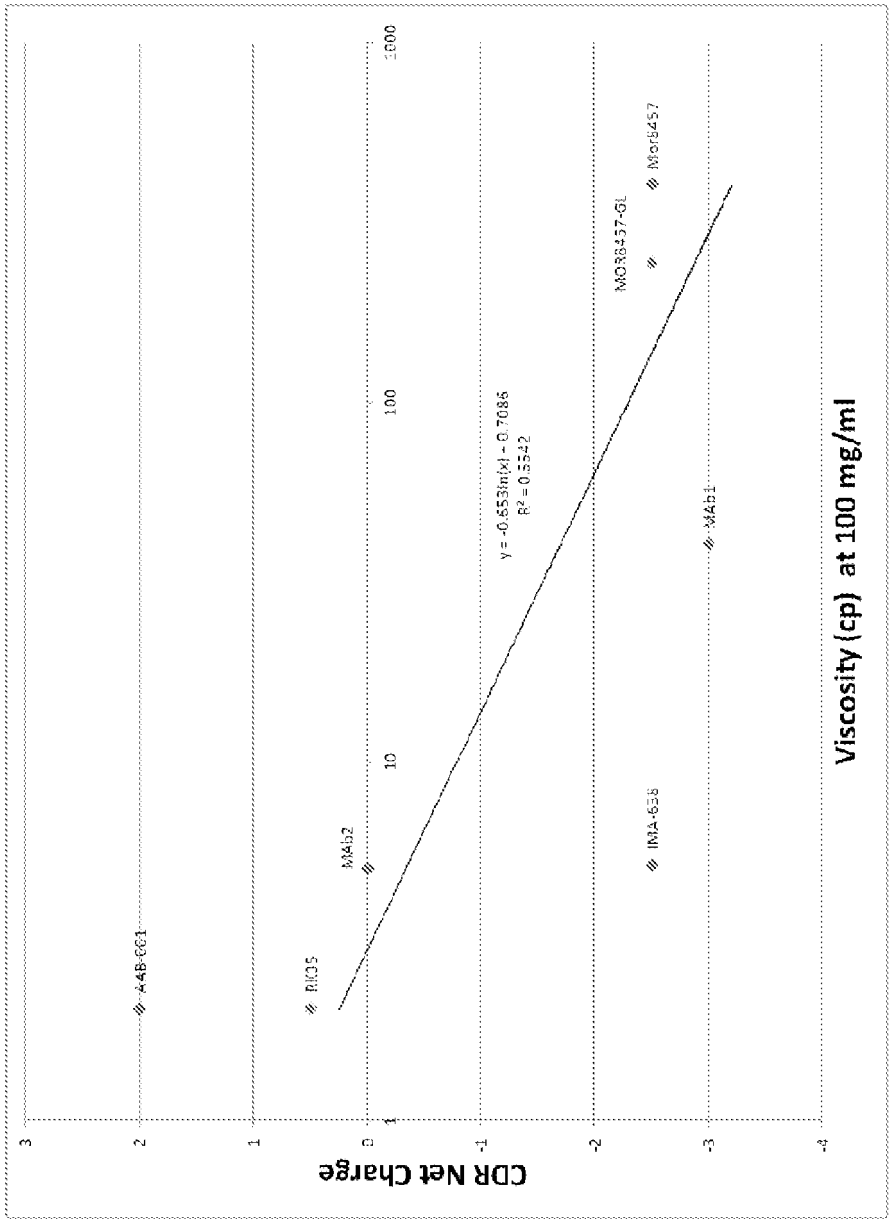

CDR Net Charge
Viscosity (cp) at 100 mg/ml
3
2
1
0
-1
-2
-3
-4
1
10
100
1000
y = -0.653ln(x) - 0.7086
R² = 0.5542
A4B-661
RIQS
MAb2
IMA-638
MOR08457-GL
Mor08457
MAb1

FIGURE 14

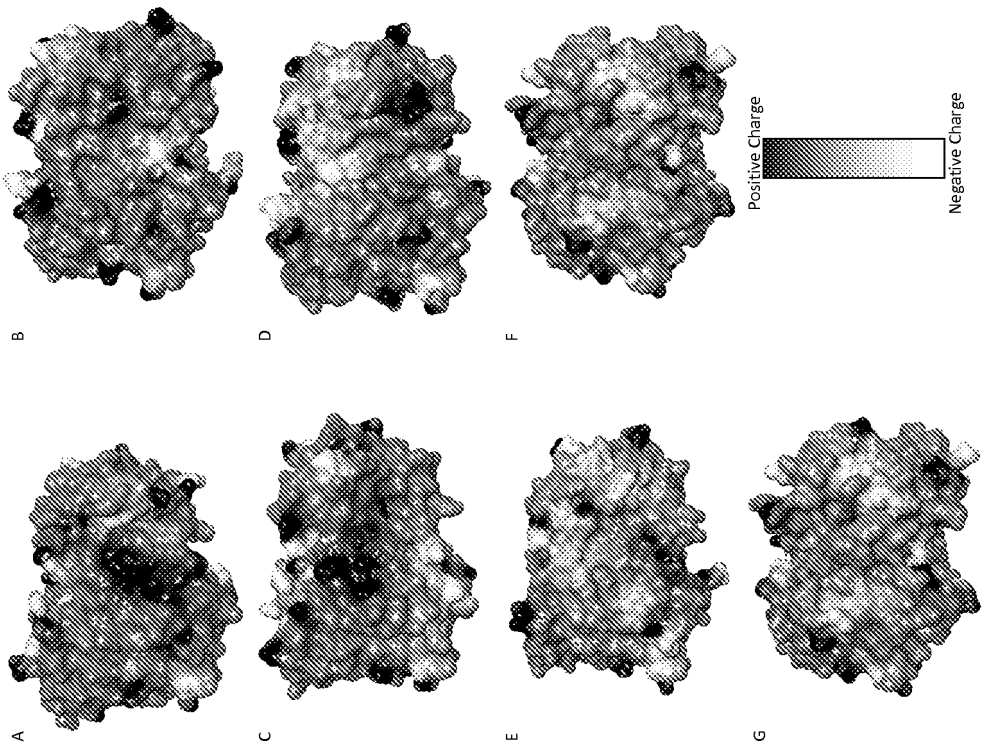


FIGURE 15

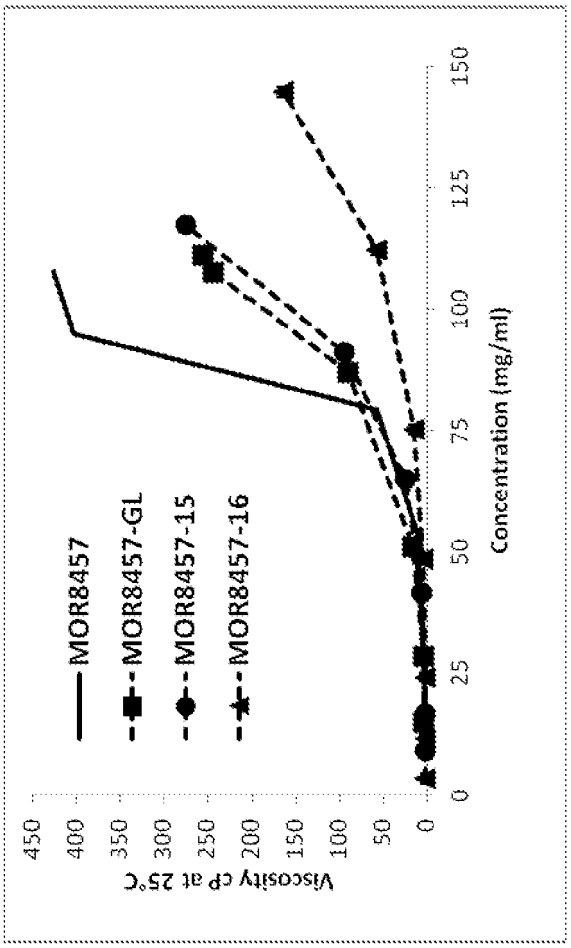
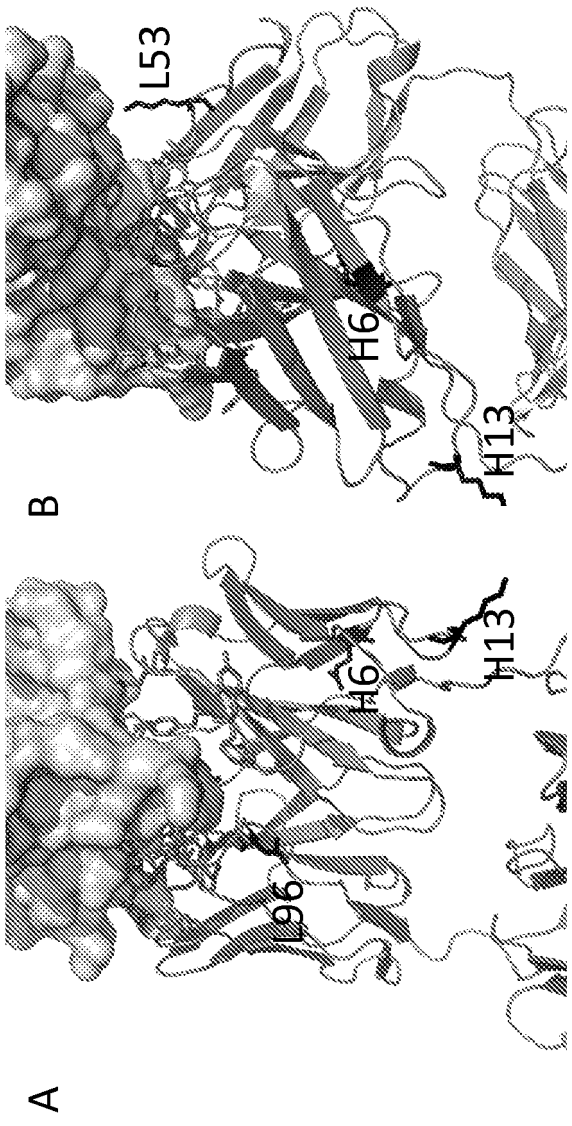

MOR8457
MOR8457-GL
MOR8457-15
MOR8457-16
Viscosity cP at 25°C
450
400
350
300
250
200
150
100
50
0
0
25
50
75
100
125
150
Concentration (mg/ml)

FIGURE 16



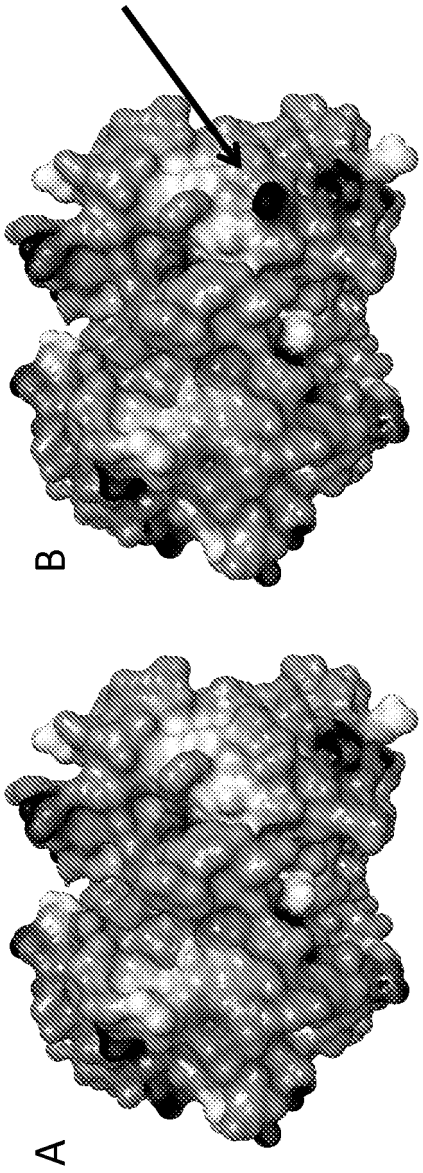


FIGURE 17

FIGURE 18

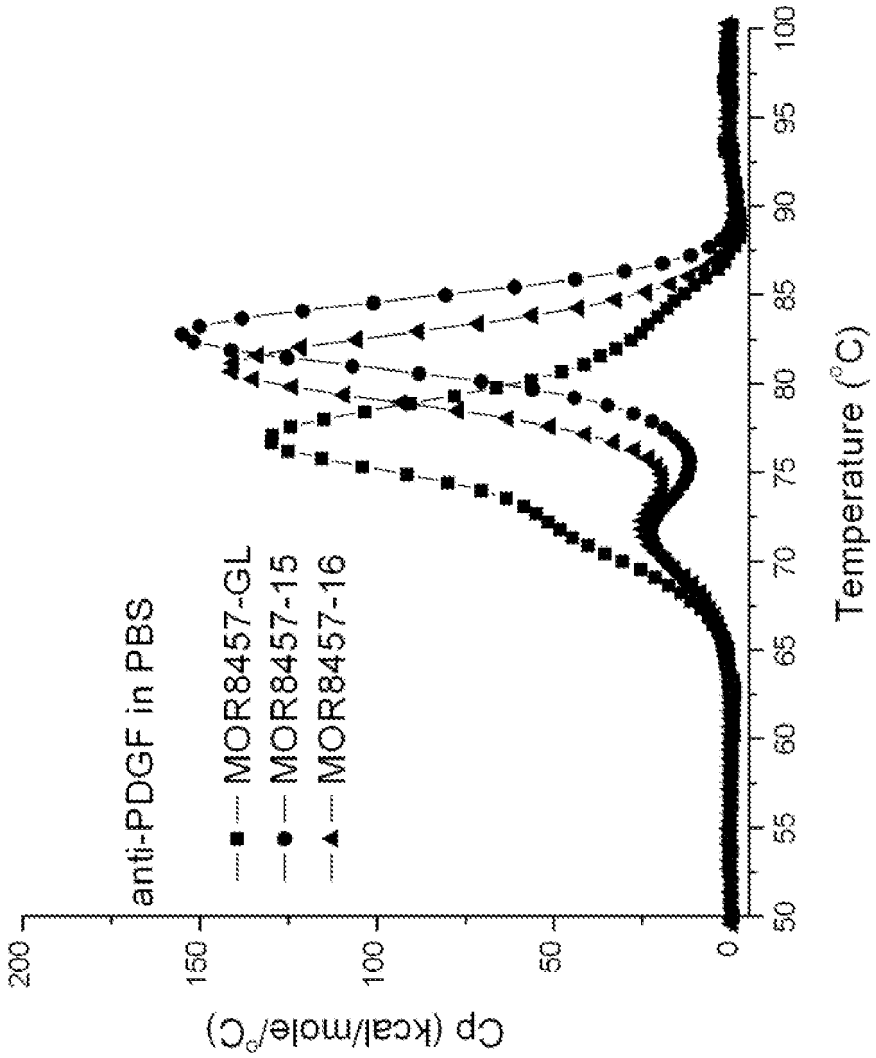

anti-PDGF in PBS
MOR8457-GL
MOR8457-15
MOR8457-16
Cp (kcal/mole/°C)
Temperature (°C)
0
50
100
150
200
50
55
60
65
70
75
80
85
90
95
100

FIGURE 19

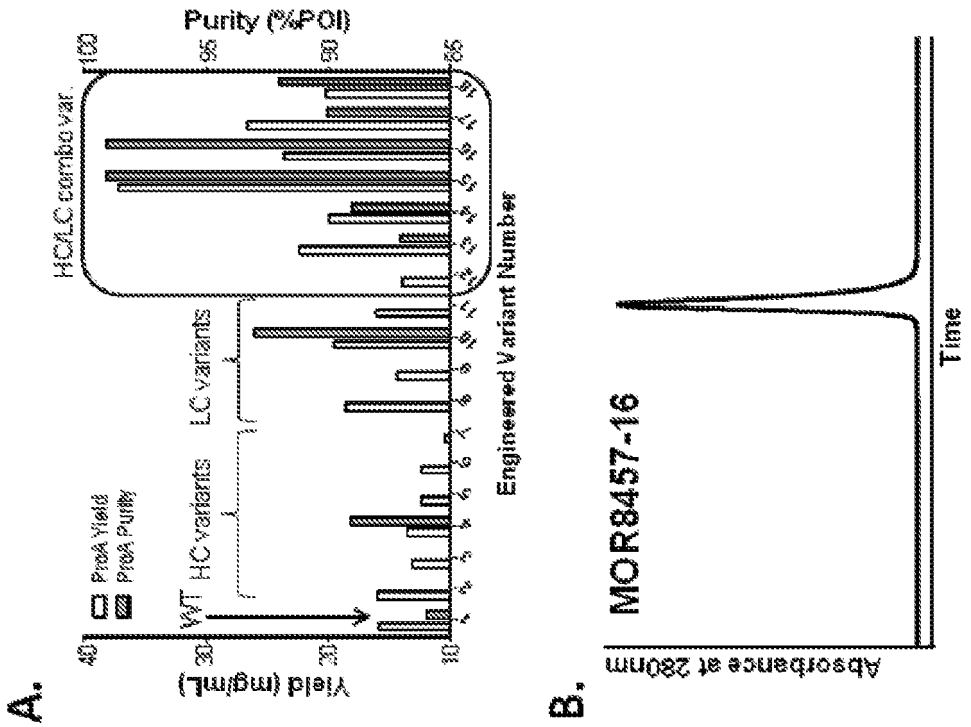

A.
Purity (%POI)
100
95
90
85
HC/LC combo var.
ProA Yield
ProA Purity
WT
HC variants
LC variants
Yield (mg/mL)
40
30
20
10
Engineered Variant Number
B.
MOR8457-16
Absorbance at 280nm
Time

FIGURE 20

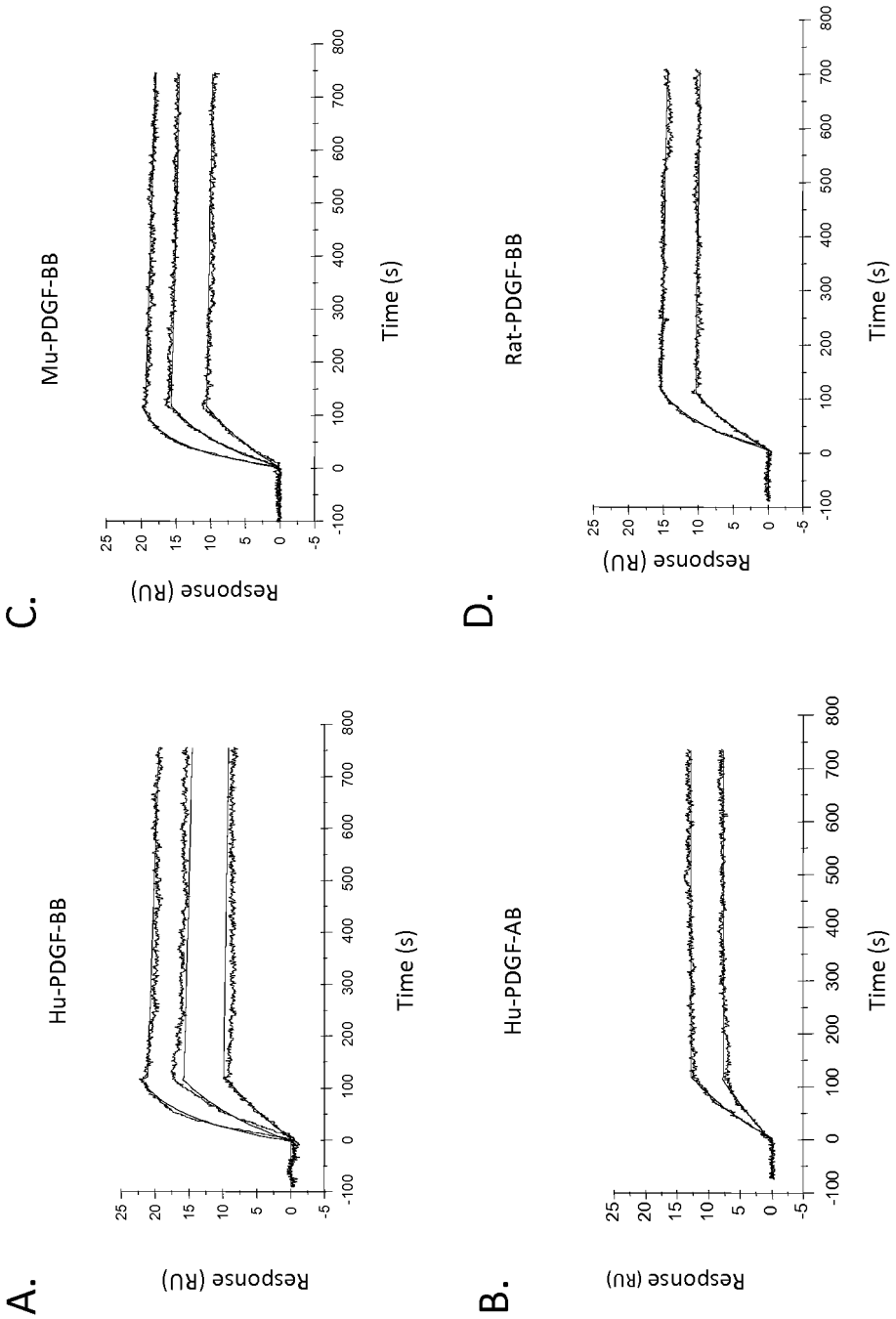
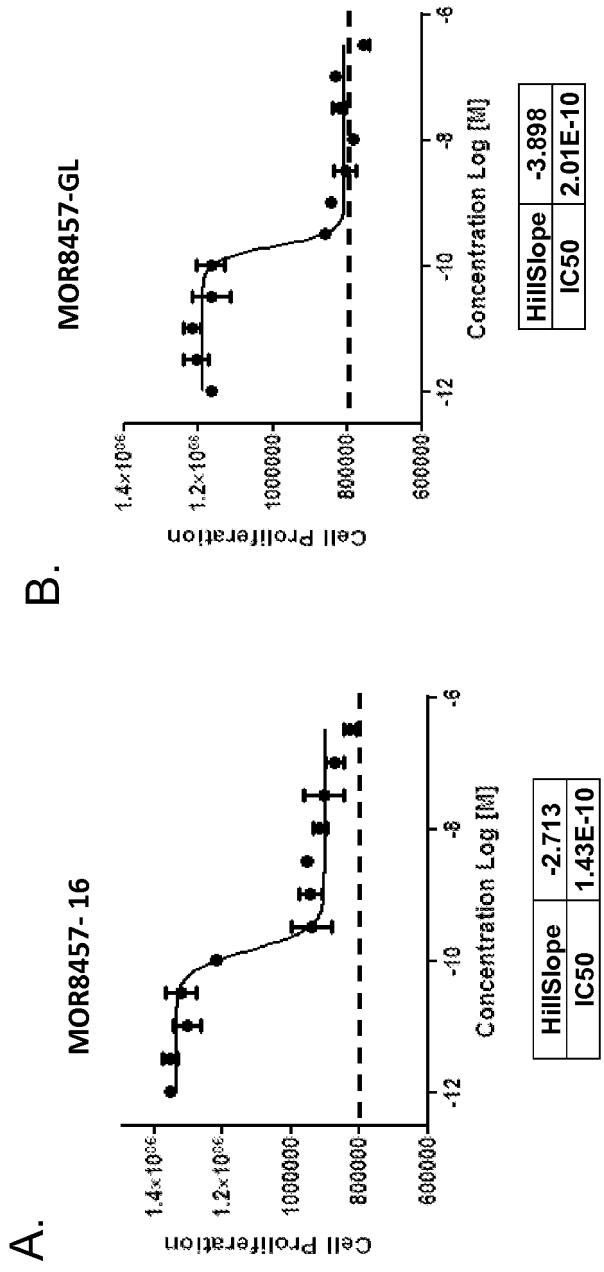

A.
Hu-PDGF-BB
Response (RU)
Time (s)
B.
Hu-PDGF-AB
Response (RU)
Time (s)
C.
Mu-PDGF-BB
Response (RU)
Time (s)
D.
Rat-PDGF-BB
Response (RU)
Time (s)

FIGURE 21


A.
MOR8457-16
Cell Proliferation
1.4×10^6
1.2×10^6
1000000
800000
600000
-12
-10
-8
-6
Concentration Log [M]
HillSlope -2.713
IC50 1.43E-10
B.
MOR8457-GL
Cell Proliferation
1.4×10^6
1.2×10^6
1000000
800000
600000
-12
-10
-8
-6
Concentration Log [M]
HillSlope -3.898
IC50 2.01E-10