

1/100

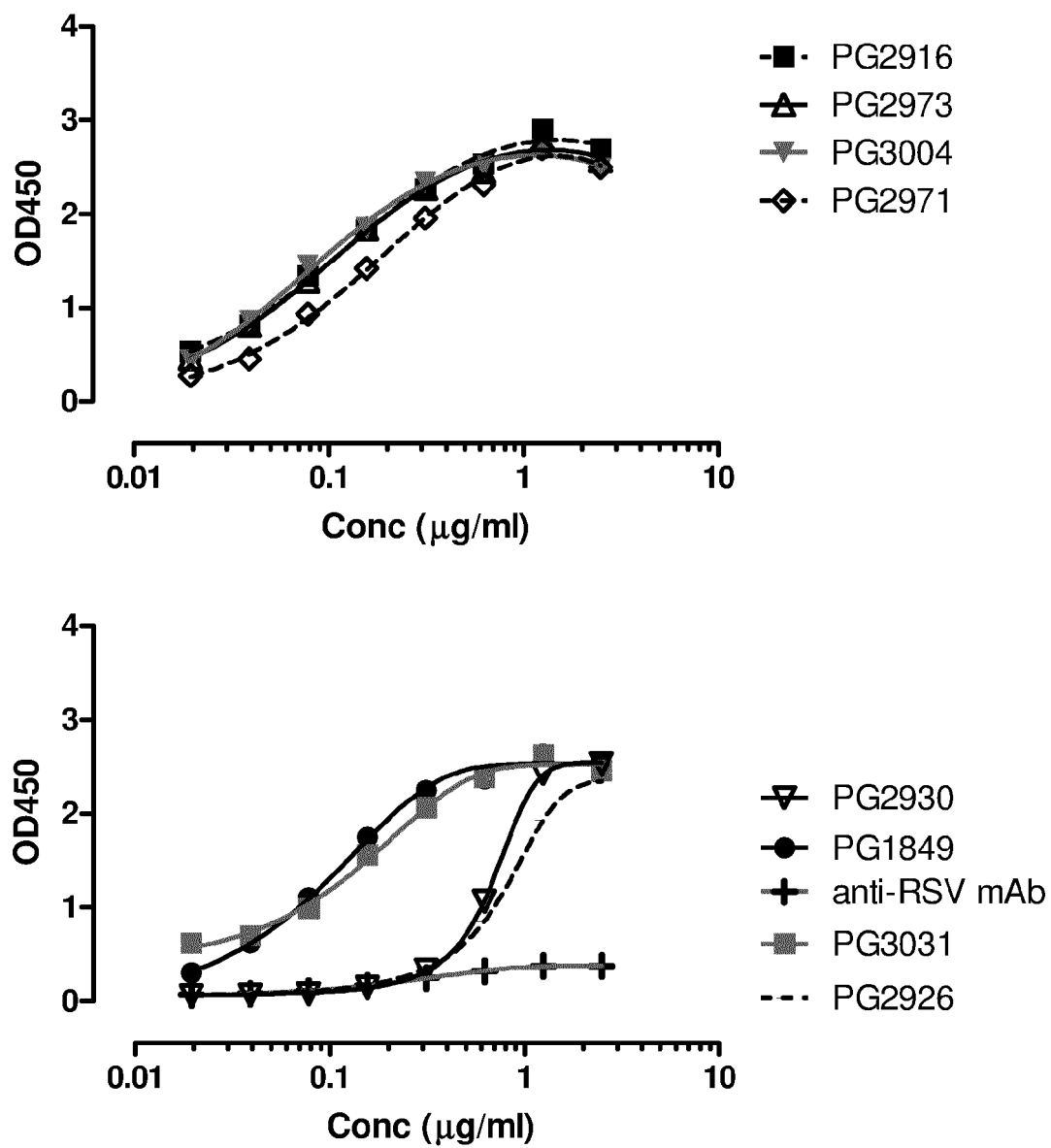


Fig. 1

2/100

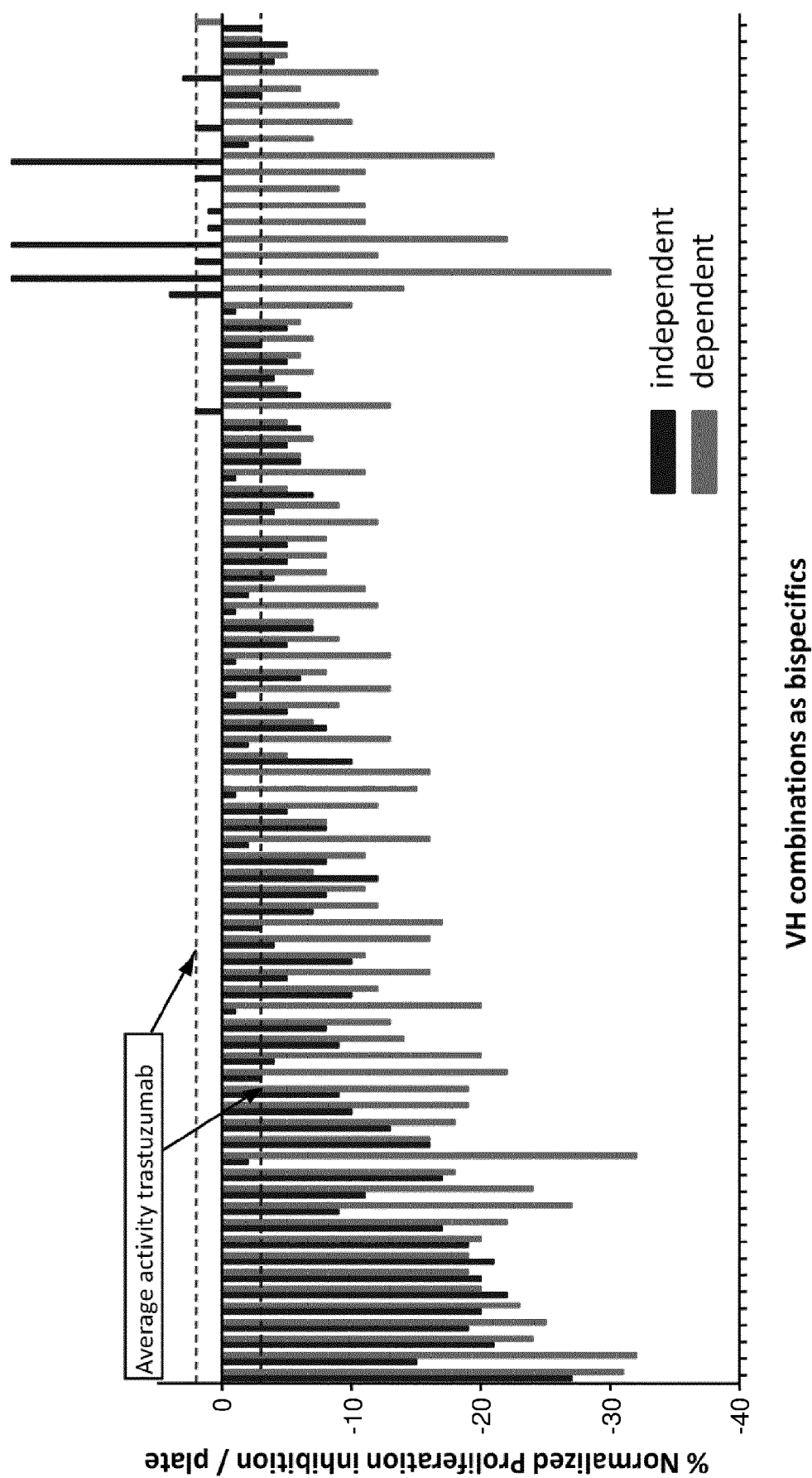


Fig. 2

3/100

PG codes: mAbs, PB codes: bispecific antibodies

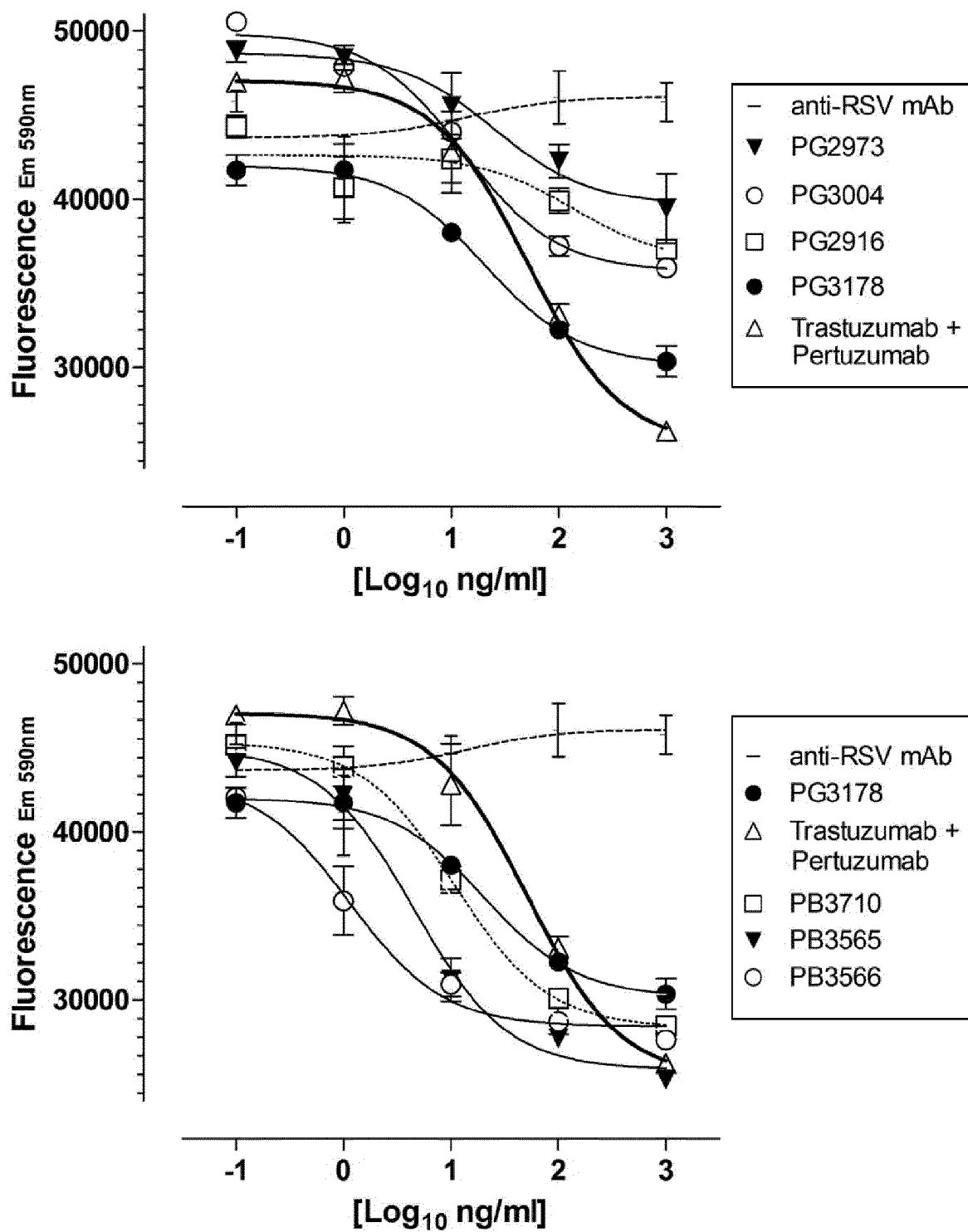


Fig. 3

4/100

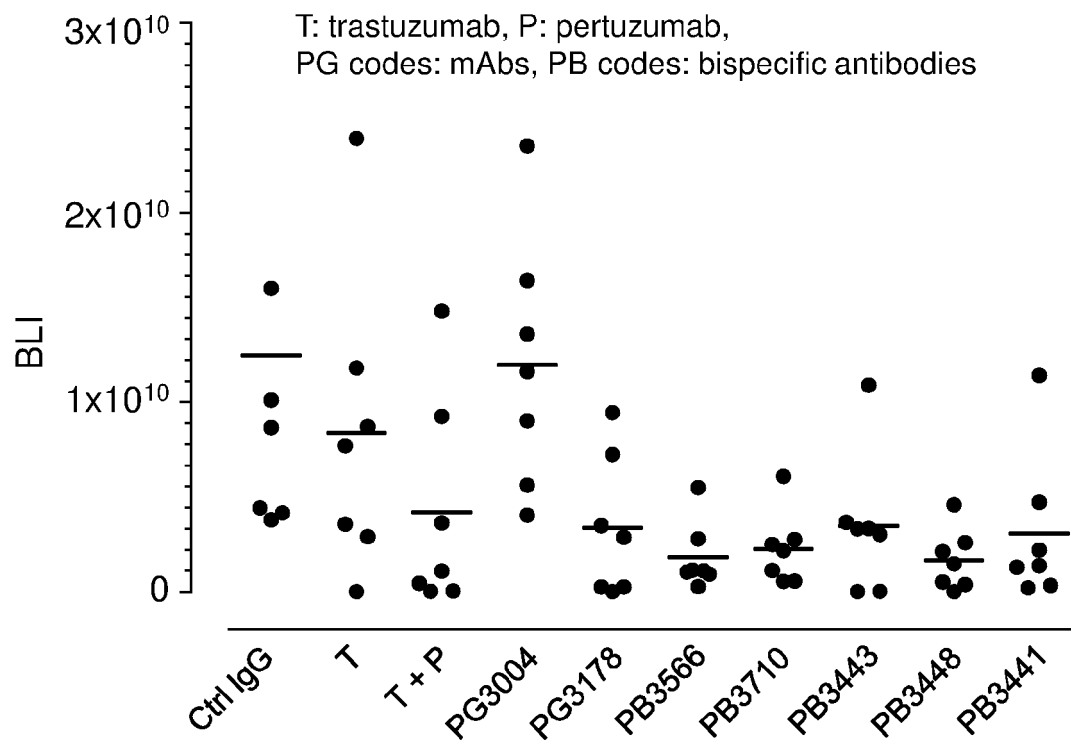


Fig. 4

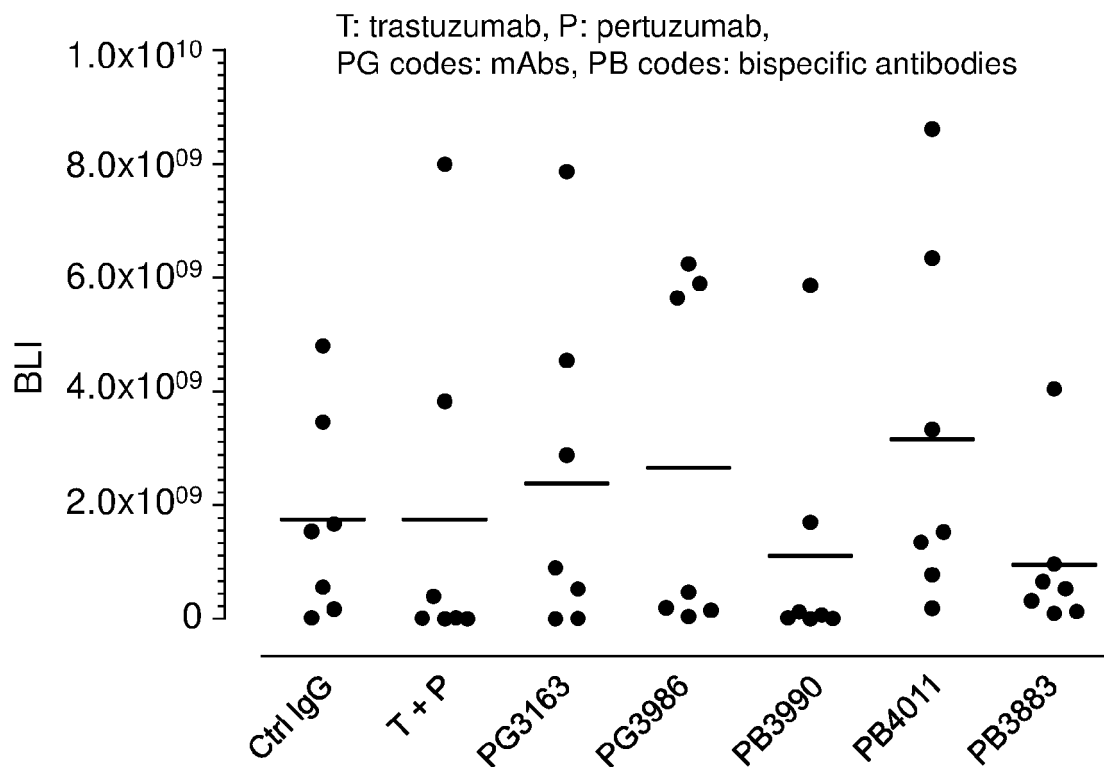


Fig. 5

5/100

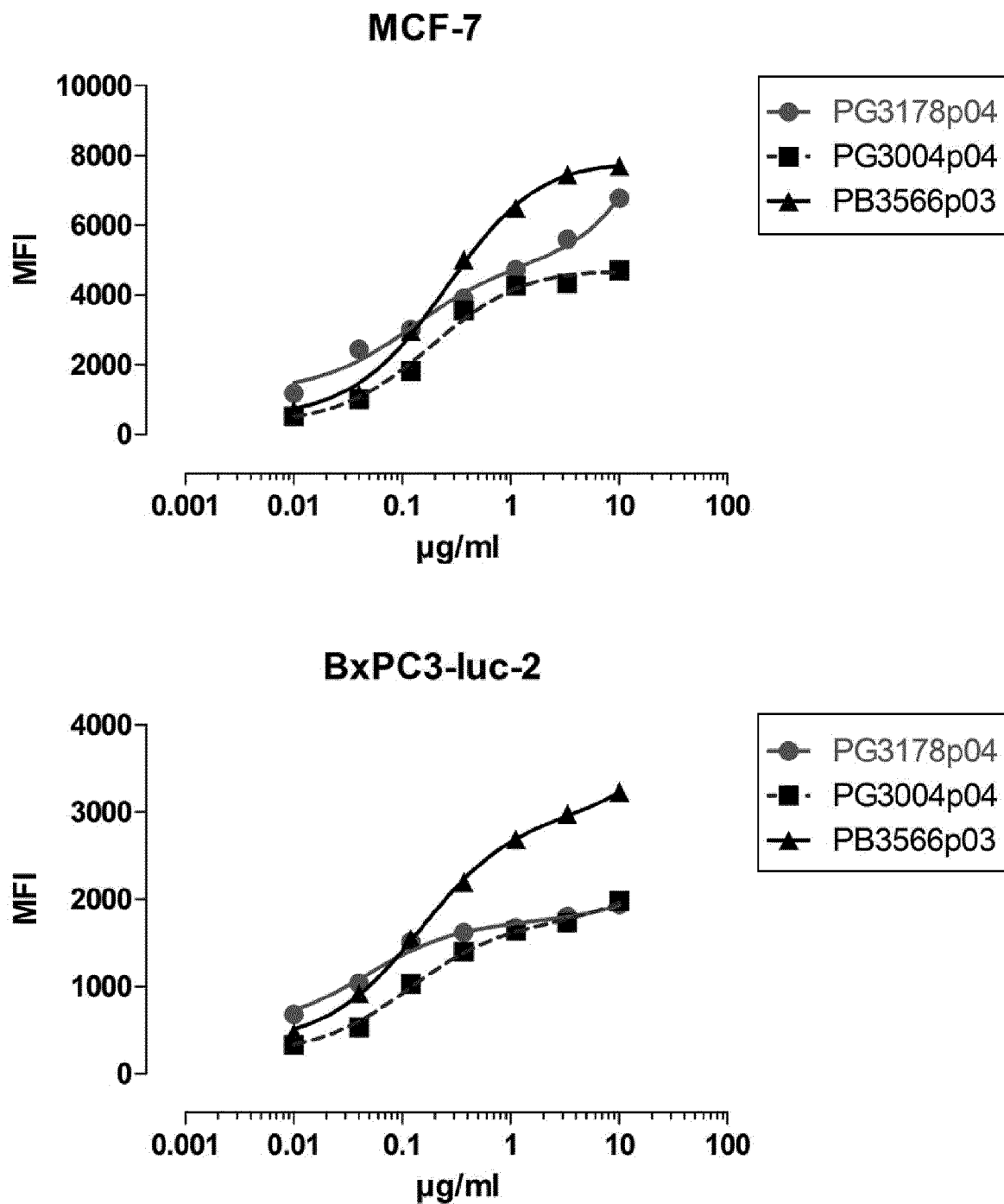


Fig. 6

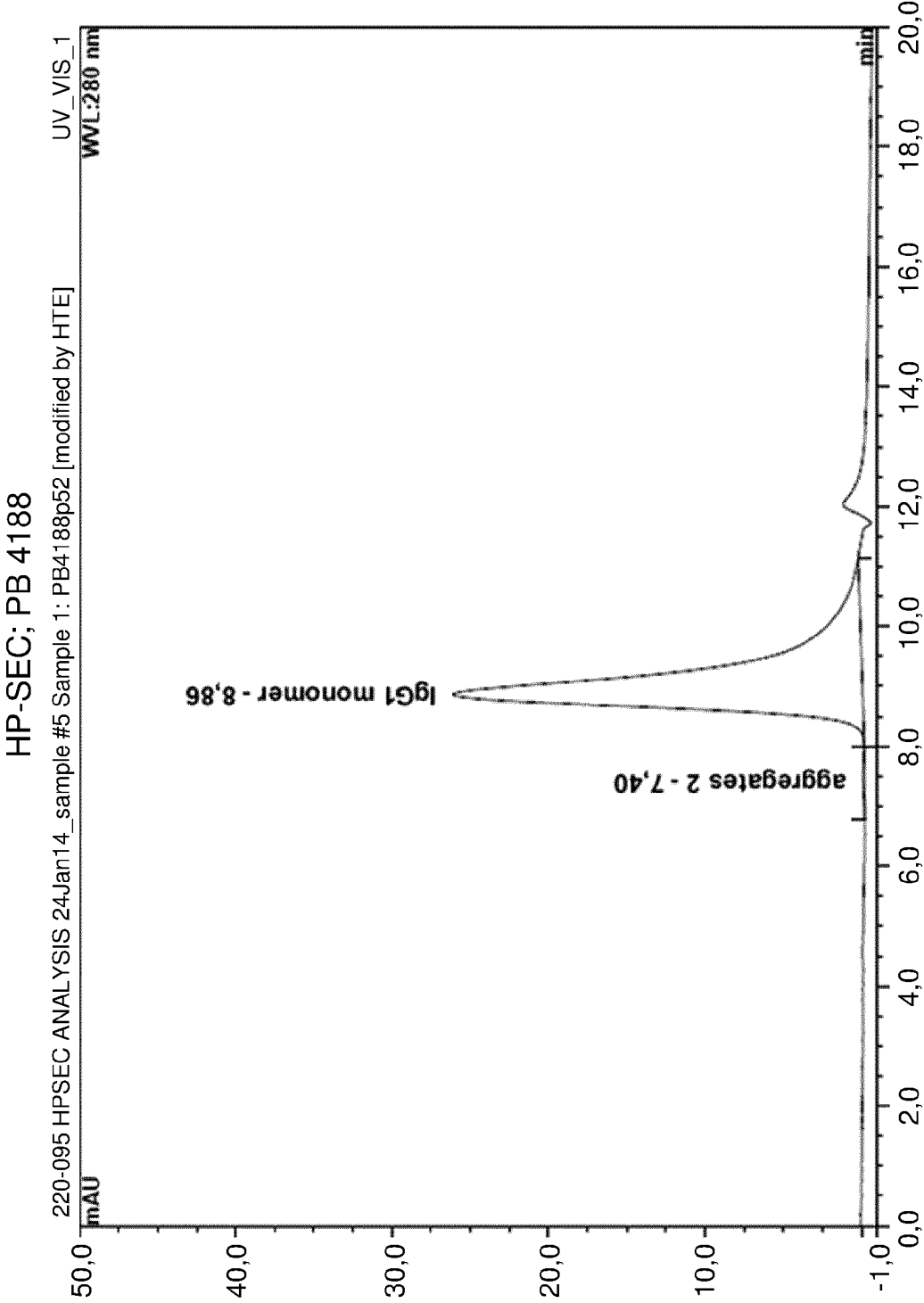


Fig. 7

7/100

CIEX-HPLC; PB 4188

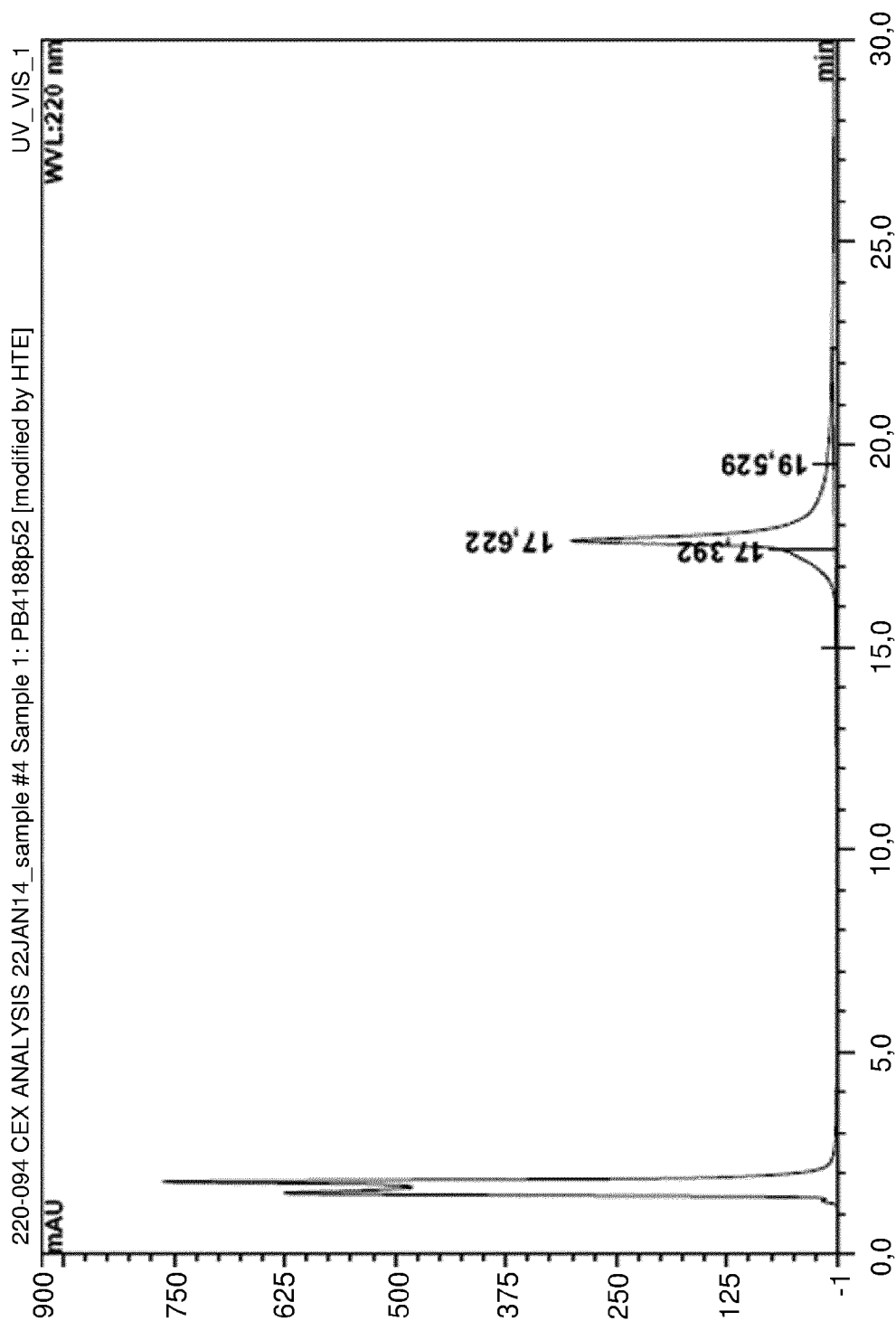


Fig. 7, Cont'd

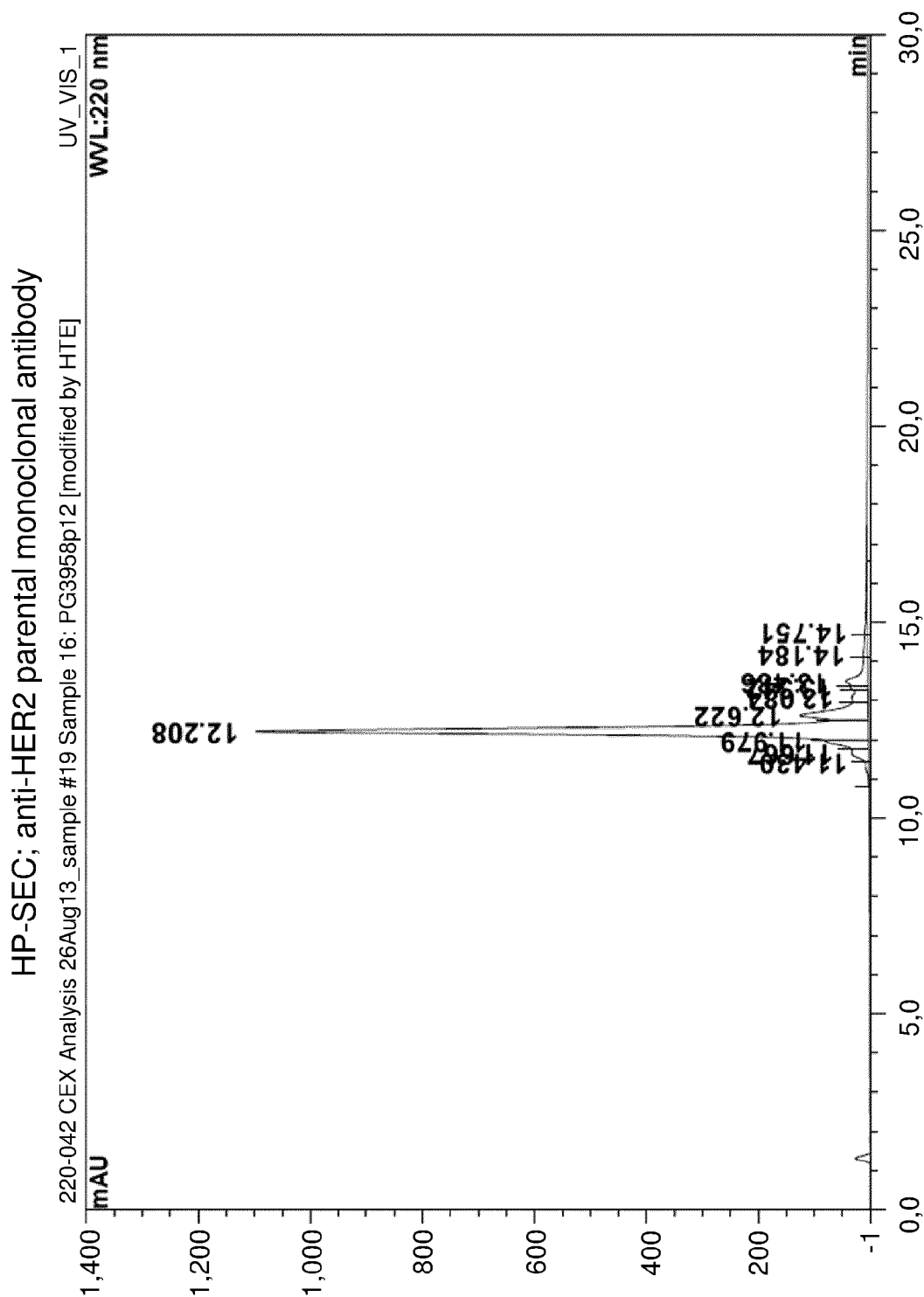


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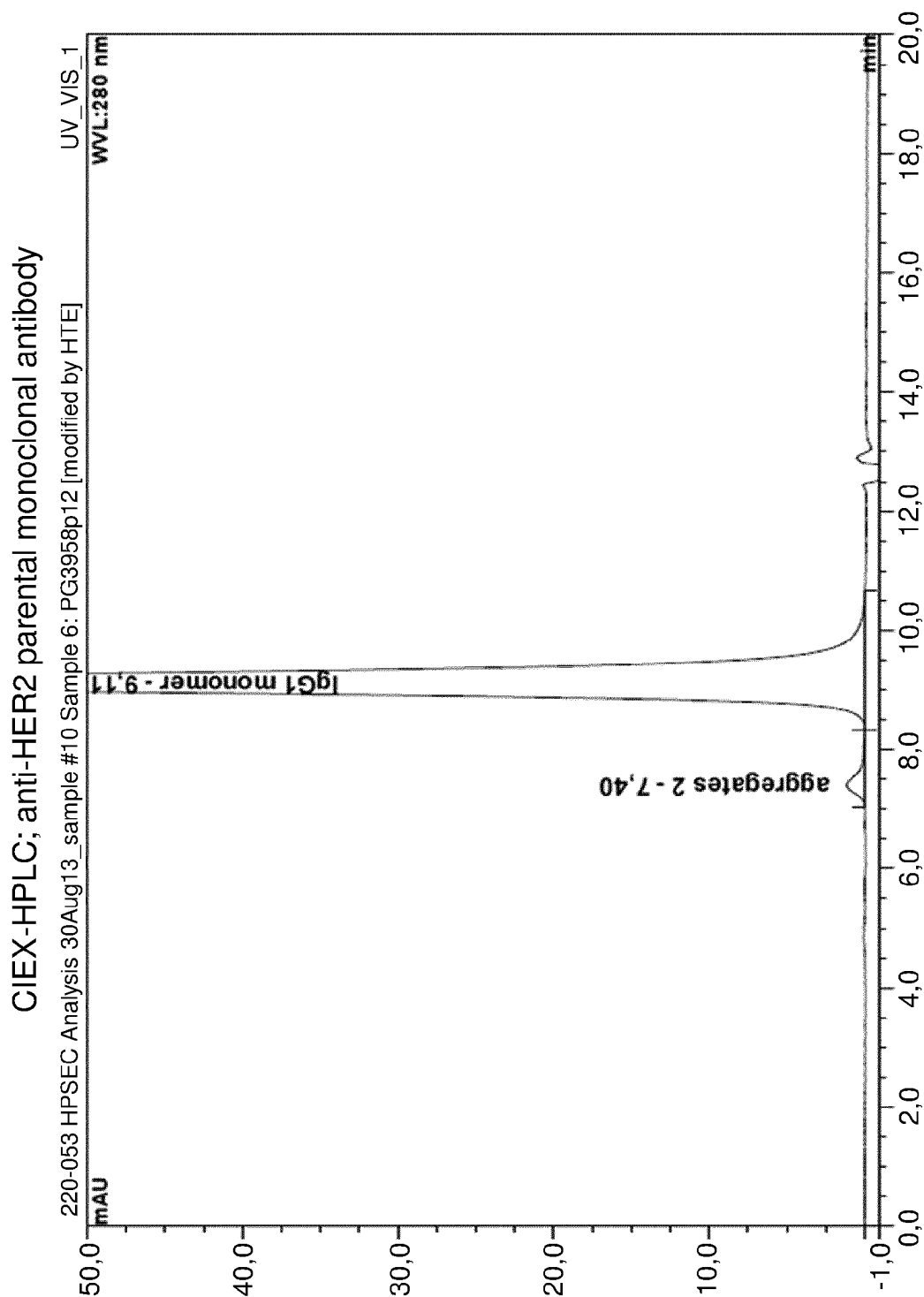


Fig. 7, Cont'd

10/100

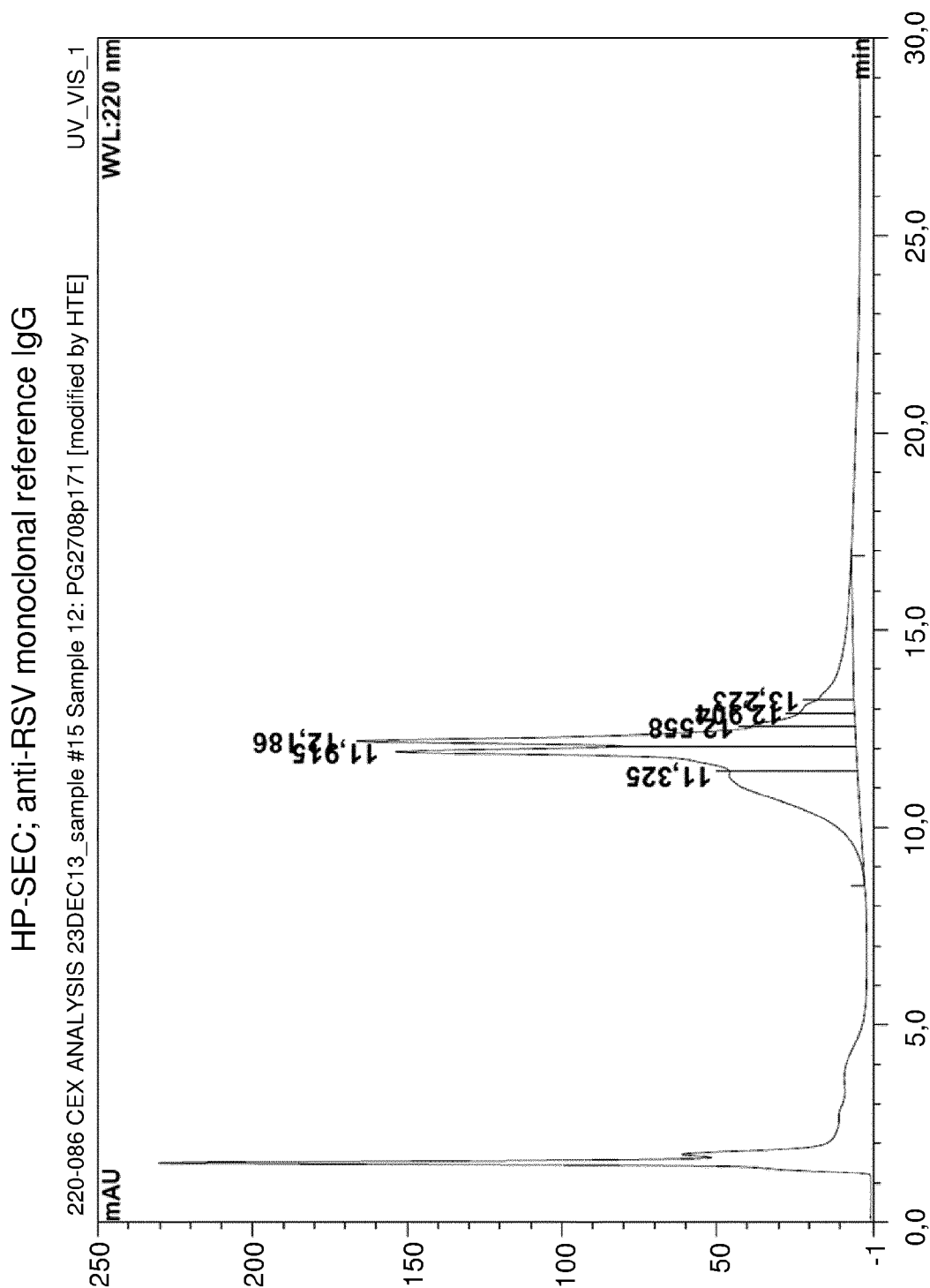


Fig. 7, Cont'd

11/100

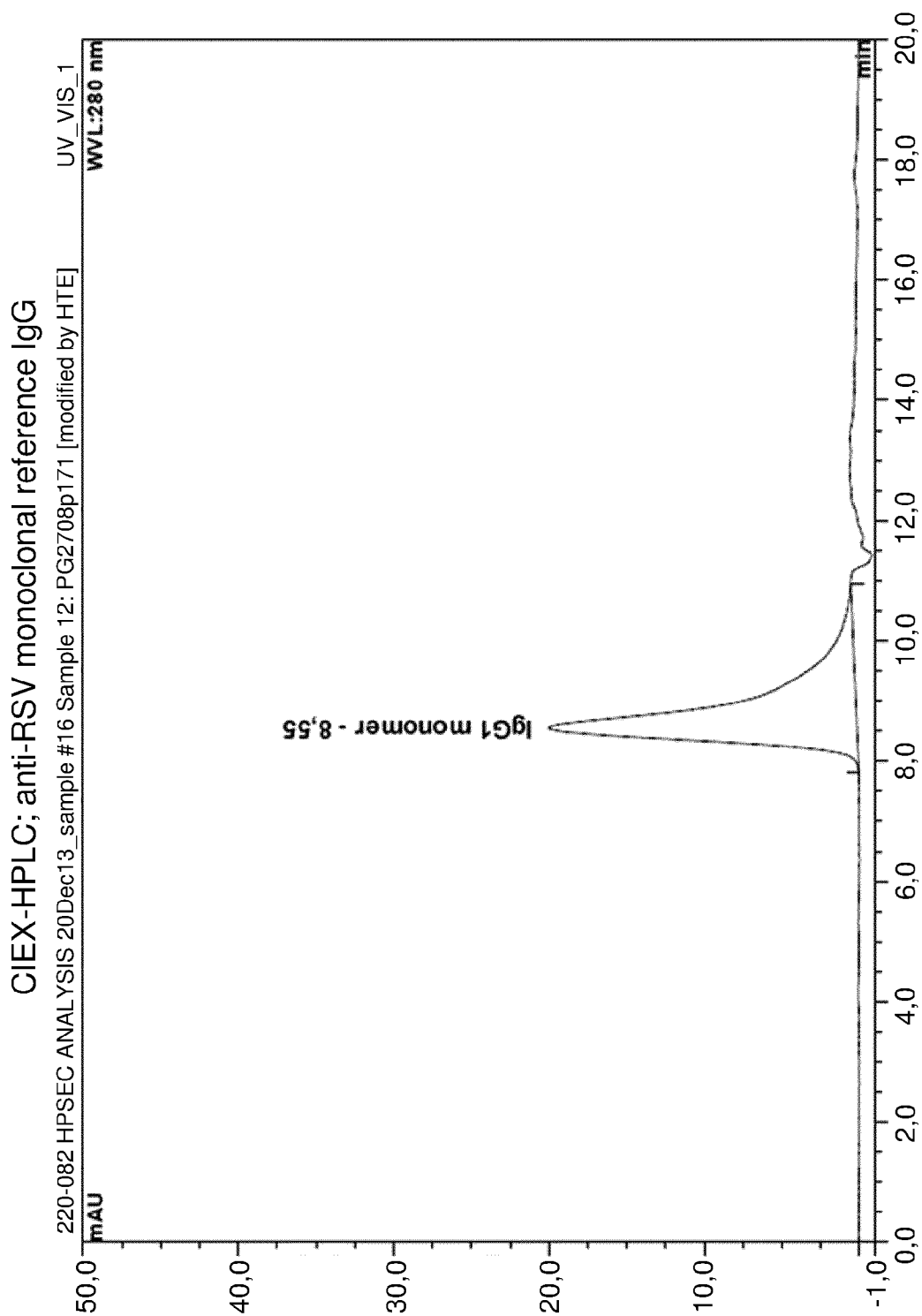


Fig. 7, Cont'd

12/100

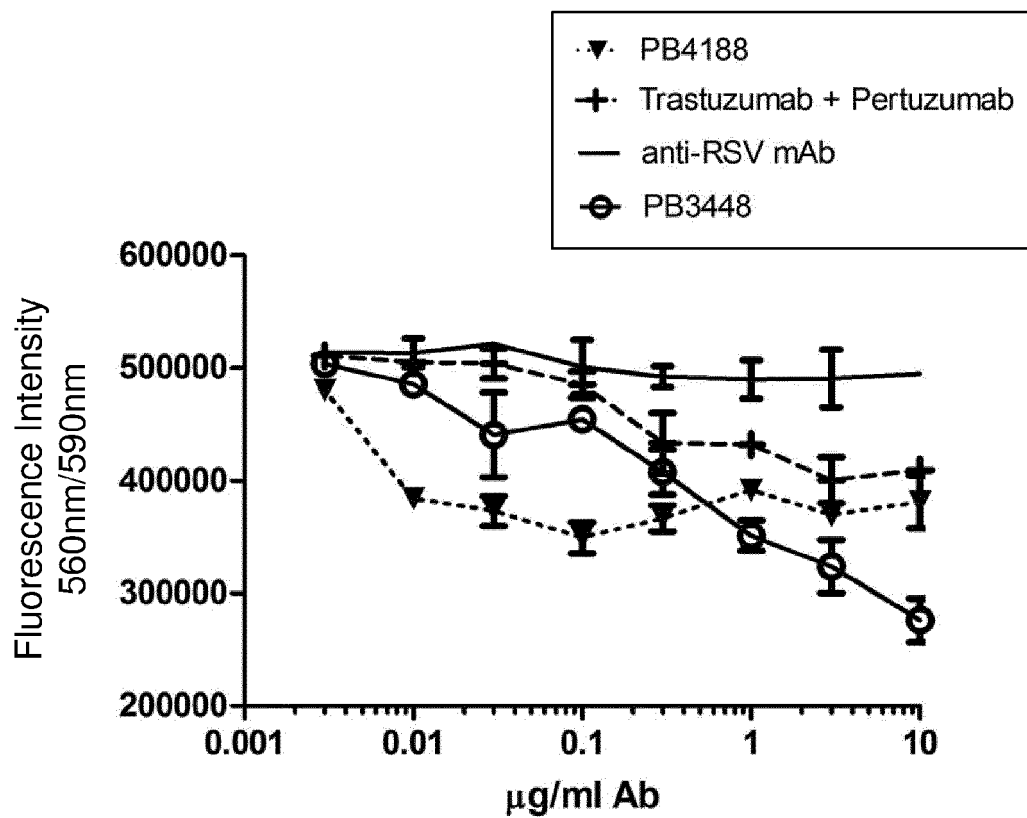


Fig. 8

13/100

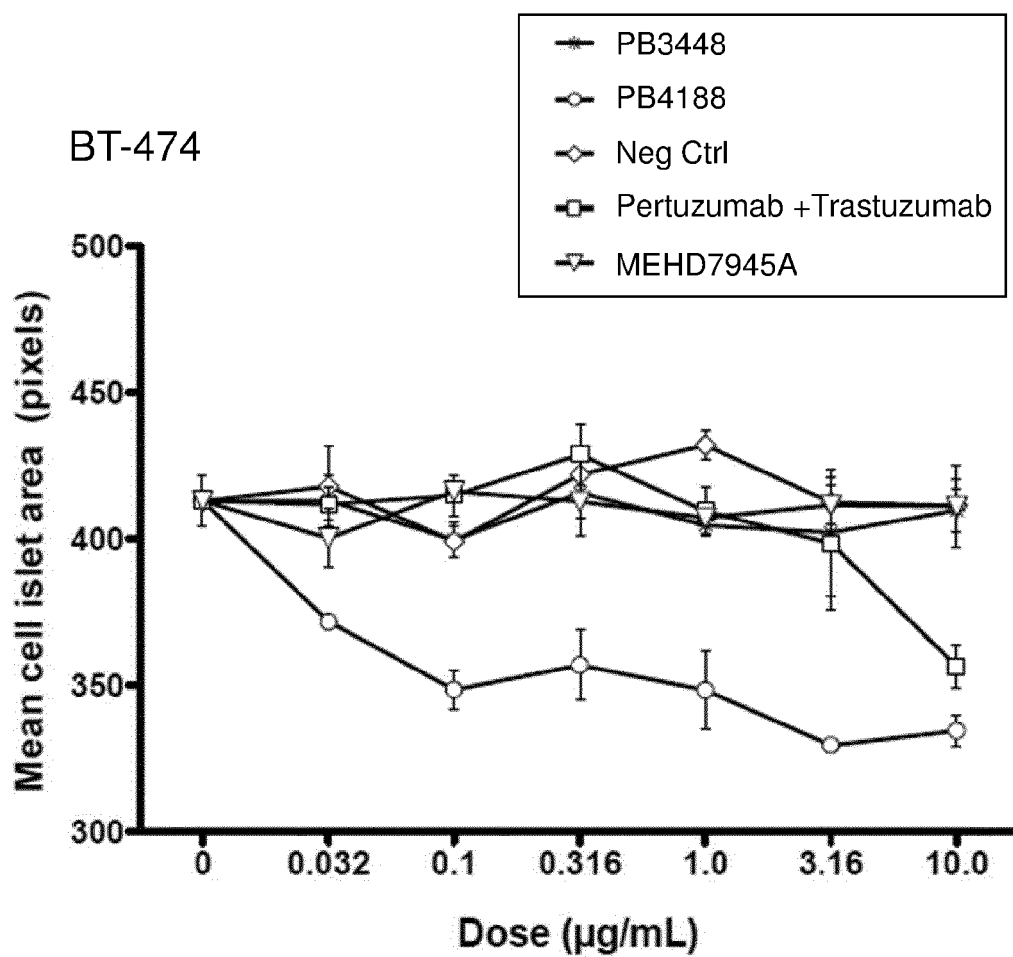


Fig. 9

14/100

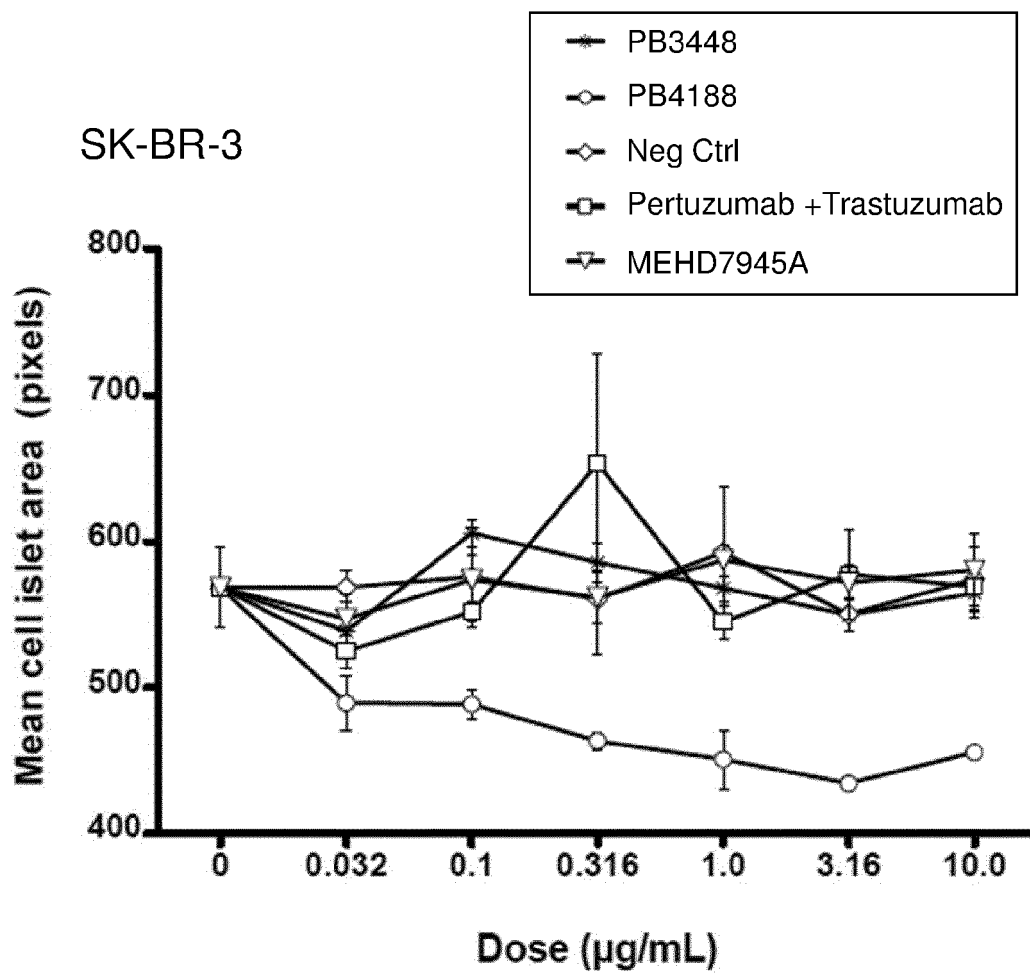


Fig. 9, Cont'd

15/100

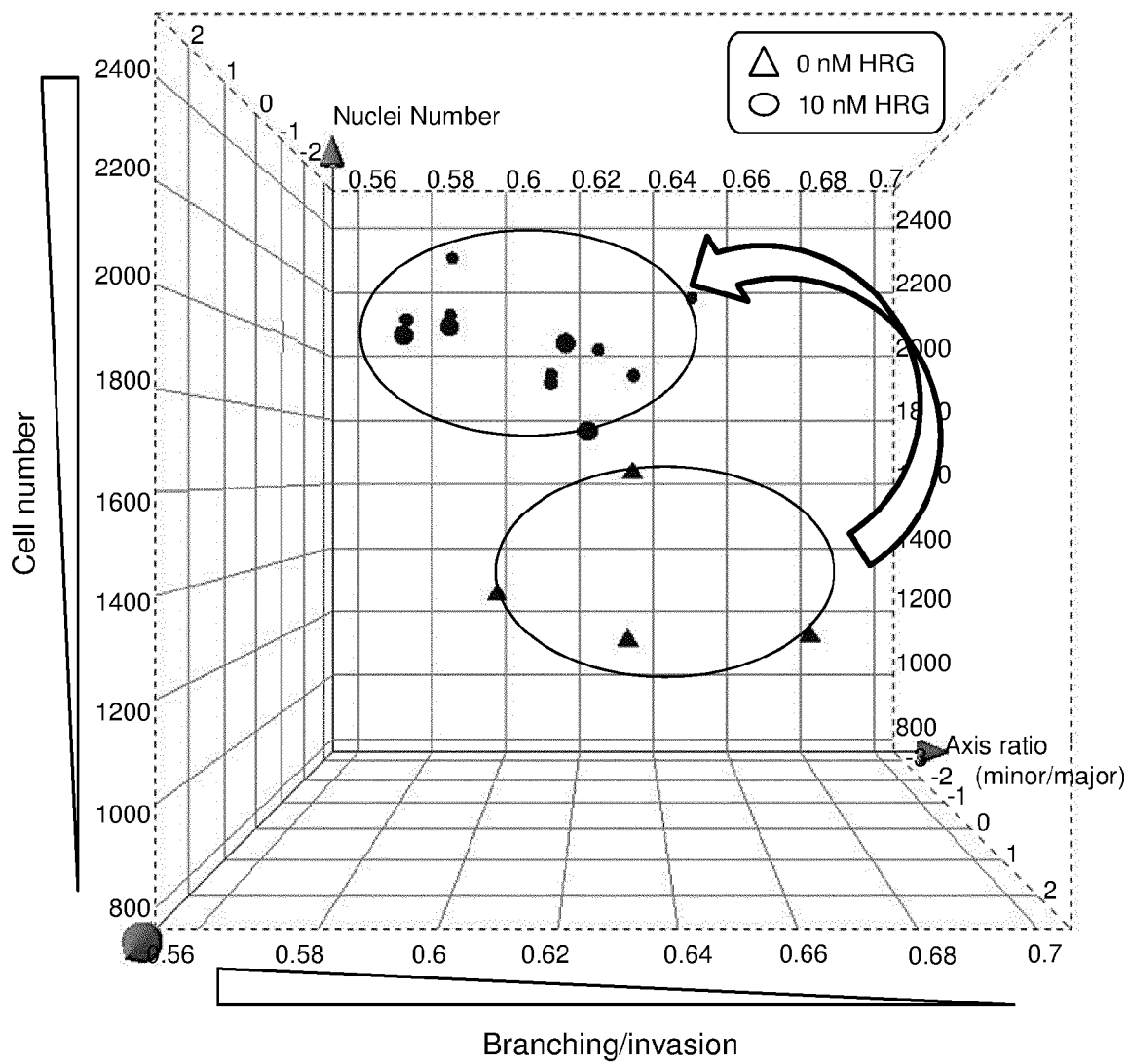
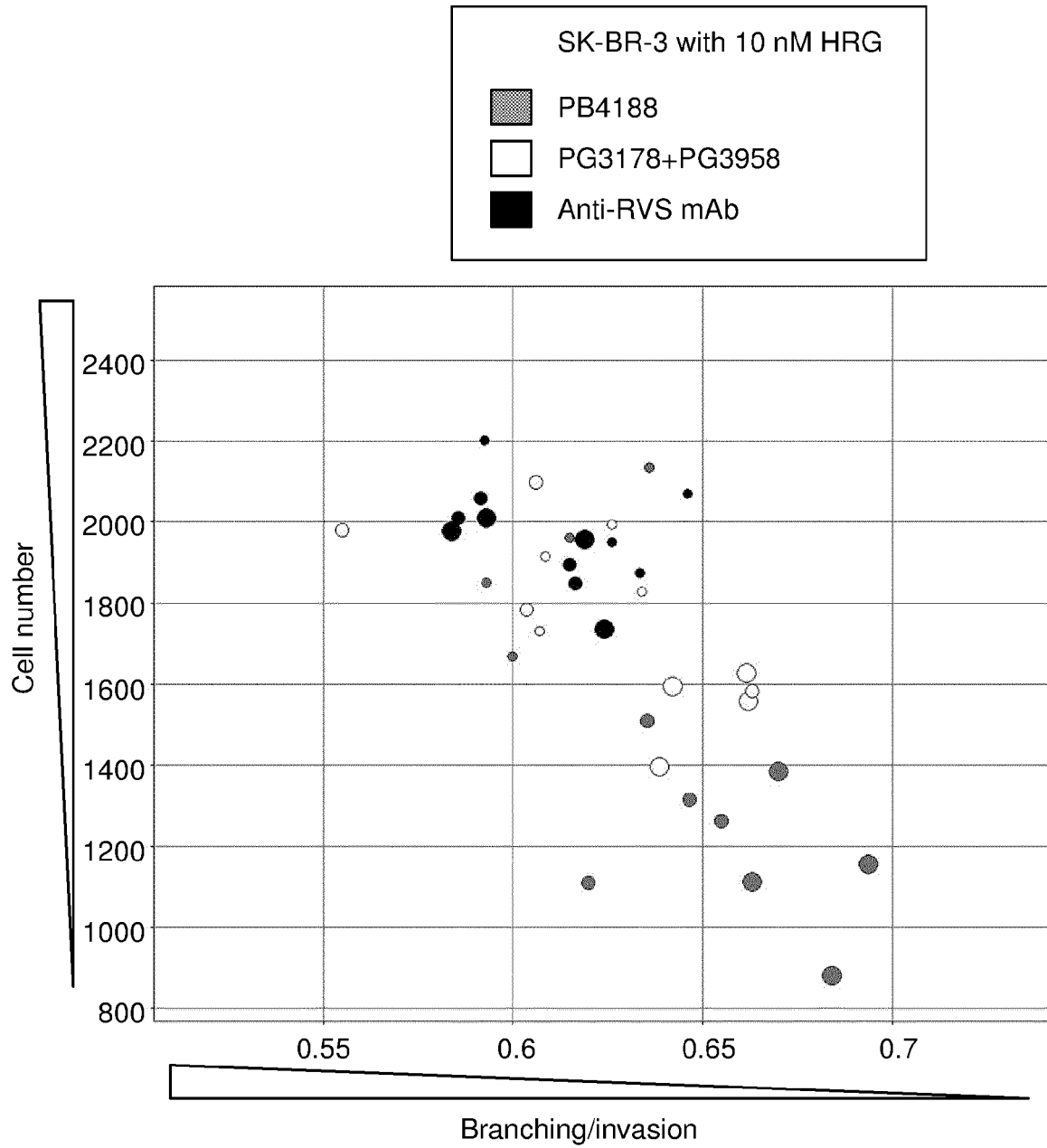


Fig. 10A

16/100



17/100

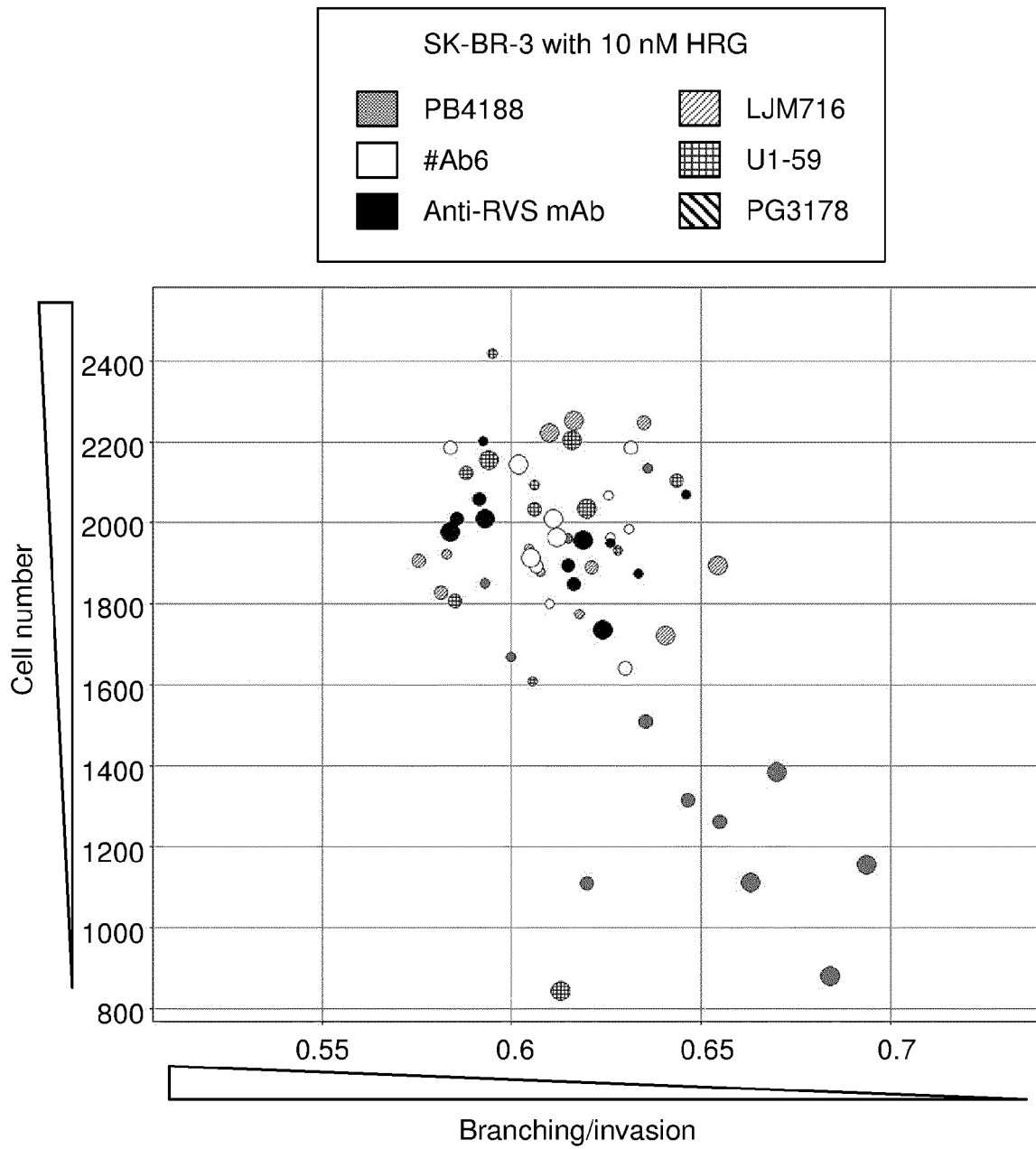


Fig. 10C

18/100

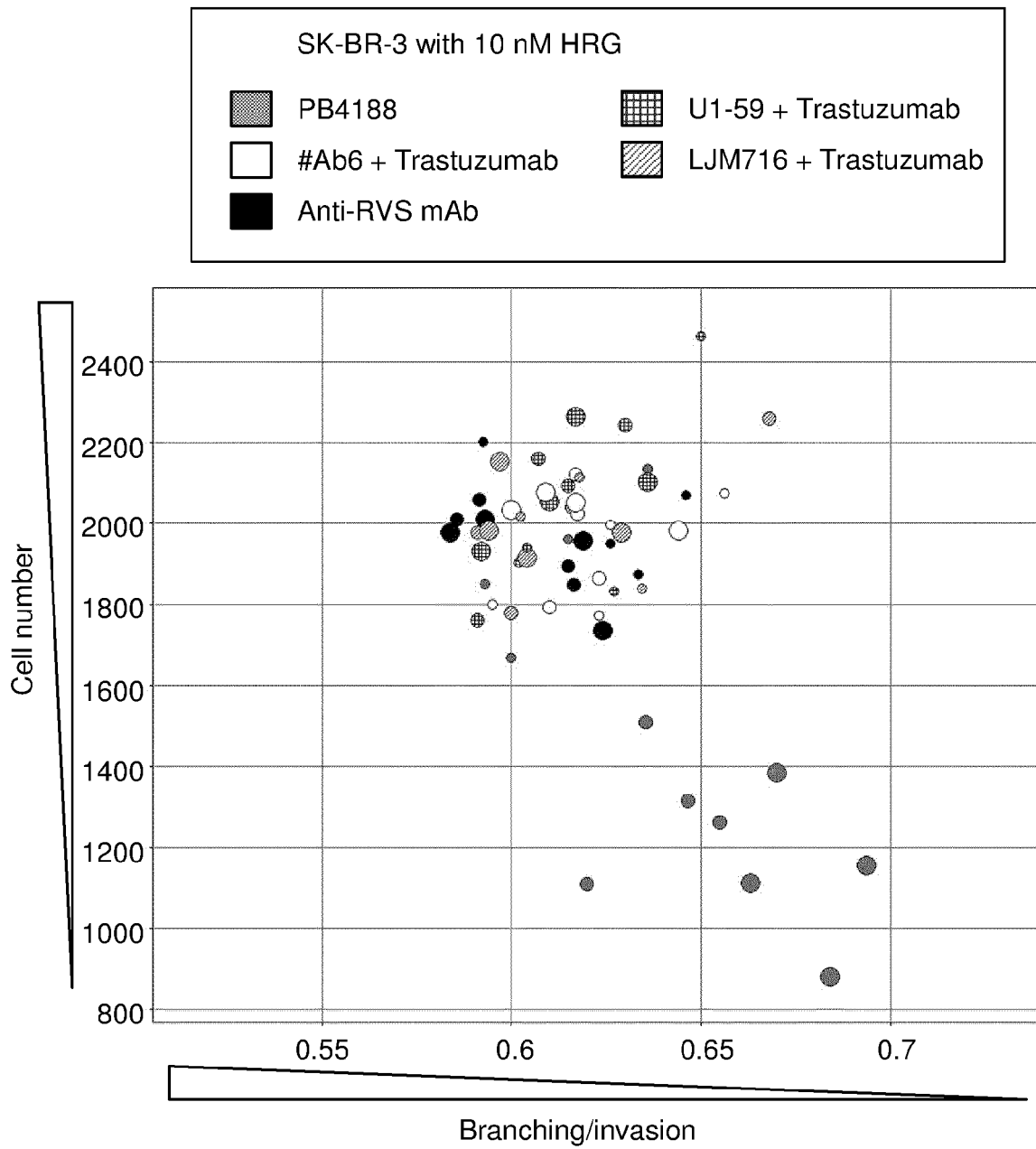


Fig. 10D

19/100

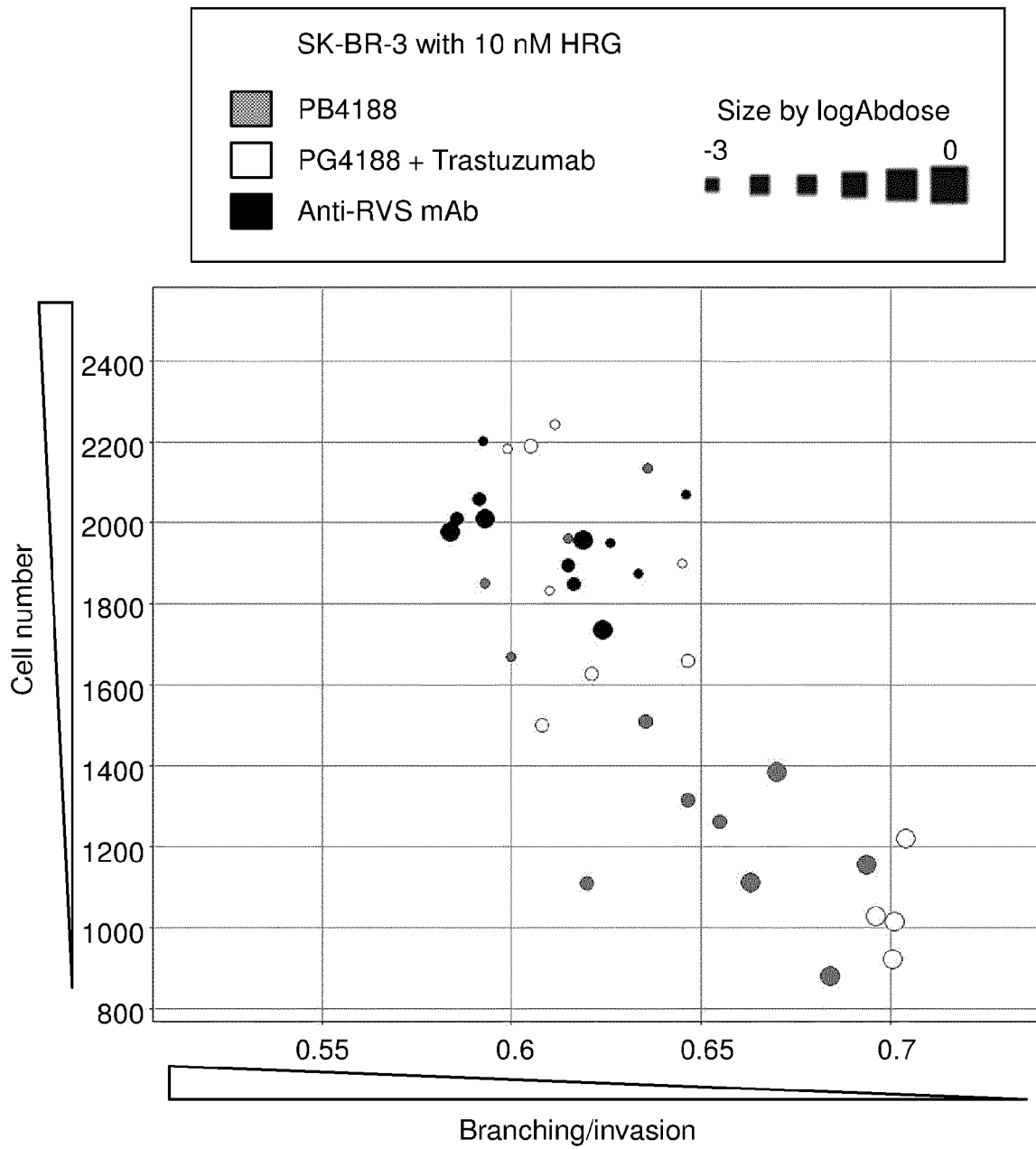


Fig. 10E

20/100

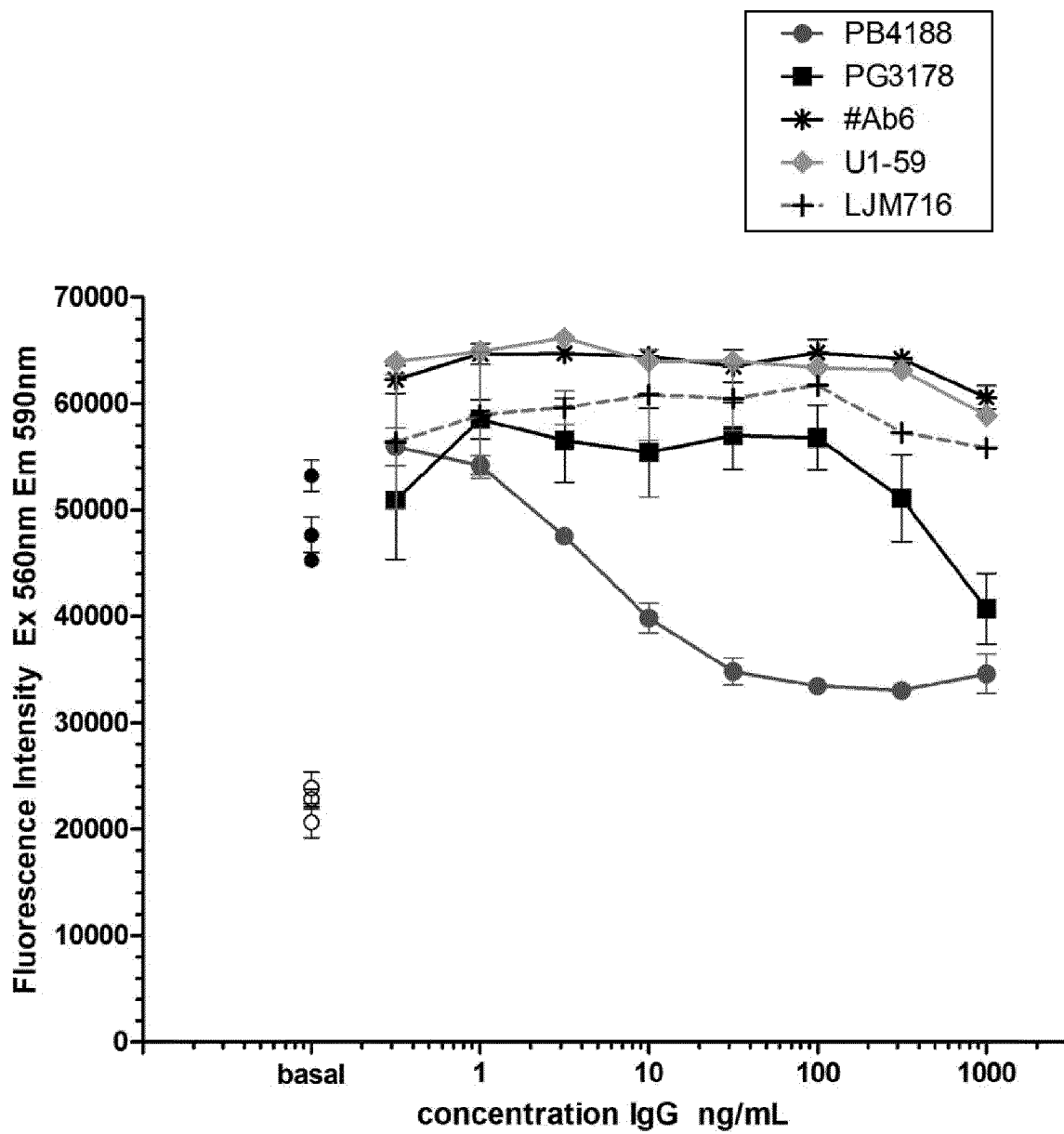


Fig. 11

21/100

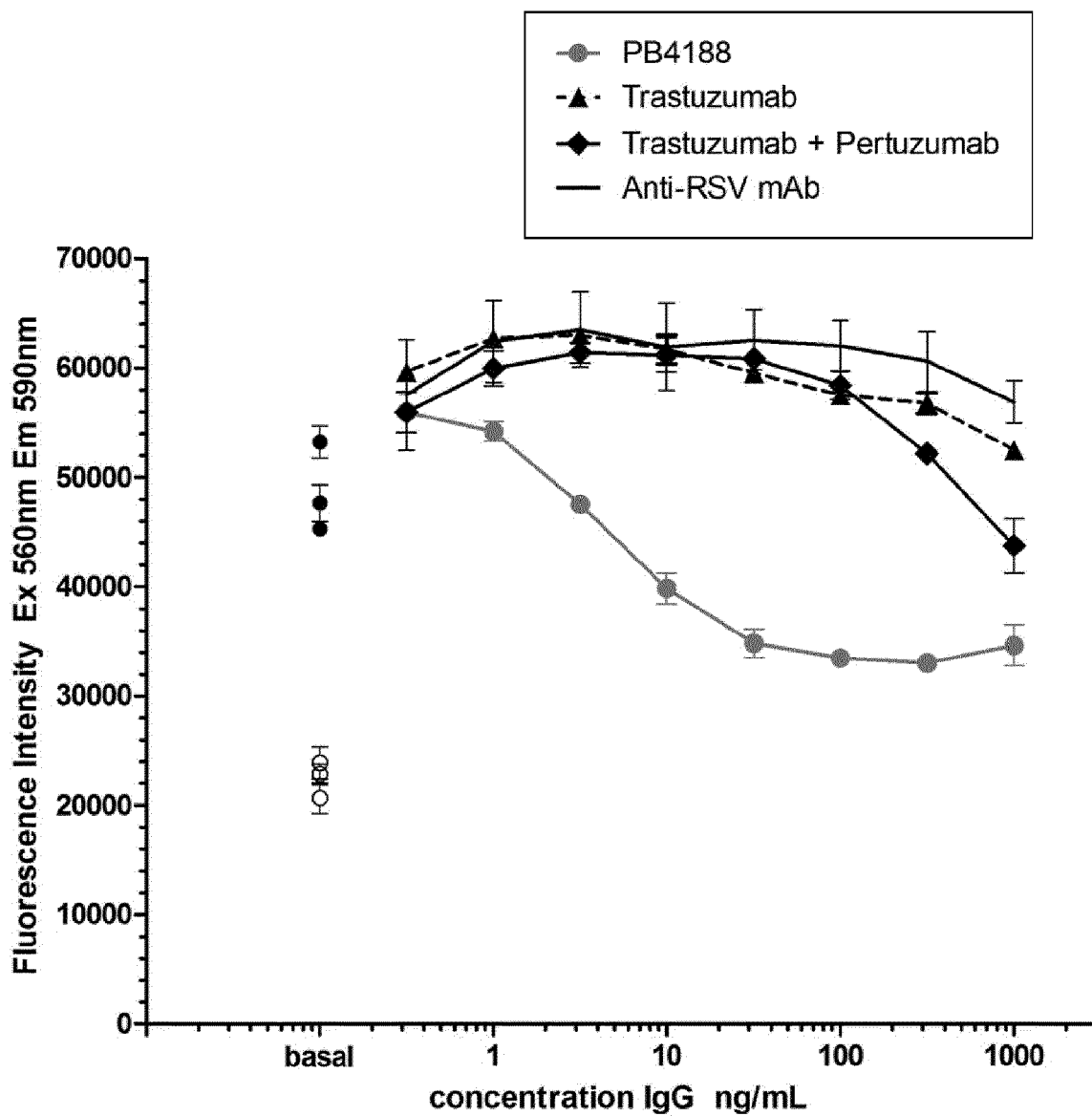


Fig. 11, Cont'd

22/100

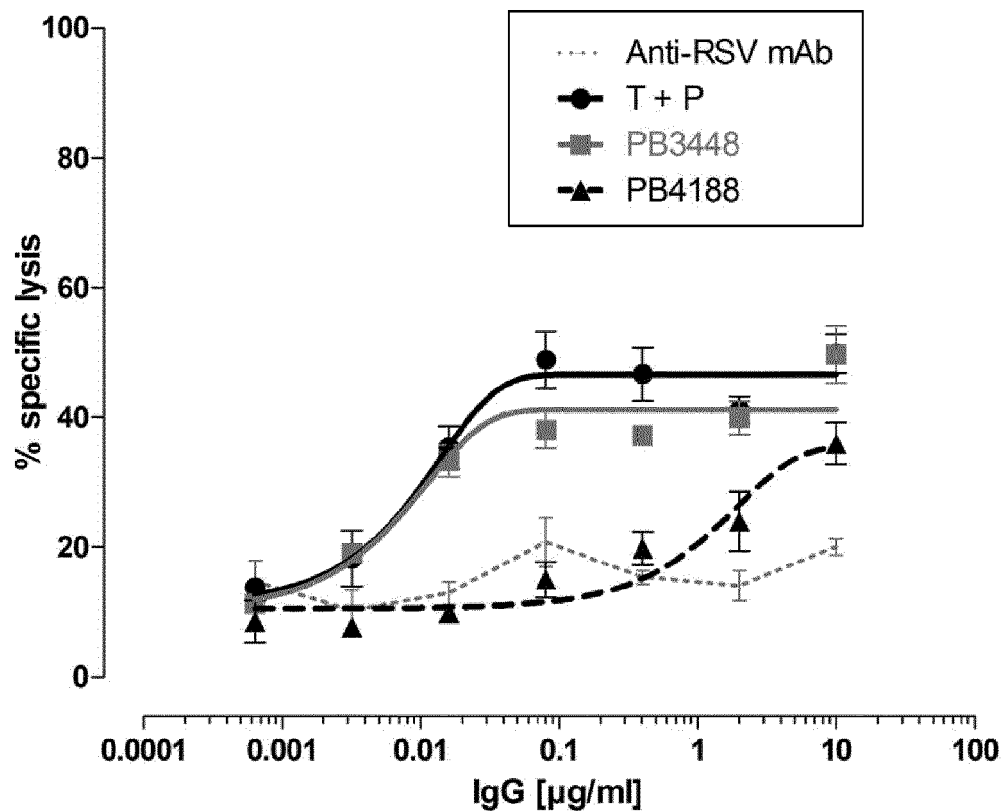
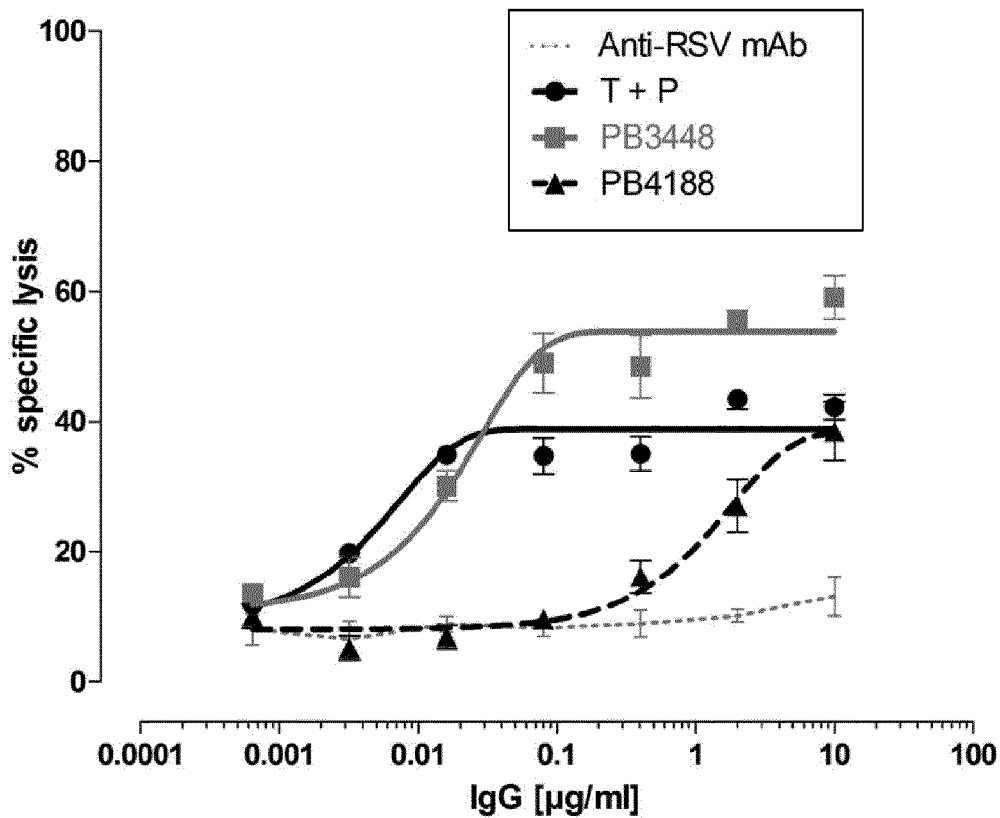


Fig. 12

23/100

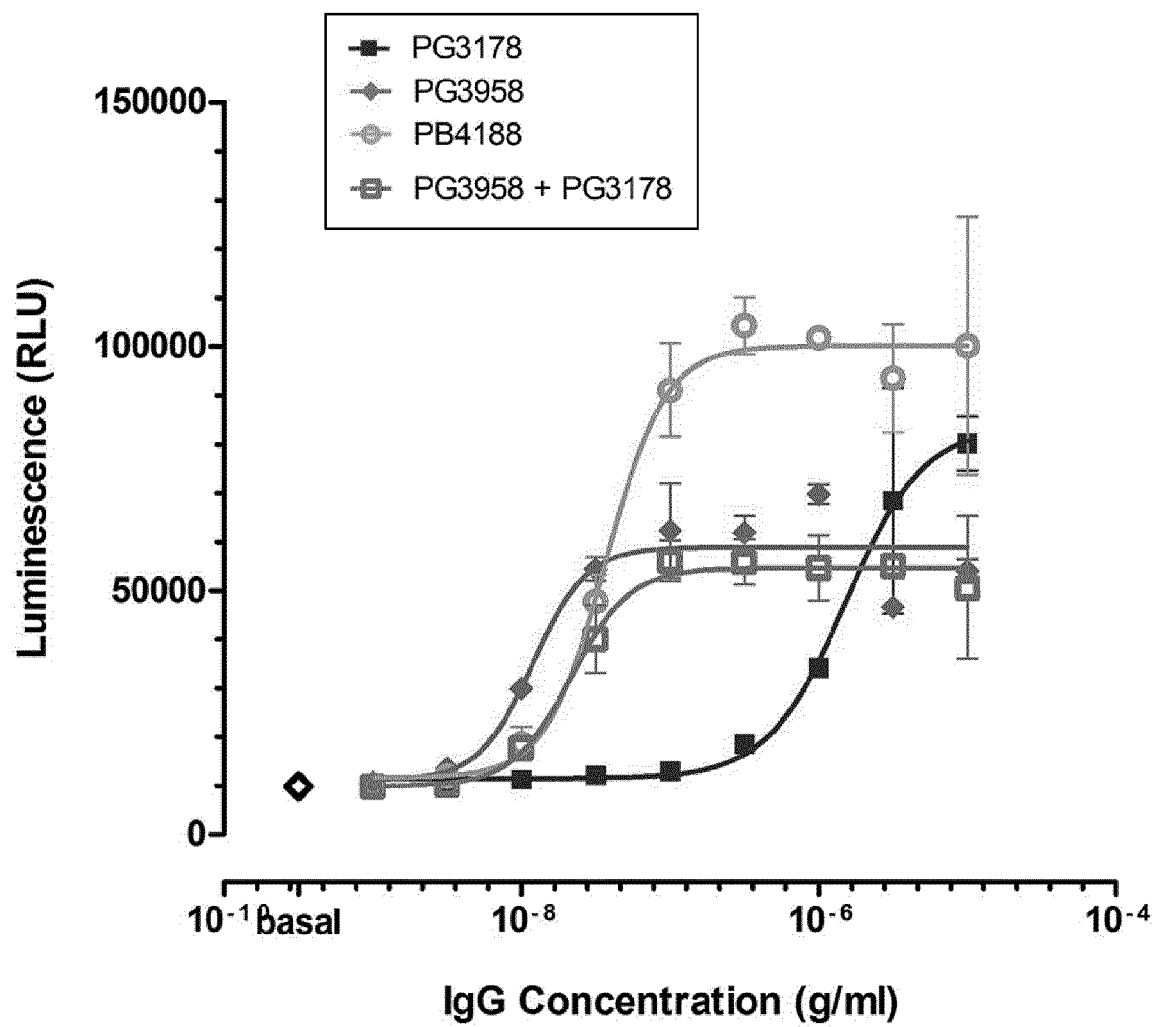


Fig. 13

24/100

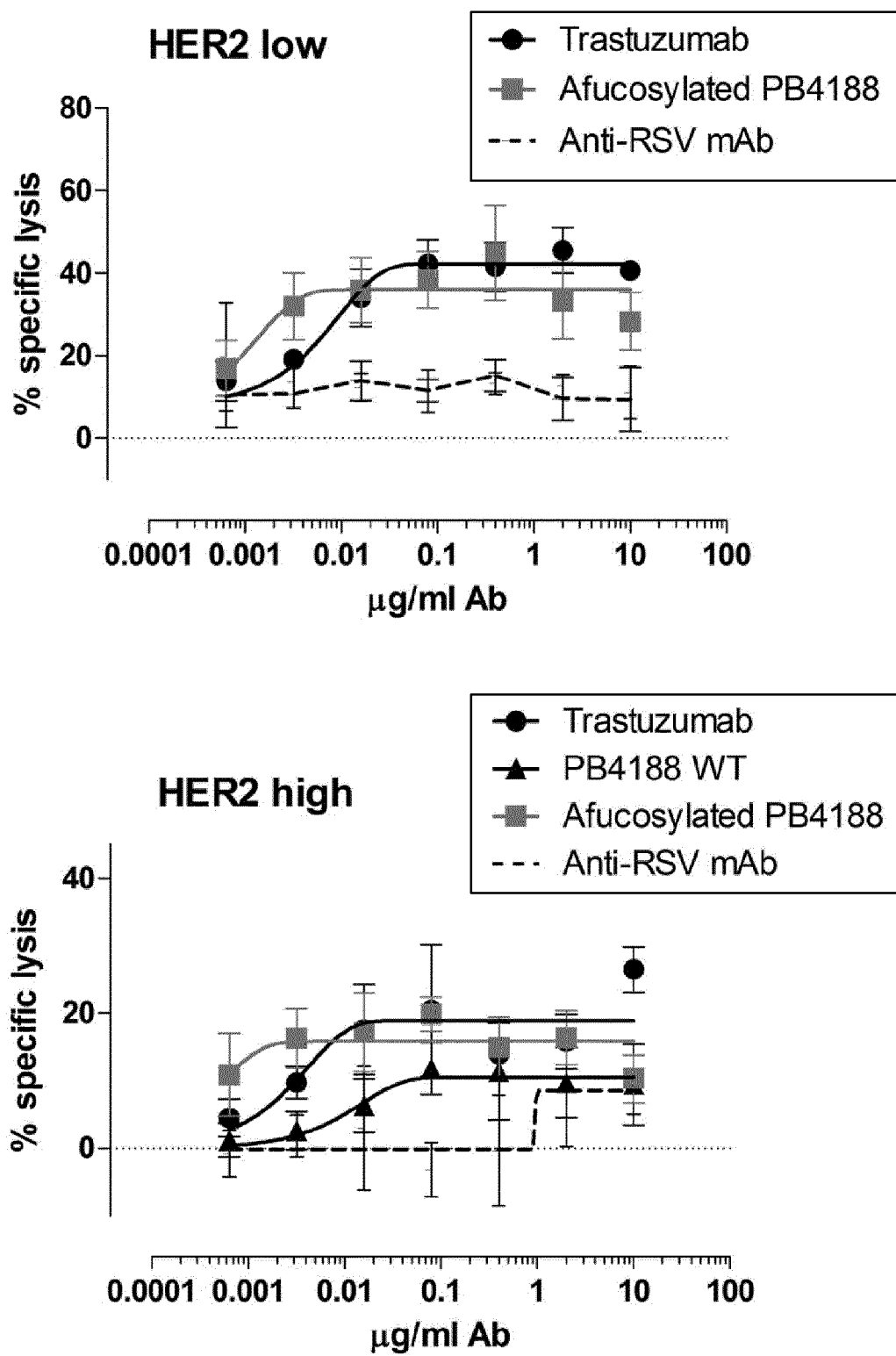


Fig. 14

25/100

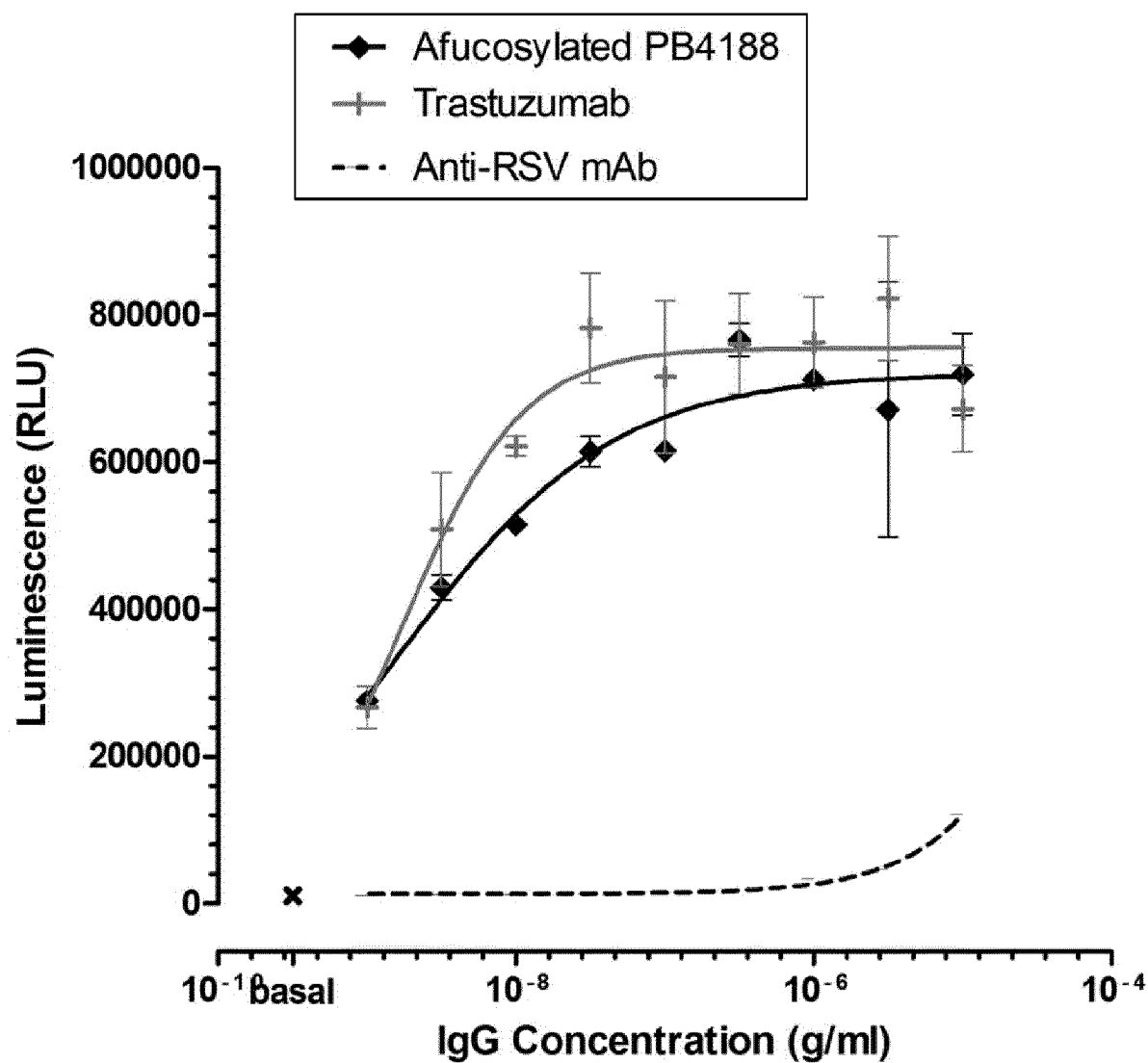
High Fc γ R variant (V158)

Fig. 15

26/100

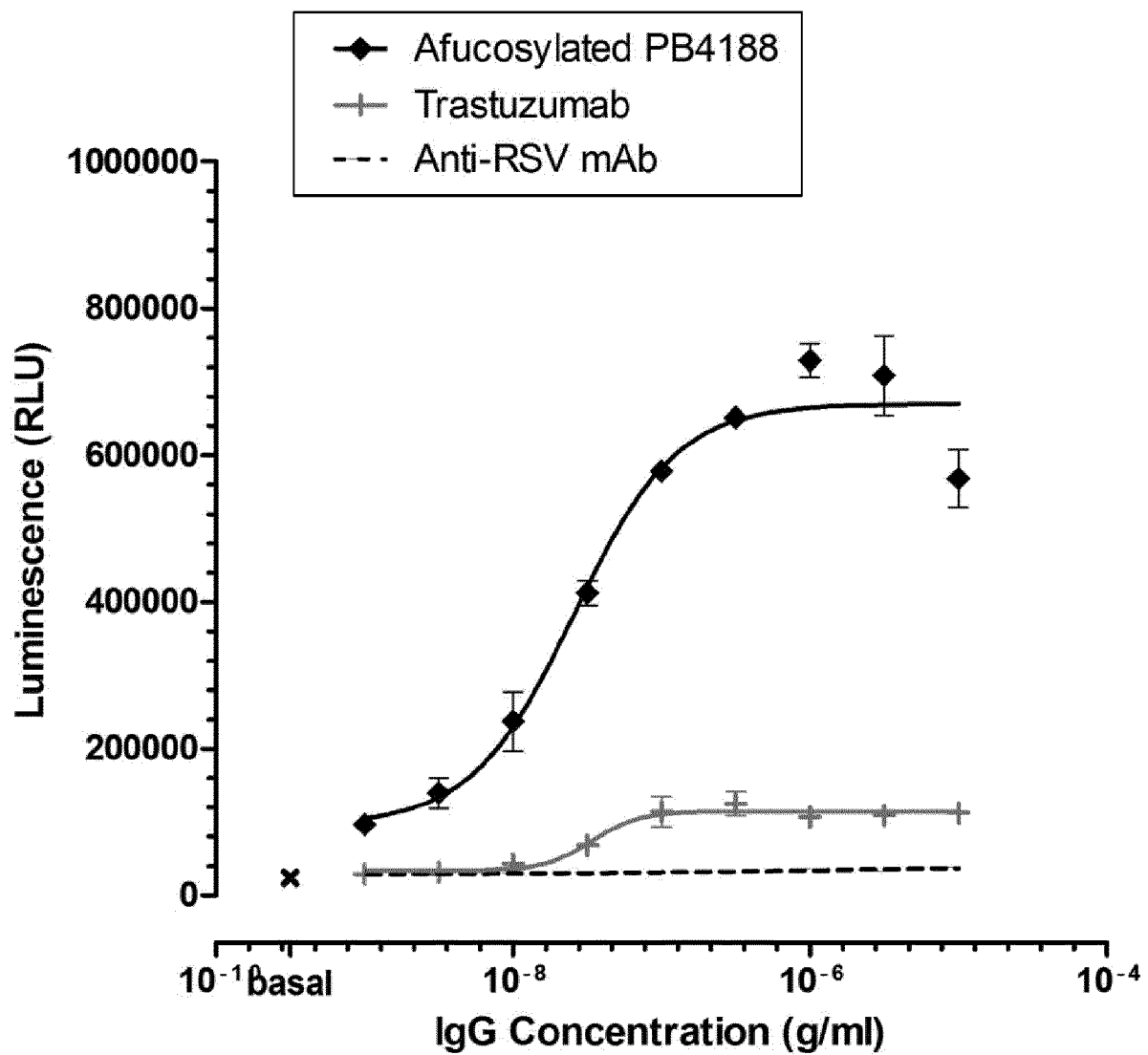
Low Fc γ R variant (F158)

Fig. 15, Cont'd

27/100

Fig. 16A

MF2926: heavy chain variable region sequence of an erbB-2 binding antibody

Nucleic acid sequence (underlined sequence encodes end of leader peptide):

```
1   SGCCCAGCCG GCCATGGCCC AGGTCCAGCT GCAGCAGTCT GGACCTGAGC TGGTGAAACC
61  TGGGGCTTCA GTGATGATTT CCTGCAAGGC TTCTGGTTAC TCATTCACTG GCTACCACAT
121 GAACTGGGTG AAGCAAAGTC CTGAAAAGAG CTTGAGTGG ATTGGAGACA TAAATCCTAG
181 CATTGGTACG ACTGCCCACA ACCAGATTTT CAGGGCCAAG GCCACAATGA CTGTTGACAA
241 ATCCTCCAAC ACAGCCTACA TGCAGCTCAA GAGCCTGACA TCTGAAGACT CTGGAGTCTT
301 TTACTGTGTT AGAAGAGGGG ACTGGTCCTT CGATGTCTGG GGCACAGGGA CCACGGTCAC
361 CGTCTCCAGT
```

Amino acid sequence:

QVQLQQSGPELVKPGASVMISCKASGYSFTGYHNMWVKQSPEKSLEWIGDINPSIGT
TAHNQIFRAKATMTVDKSSNTAYMQLKSLTSEDSGVFYCVRRGDWSFDVWGTGTTV
TVSS

CDR1: GYHNMWVKQSPEKSLE

CDR2: NQIFRA

CDR3: RGDWSFDV

28/100

Fig. 16A, Cont'd

MF2930: heavy chain variable region sequence of an erbB-2 binding antibody

Nucleic acid sequence (underlined sequence encodes end of leader peptide):

```
1  GGCCCAGCCG GCCATGGCCG AGGTCCAGCT GCAGCAGTCT GGGGCTGAAC TGGTGAAGCC
61 TGGAGCCTCA GTGATGATGT CCTGTAAGGT TTCTGGCTAC ACCTTCACTT CCTATCCTAT
121 AGCGTGGATG AAGCAGGTTC ATGGAAAGAG CCTAGAGTGG ATTGGAAATT TTCATCCTTA
181 CAGTGATGAT ACTAAGTACA ATGAAAACCTT CAAGGGCAAG GCCACATTGA CTGTAGAAAA
241 ATCCTCTAGC ACAGTCTACT TGGAGCTCAG CCGATTAAACA TCTGATGACT CTGCTGTTTA
301 TTACTGTGCA AGAAGTAACC CATTATATTA CTTTGTCTATG GACTACTGGG GTCAAGGAAC
361 CTCGGTCACC GTCTCCAGT
```

Amino acid sequence:

EVQLQQSGAELVKPGASVMMSCVKVSGYTF~~TS~~YPIAWMKQVHGKSLEWIGNFHPYSD
DTKYNENFKGKATLTVEKSSSTVYLELSRLTSDDSAVYYCARSNPLYYFAMDYWGQG
TSVTVSS

CDR1: SYPIAWMKQVHGKSLE

CDR2: NENFKG

CDR3: SNPLYYFAMDY

29/100

Fig. 16A, Cont'd

MF1849: heavy chain variable region sequence of an erbB-2 binding antibody

Nucleic acid sequence (underlined sequence encodes end of leader peptide):

```
1  GGCCCAGCCG GCCATGGCCC AGGTGCAGCT GGTGGAGTCT GGGGGAGGCG TGGTCCAGCC
61 TGGGAGGTCC CTGAGACTCT CCTGTGCAGC CTCTGGATTG ACCTTCAGTA GCTATGGCAT
121 GCACTGGGTC CGCCAGGCTC CAGGCAAGGG GCTGGAGTGG GTGGCAGTTA TATCATATGA
181 TGGGAAGTAAT AAATACTATG CAGACTCCGT GAAGGGCCGA TTCACCACTT CCAGAGACAA
241 TTCCAAGAAC ACGCTGTATC TGCAAATGAA CAGCCTGAGA GCTGAGGACA CGGCCGTGTA
301 TTACTGTGCA AAAGGTGACT ACGGTTCTTA CTCTTCTTAC GCCTTTGATT ATTGGGGCCA
361 AGGTACCCCTG GTCACCGTCT CCAGT
```

Amino acid sequence:

QVQLVESGGGVVQPGRSLRLSCAASGFTFSSYGMHWVRQAPGKGLEWVAVISYDGS
NKYYADSVKGRFTISRDN SKNTLYLQMNSLRAEDTAVYYCAKGDYGSYSSYAFDYWG
QGTLVTVSS

CDR1: SYGMH

CDR2: VISYDGSNKYYADSVKG

CDR3: GDYGSYSSYAFDY

30/100

Fig. 16A, Cont'd

MF2973: heavy chain variable region sequence of an erbB-2 binding antibody

Nucleic acid sequence (underlined sequence encodes end of leader peptide):

```
1  GGCCCAGCCG GCCATGGCCC AGGTGCAGCT GAAGCAGTCT GGGGCTGAGC TGGTGAGGCC
61 TGGGGCTTCA GTGAAGTTGT CCTGCAAGGC TTCTGGCTAC ATTTTCACTG GCTACTATAT
121 AAACCTGGTTG AGGCAGAGGC CTGGACAGGG ACTTGAATGG ATTGCAAAAA TTTATCCTGG
181 AAGTGGTAAT ACTTACTACA ATGAGAAGTT CAGGGGCAAG GCCACACTGA CTGCAGAAGA
241 ATCCTCCAGC ACTGCCTACA TGCAGCTCAG CAGCCTGACA TCTGAGGACT CTGCTGTCTA
301 TTTCTGTGCA AGAGGGCCCC ACTATGATTA CGACGGCCCC TGGTTTGTTT ACTGGGGCCA
361 AGGGACTCTG GTCACCGTCT CCAGT
```

Amino acid sequence:

QVQLKQSGAELVRPGASVKLSCKASGYIFTGYYINWLRQRPGQGLEWIAKIYPGSGNT
YYNEKFRGKATLTAEESSTAYMQLSSLTSEDSAVYFCARGPHYDYDGPWFVYWGQ
GTLVTVSS

CDR1: GYYINWLRQRPGQGLE

CDR2: NEKFRG

CDR3: GPHYDYDGPWFVY

31/100

Fig. 16A, Cont'd

MF3004: heavy chain variable region sequence of an erbB-2 binding antibody

Nucleic acid sequence (underlined sequence encodes end of leader peptide):

```
1  GGCCCAGCCG GCCATGGCCC AGGTGCAGCT GAAGCAGTCT GGGGCTGAGC TGGTGAGGCC
61 TGGGGCTTCA GTGAAGCTGT CCTGCAAGGC TTCTGGCTAC ACTTTCACTG GCTACTATAT
121 AAACCTGGGTG AAGCAGAGGC CTGGACAGGG ACTTGAGTGG ATTGCAAGGA TTTATCCTGG
181 AAGTGGTTAT ACTTACTACA ATGAGAAGTT CAAGGGCAAG GCCACACTGA CTGCAGAAGA
241 ATCCTCCAGC ACTGCCTACA TGCACCTCAG CAGCCTGACA TCTGAGGACT CTGCTGTCTA
301 TTTCTGTGCA AGACCCCACT ATGGTTACGA CGACTGGTAC TTCGGTGTCT GGGGCACAGG
361 CACCACGGTC ACCGTCTCCA GT
```

Amino acid sequence:

QVQLKQSGAELVRPGASVKLSCKASGYTFTGYYINWVKQRPGQGLEWIARIYPGSGY
TYYNEKFKGKATLTAEESSSTAYMHLSSLTSEDSAVYFCARPHYGYDDWYFGVWGT
GTTVTVSS

CDR1: GYYINWVKQRPGQGLE

CDR2: NEKFKG

CDR3: PHYGYDDWYFGV

32/100

Fig. 16A, Cont'd

MF2971: heavy chain variable region sequence of an erbB-2 binding antibody

Nucleic acid sequence (underlined sequence encodes end of leader peptide):

```
1  GGCCCAGCCG GCCATGGCCC AGGTGCAGCT GAAGCAGTCT GGGGCTGAGC TGGTGAGGCC
61 TGGGGCTTCA GTGAAACTGT CCTGCAAGGC TTCTGGCTAC ACTTTCACTG CCTACTATAT
121 AAACCTGGGTG AAGCAGAGGC CTGGACAGGG ACTTGAGTGG ATTGCAAGGA TTTATCCTGG
181 AAGTGGCTAT ACTTACTACA ATGAGATTTT CAAGGGCAGG GCCACACTGA CTGCAGACGA
241 ATCCTCCAGC ACTGCCTACA TGCAACTCAG CAGCCTGACA TCTGAGGACT CTGCTGTCTA
301 TTTCTGTGCA AGACCTCCGG TCTACTATGA CTCGSCCTGG TTTGCTTACT GGGGCCAAGG
361 GACTCTGGTC ACCGTCTCCA GT
```

Amino acid sequence:

QVQLKQSGAELVRPGASVKLSCKASGYTFTAYYINWVKQRPGQGLEWIARIYPGSGY
TYYNEIFKGRATLTAEDESSSTAYMQLSSLTSEDSAVYFCARPPVYYDSAWFAYWGQG
TLVTVSS

CDR1: AYYINWVKQRPGQGLE

CDR2: NEIFKG

CDR3: PPVYYDSAWFAY

33/100

Fig. 16A, Cont'd

MF3025: heavy chain variable region sequence of an erbB-2 binding antibody

Nucleic acid sequence (underlined sequence encodes end of leader peptide):

```
1  GGCCCAGCCG GCCATGGCCC AGGTGCAGCT GAAGCAGTCT GGGGCTGAGC TGGTGAGGCC
61 TGGGACTTCA GTGAAGCTGT CCTGCAAGGC TTCTGGCTAC ACTTTCACTG GCTACTATAT
121 AAACCTGGGTG AAGCAGAGGC CTGGACAGGG ACTTGAGTGG ATTGCAAGGA TTTATCCTGG
181 AAGTGGTTAT ACTTACTACA ATGAGAAGTT CAAGGGCAAG GCCACACTGA CTGCAGAAGA
241 ATCCTCCAAC ACTGCCTATA TGCACCTCAG CAGCCTGACA TCTGAGGACT CTGCTGTCTA
301 TTTCTGTGCA AGGCCCCACT ATGGTTACGA CGACTGGTAC TTCGCTGTCT GGGGCACAGG
361 GACCACGGTC ACCGTCTCCA GT
```

Amino acid sequence:

QVQLKQSGAELVRPGTSVKLSCKASGYTFTGYYINWVKQRPGQGLEWIARIYPGSGY
TYYNEKFKGKATLTAEESSNTAYMHLSSLTSEDSAVYFCARPHYGYDDWYFAVWGT
GTTVTVSS

CDR1: GYYINWVKQRPGQGLE

CDR2: NEKFKG

CDR3: PHYGYDDWYFAV

34/100

Fig. 16A, Cont'd

MF2916: heavy chain variable region sequence of an erbB-2 binding antibody

Nucleic acid sequence (underlined sequence encodes end of leader peptide):

```
1  GGCCCAGCCG GCCATGGCCC AGGTCCAGCT GCAGCAGTCT GGGGCTGAGC TGGTGAGGCC
61 TGGGGCTTCA GTGAAGCTGT CCTGCAAGGC TTCTGGCTAC ACTTTCACTG GCTACTATAT
121 AAACCTGGGTG AAGCAGAGGC CTGGACAGGG ACTTGAGTGG ATTGCAAGGA TTTATCCTGG
181 CAGTGGTCAT ACTTCCTACA ATGAGAAGTT CAAGGGCAAG GCCACACTGA CTACAGAAAA
241 ATCCTCCAGC ACTGCCTACA TGCAGCTCAG CAGCCTGACA TCTGAGGACT CTGCTGTCTA
301 TTTCTGTGCA AGACCTATCT ACTTTGATTA CGCAGGGGGG TACTTCGATG TCTGGGGCAC
361 AAGAACCTCG GTCACCGTCT CCAGT
```

Amino acid sequence:

QVQLQQSGAELVRPGASVKLSCKASGYTFTGYYINWVKQRPGQGLEWIARIYPGSGH
TSYNEKFKGKATLTTEKSSSTAYMQLSSLTSEDSAVYFCARPIYFDYAGGYFDVWGTR
TSVTVSS

CDR1: GYYINWVKQRPGQGLE

CDR2: NEKFKG

CDR3: PIYFDYAGGYFDV

35/100

Fig. 16A, Cont'd

MF3958: heavy chain variable region sequence of an erbB-2 binding antibody

Nucleic acid sequence (underlined sequence encodes end of leader peptide):

```
1  GGCCCAGCCG GCCATGGCCC AGGTGCAGCT GGTGCAGTCT GSCGCCGAAG TGAAGAAACC
61 TGGCGCCAGC GTGAAGCTGA CCTGCAAGGC CAGCGGCTAC ACCTTCACCG CCTACTACAT
121 CAACTGGGTC CGACAGGCCC CAGGCCAGGG CCTGGAATGG ATCGGCAGAA TCTACCCCGG
181 CTCCGGCTAC ACCAGCTACG CCCAGAAGTT CCAGGGCAGA GCCACCCTGA CCGCCGACGA
241 GAGCACCAGC ACCGCCTACA TGGAAGTGAG CAGCCTGCGG AGCGAGGATA CCGCCGTGTA
301 CTTCTGCGCC AGACCCCCCG TGTACTACGA CAGCGCTTGG TTTGCCTACT GGGGCCAGGG
361 CACCCTGGTC ACCGTCTCCA GT
```

Amino acid sequence:

QVQLVQSGAEVKKPGASVKLSCKASGYTFTAYYINWVRQAPGQGLEWIGRIYPGSGY
TSYAQKFQGRATLTADESTSTAYMELSSLRSEDTAVYFCARPPVYYDSAWFAYWGQG
TLVTVSS

CDR1: AYYIN

CDR2: RIYPGSGYTSYAQKFQG

CDR3: PPVYYDSAWFAY

36/100

Fig. 16A, Cont'd

MF3031: heavy chain variable region sequence of an erbB-2 binding antibody

Nucleic acid sequence (underlined sequence encodes end of leader peptide):

```
1  GGCCCAGCCG GCCATGGCCC AGGTCCAGCT GCAGCAGTCT GGGGCTGAGC TGGTGAGGCC
61 TGGGGCTTCA GTGAAGCTGT CCTGCAAGGC TTCTGGCTAC ACTTTCACTG CCTACTATAT
121 AAACCTGGGTG AAGCAGAGGC CTGGACAGGG ACTTGAGTGG ATTGCAAAGA TTTATCCTGG
181 AAGTGGTTAT ACTTACTACA ATGAGAATTT CAGGGGCAAG GCCACACTGA CTGCAGAAGA
241 ATCCTCCAGT ACTGCCTACA TACAACTCAG CAGCCTGACA TCTGAGGACT CTGCTGTCTA
301 TTTCTGTGCA AGAGGCGTCT ATGATTACGA CGGGGCCTGG TTTGCTTACT GGGGCCAAGG
361 GACTCTGGTC ACCGTCTCCA GT
```

Amino acid sequence:

QVQLQQSGAELVRPGASVKLSCKASGYTFTAYYINWVKQRPGQGLEWIAKIYPGSGY
TYYNENFRGKATLTAEESSTAYIQLSSLTSEDSAVYFCARGVYDYDGAWFAYWGQG
TLVTVSS

CDR1: AYYINWVKQRPGQGLE

CDR2: NENFRG

CDR3: GVDYDGAWFAY

37/100

Fig. 16A, Cont'd

MF3991: heavy chain variable region sequence of an erbB-2 binding antibody

Nucleic acid sequence (underlined sequence encodes end of leader peptide):

```
1  GGCCCAGCCG  GCCATGGCCC  AGGTGCAGCT  GGTGCAGTCT  GGCGCCGAAG  TGAAGAAACC
61  TGGCGCCAGC  GTGAAGCTGA  CCTGCAAGGC  CAGCGGCTAC  ACCTTCACCG  CCTACTACAT
121 CAACTGGGTC  CGACAGGCCC  CAGGCCAGGG  CCTGGAATGG  ATCGGCAGAA  TCTACCCCGG
181 CTCCGGCTAC  ACCAGCTACG  CCCAGAAGTT  CCAGGGCAGA  GCCACCTGA  CCGCCGACGA
241 GAGCACCAGC  ACCGCCTACA  TGGAACTGAG  CAGCCTGCGG  AGCGAGGATA  CCGCCGTGTA
301 CTTCTGCGCC  AGACCCCACT  ACGGCTACGA  CGACTGGTAC  TTCGGCGTGT  GGGGCCAGGG
361 CACCCTGGTC  ACCGTCTCCA  GT
```

Amino acid sequence:

QVQLVQSGAEVKKPGASVKLSCKASGYTFTAYYINWVRQAPGQGLEWIGRIYPGSGY
TSYAQKFQGRATLTADESTSTAYMELSSLRSEDVAVYFCARPHYGYDDWYFGVWGQ
GTLVTVSS

CDR1: AYYIN

CDR2: RIYPGSGYTSYAQKFQG

CDR3: PIHYGYDDWYFGV

38/100

Fig. 16B

MF3178: heavy chain variable region sequence of an erbB-3 binding antibody

Nucleic acid sequence (underlined sequence encodes end of leader peptide):

```
1  GGCCCAGCCG GCCATGGCCC AGGTGCAGCT GGTGCAGTCT GGGGCTGAGG TGAAGAAGCC
61 TGGGGCCTCA GTGAAGGTCT CCTGCAAGGC TTCTGGATAC ACCTTCACCG GCTACTATAT
121 GCACTGGGTG CGACAGGCCC CTGGACAAGG GCTTGAGTGG ATGGGATGGA TCAACCCTAA
181 CAGTGGTGGC ACAAACATG CACAGAAGTT TCAGGGCAGG GTCACGATGA CCAGGGACAC
241 GTCCATCAGC ACAGCCTACA TGGAGCTGAG CAGGCTGAGA TCTGACGACA CGGCTGTGTA
301 TTACTGTGCA AGAGATCATG CTTCTCGTCA TTTCTGGTCT TACTGGGGCT TTGATTATTG
361 GGGCCAAGGT ACCCTGGTCA CCGTCTCCAG T
```

Amino acid sequence:

QVQLVQSGAEVKKPGASVKVSCKASGYTFTGYMHWVRQAPGQGLEWMGWINPNS
GGTNYAQKFQGRVTMTRDTSISTAYMELSRLLRSDDTAVYYCARDHGSRHFWSYWGFDY
WGQGTLVTVSS

CDR1: GYYMH

CDR2: WINPNSGGTNYAQKFQG

CDR3: DHGSRHFWSYWGFDY

39/100

Fig. 16B, Cont'd

MF3176: heavy chain variable region sequence of an erbB-3 binding antibody

Nucleic acid sequence (underlined sequence encodes end of leader peptide):

```
1  GGCCCAGCCG GCCATGGCCG AGGTGCAGCT GTTGGAGTCT GGGGGAGGCT TGGTACAGCC
61 TGGGGGGTCC CTGAGACTCT CCTGTGCAGC CTCTGGATTG ACCTTTAGCA GCTATGCCAT
121 GAGCTGGGTC CGCCAGGCTC CAGGGAAGGG GCTGGAGTGG GTCTCAGCTA TTAGTGGTAG
181 TGGTGGTAGC ACATACTACG CAGACTCCGT GAAGGGCCGG TTCACCACTT CCAGAGACAA
241 TTCCAAGAAC ACGCTGTATC TGCAAATGAA CAGCCTGAGA GCCGAGGACA CGGCTGTGTA
301 TTACTGTGCA AGAGATTGGT CGTACCCGCC GTACTACTGG GGCTTTGATT ATTGGGGCCA
361 AGGTACCCCTG GTCACCGTCT CCACT
```

Amino acid sequence:

EVQLLESGLVQPGGSLRLSCAASGFTFSSYAMSWVRQAPGKGLEWVSAISGSGGS
TYYADSVKGRFTISRDN SKNTLYLQMNSLRAEDTAVYYCARDWWYPPYYWGFDYWG
QGTLVTVSS

CDR1: SYAMS

CDR2: AISGSGGSTYYADSVKG

CDR3: DWWYPPYYWGFDY

40/100

Fig. 16B, Cont'd

MF3163: heavy chain variable region sequence of an erbB-3 binding antibody

Nucleic acid sequence (underlined sequence encodes end of leader peptide):

```
1  GGCCCAGCCG GCCATGGCCC AGGTGCAGCT GGTGCAGTCT GGGGCTGAGG TGAAGAAGCC
61 TGGGGCCTCA GTGAAGGTCT CCTGCAAGGC TTCTGGATAC ACCTTCACCG GCTACTATAT
121 GCACTGGGTG CGACAGGCCC CTGGACAAGG GCTTGAGTGG ATGGGATGGA TCAACCCTAA
181 CAGTGGTGGC ACAAACATATG CACAGAAGTT TCAGGGCAGG GTCACGATGA CCAGGGACAC
241 GTCCATCAGC ACAGCCTACA TGGAGCTGAG CAGGCTGAGA TCTGACGACA CGGCCGTGTA
301 TTACTGTGCA AAAGATTCTT ACTCTCGTCA TTTCTACTCT TGGTGGGCCT TTGATTATTG
361 GGGCCAAGGT ACCCTGGTCA CCGTCTCCAG T
```

Amino acid sequence:

QVQLVQSGAEVKKPGASVKVSCKASGYTFTGYYMHWVRQAPGQGLEWMGWINPNS
GGTNYAQKFQGRVTMTRDTSISTAYMELSRLLRSDDTAVYYCAKDSYSRHFYSWWAF
DYWGQGTLVTVSS

CDR1: GYYMH

CDR2: WINPNSGGTNYAQKFQG

CDR3: DYSRHFYSWWAFDY

41/100

Fig. 16B, Cont'd

MF3099: heavy chain variable region sequence of an erbB-3 binding antibody

Nucleic acid sequence (underlined sequence encodes end of leader peptide):

```
1  GGCCCAGCCG GCCATGGCCG AGGTCCAGCT GCAGCAGCCT GGGGCTGAGC TGGTGAGGCC
61  TGGGACTTCA GTGAAGTTGT CCTGCAAGGC TTCTGGCTAC ACCTTCACCA GCTACTGGAT
121 GCACTGGGTA AAGCAGAGGC CTGGACAAGG CCTTGAGTGG ATCGGAATTC TTGATCCTTC
181 TGATAGTTAT ACTACCTACA ATCAAAAGTT CAAGGGCAAG GCCACATTAA CAGTAGACAC
241 ATCCTCCAGC ATAGCCTACA TGCAGCTCAG CAGCCTGACA TCTGAGGACT CTGCGCTCTA
301 TTACTGTGCA AGAGGGGGAG ATTACGACGA GGAAGTGCT ATGGACTACT GGGGTCAAGG
361 AACCTCGGTC ACCGTCTCCA CT
```

Amino acid sequence:

EVQLQQPGAELVRPGTSVKLSCKASGYTFTSYWMHWVKQRPGQGLEWIGILDPSDSY
TTYNQKFKGKATLTVDTSSTSIAYMQLSSLTSEDSALYYCARGGDYDEGGAMDYWGQ
GTSVTVSS

CDR1: SYWMH

CDR2: ILDPDSYTTYNQKFKG

CDR3: GGDYDEGGAMDY

42/100

Fig. 16B, Cont'd

MF3307: heavy chain variable region sequence of an erbB-3 binding antibody

Nucleic acid sequence (underlined sequence encodes end of leader peptide):

```
1  GGCCCAGCCG GCCATGGCCC AGGTGCAGCT GGTGCAGTCT GGGGCTGAGG TGAAGAAGCC
61 TGGGGCCTCA GTGAAGGTCT CCTGCAAGGC TTCTGGATAC ACCTTCACCG GCTACTATAT
121 GCACTGGGTG CGACAGGCCC CTGGACAAGG GCTTGAGTGG ATGGGATGGA TCAACCCTAA
181 CAGTGGTGGC ACAAACATATG CACAGAAGTT TCAGGGCAGG GTCACGATGA CCAGGGACAC
241 GTCCATCAGC ACAGCCTACA TGGAGCTGAG CAGGCTGAGA TCTGACGACA CGGCCGTGTA
301 TTACTGTGCA AGAGGTTCTC CTAAACGTCT GTCTAACTAC TTCAACGCCT TTGATTATTG
361 GGGCCAAGGT ACCCTGGTCA CCGTCTCCAG T
```

Amino acid sequence:

QVQLVQSGAEVKKPGASVKVSCKASGYTFTGYYMHWVRQAPGQGLEWMGWINPNS
GGTNYAQKFQGRVTMTRDTSISTAYMELSRLLRSDDTAVYYCARGSRKRLSNYFNAFD
YWGQGTLVTVSS

CDR1: GYYMH

CDR2: WINPNSGGTNYAQKFQG

CDR3: GSRKRLSNYFNAFDY

43/100

Fig. 16C

a) Common Light Chain

DIQMTQSPSSLSASVGDRVITITCRASQSISSYLNWYQQKPGKAPKLLIYAASSLQSGVP
SRFSGSGSGTDFTLTISLQPEDFATYYCQQSYSTPPTFGQGTKVEIKRTVAAPSVFIFP
PSDEQLKSGTASVVCLLNNFYPREAKVQWKVDNALQSGNSQESVTEQDSKDSTYSLS
STLTLSKADYEKHKVYACEVTHQGISSPVTKSFNRGEC

Fig. 16D

heavy chain for erbB-2 binding

QVQLVQSGAEVKKPGASVKLSCKASGYTFTAYYINWVRQAPGQGLEWIGRIYPGSGY
TSYAQKFQGRATLTADESTSTAYMELSSLRSEDTAVYFCARPPVYYDSAWFAYWGQG
TLVTVSSASTKGPSVFPLAPSSKSTSGGTAALGCLVKDYFPEPVTVSWNSGALTSGVH
TFPAVLQSSGLYSLSSVVTVPSSSLGTQTYICNVNHKPSNTKVDKRVEPKSCDKTHTC
PPCPAPELLGGPSVFLFPPKPKDTLMISRTPEVTCVVVDVSHEDPEVKFNWYVDGVE
VIINAKTKPREEQYNSTYRVVSVLTVLHQDWLNGKEYKCKVSNKALPAPIEKTISKAK
GQPREPQVYTDPPSREEMTKNQVSLTCEVKGFYPSDIAVEWESNGQPENNYKTTPPV
LDSGGSFFLYSKLTVDKSRWQQGNVFSQVMHEALHNHYTQKSLSLSPG

heavy chain for erbB-3 binding

QVQLVQSGAEVKKPGASVKVSCASGYTFTGYMHVVRQAPGQGLEWMGWINPNS
GGTNYAQKFQGRVTMTRDTSISSTAYMELSRIRSDDTAVYYCARDHGSRHFWSYWGF
DYWGQGTTLVTVSSASTKGPSVFPLAPSSKSTSGGTAALGCLVKDYFPEPVTVSWNSG
ALTSGVHTFPAVLQSSGLYSLSSVVTVPSSSLGTQTYICNVNHKPSNTKVDKRVEPKS
CDKTHTCPPCPAPELLGGPSVFLFPPKPKDTLMISRTPEVTCVVVDVSHEDPEVKFN
WYVDGVEVHNAKTKPREEQYNSTYRVVSVLTVLHQDWLNGKEYKCKVSNKALPAPI
EKTISKAKGQPREPQVYTKPPSREEMTKNQVSLKCLVKGFYPSDIAVEWESNGQPEN
NYKTTPPVLDSDGGSFFLYSKLTVDKSRWQQGNVFSQVMHEALHNHYTQKSLSLSPG

44/100

Fig. 16E

HER2-specific Ab sequences**MF2889:** heavy chain variable region sequence of an erbB-2 binding antibody

Nucleic acid sequence (underlined sequence encodes end of leader peptide):

```
1   GGCCCAGCCG GCCATGGCCG AGGTCCAGCT GCAGCAGTCT GGAGCTGAGC TGGTAAGGCC
61  TGGGACTTCA GTGAAGGTGT CCTGCAAGGC TTCTGGATAC GCCTTCACTA ATTATTGAT
121 AGAGTGGGTA AAGCAGAGGC CTGGCCAGGG CCTTGAGTGG ATTGGAGTGA TTATCCTGA
181 AGGTGGTGGT ACTATCTACA ATGAGAAATT CAAGGGCAAG GCAACACTGA CTGCAGACAA
241 ATCCTCCAGC ACTGCCTACA TGCAGCTCAG CGGCCTGACA TCTGAGGACT CTGCGGTCTA
301 TTTCTGTGCA AGAGGAGACT ATGATTACAA ATATGCTATG GACTACTGGG GTCAAGGAAC
361 CTCGCTCACC CTCTCCACT
```

Amino acid sequence:

EVQLQQSGAELVRPGTSVKVSCKASGYAFTNYLIEWVKQRPQGQLEWIGVIYPEGGG
TIYNEKFKGKATLTADKSSSTAYMQLSGLTSEDSAVYFCARGDYDYKYAMDYWGQG
TSVTVSS

CDR1: NYLIE

CDR2: VIYPEGGGTIYNEKFKG

CDR3: GDYDYKYAMDY

45/100

Fig. 16E, Cont'd

MF2913: heavy chain variable region sequence of an erbB-2 binding antibody

Nucleic acid sequence (underlined sequence encodes end of leader peptide):

```
1  GGCCCAGCCG GCCATGGCCG AGGTCAAGCT GCAGCAGTCT GGACCTGAGC TGGTGAAGCC
61  TGGCGCTTCA GTGAAGATAT CCTGCAAGGC TTCTGGTTAC TCATTCACTG ACTACAAAAT
121  GGACTGGGTG AAGCAGAGCC ATGGAAGAG CCTCGAATGG ATTGGAAATA TTAATCCTAA
181  CAGTGGTGGT GTTATCTACA ACCAGAAGTT CAGGGGCAAG GTCACATTGA CTGTTGACAG
241  GTCCTCCAGC GCAGCCTACA TGGAGCTCCG CAGCCTGACA TCTGAGGACA CTGCAGTCTA
301  TTATTGTTCA AGAGGACTGT GGGATGCTAT GGA CTCTGG GGTCAAGGAA CCTCGGTCAC
361  CGTCTCCAGT
```

Amino acid sequence:

EVKLQQSGPELVKPGASVKISCKASGYSFTDYKMDWVKQSHGKSLEWIGNINPNSSG
VIYNQKFRGKVTTLTVDRSSSAAYMELRSLTSEDVAVYYCSRGLWDAMDSWGQGTSVT
VSS

CDR1: DYKMDWVKQSHGKSLE

CDR2: NQKFRG

CDR3: GLWDAMDS

46/100

Fig. 16E, Cont'd

MF1847: heavy chain variable region sequence of an erbB-2 binding antibody

Nucleic acid sequence (underlined sequence encodes end of leader peptide):

```
1   GGCCCAGCCG GCCATGGCCC AGGTGCAGCT GGTGGAGTCT GGGGGAGSCG TGGTCCAGCC
61  TGGGAGGTCC CTGAGACTCT CCTGTGCAGC CTCTGGATTC ACCTTCAGTA GCTATGGCAT
121 GCACTGGGTC CGCCAGGCTC CAGGCAAGGG GCTGGAGTGG GTGGCAGTTA TATCATATGA
181 TGGAAGTAAT AAATACTATG CAGACTCCGT GAAGGGCCGA TTCACCATCT CCAGAGACAA
241 TTCCAAGAAC ACGCTGTATC TGCAAATGAA CAGCCTGAGA GCTGAGGACA CGGCCGTGTA
301 TTACTGTGCA AAAGGTTGGT GGCATCCGCT GCTGTCTGGC TTTGATTATT GGGGCCAAGG
361 TACCCTGGTC ACCGTCTCCA GT
```

Amino acid sequence:

QVQLVESGGGVVQPGRSLRLSCAASGFTFSSYGMHWVRQAPGKGLEWVAVISYDGS
NKYYADSVKGRFTISRDN SKNTLYLQMNSLRAEDTAVYYCAKGWWHPLLSGFDYWG
QGTLVTVSS

CDR1: SYGMH

CDR2: VISYDGSNKYYADSVKG

CDR3: GWWHPLLSGFDY

47/100

Fig. 16E, Cont'd

MF3001: heavy chain variable region sequence of an erbB-2 binding antibody

Nucleic acid sequence (underlined sequence encodes end of leader peptide):

```
1   GGCCCAGCCG GCCATGGCCG AGGTCCAGCT GCAGCAGTCT GGGGCTGAAC TGGCAAAACC
61  TGGGGCCTCA GTGAAGCTGT CCTGCAAGAC TTCTGGCTAC AACTTTCCTA TCTACTGGAT
121 GCACTGGGTA AAACAGAGGC CTGGACCGGG TCTGGAATGG ATTGGATACA TTAATCCTAG
181 TACTGGTTAT ATTAAGAACA ATCAGAAGTT CAAGGACAAG GCCACCTTGA CTGCAGACAA
241 ATCCTCCAAC ACAGCCTACA TGCAGCTGAA CAGCCTGACA TATGAGGACT CTGCAGTCTA
301 TTACTGTACA AGAGAAGGGA TAACTGCGTT TACTTACTGG GGCCAAGGGA CTCTGGTCAC
361 CGTCTCCAGT
```

Amino acid sequence:

EVQLQQSGAELAKPGASVKLSCKTSGYNFPIYWMHWVKQRPGRGLEWIGYINPSTGY
IKNNQKFKDKATLTADKSSNTAYMQLNSLTYESAVYYCTREGITGFTYWGQGTLVTVSS

CDR1: IYWMHWVKQRPGRGLE

CDR2: NQKFKD

CDR3: EGITGFTY

48/100

Fig. 16E, Cont'd

MF1898: heavy chain variable region sequence of an erbB-2 binding antibody

Nucleic acid sequence (underlined sequence encodes end of leader peptide):

```
1   GGCCCAGCCG GCCATGGCCC AGGTGCAGCT GGTGGAGTCT GGGGGAGSCG TGGTCCAGCC
61  TGGGAGGTCC CTGAGACTCT CCTGTGCAGC CTCTGGATTG ACCTTCAGTA GCTATGGCAT
121 GCACTGGGTC CGCCAGGCTC CAGGCAAGGG GCTGGAGTGG GTGGCAGTTA TATCATATGA
181 TGGAAGTAAT AAATACTATG CAGACTCCGT GAAGGGCCGA TTCACCATCT CCAGAGACAA
241 TTCCAAGAAC ACGCTGTATC TGCAAATGAA CAGCCTGAGA GCTGAGGACA CGGCCGTGTA
301 TTACTGTGCA AAAGATGGTT TCCGTGCTAC TACTCTGTCT GGCTTTGATT ATTGGGGCCA
361 AGGTACCCTG GTCACCGTCT CCACT
```

Amino acid sequence:

QVQLVESGGGVVQPGRSLRLSCAASGFTFSSYGMHWVRQAPGKGLEWVAVISYDGS
NKYYADSVKGRFTISRDN SKNTLYLQMNSLRAEDTAVYYCAKDGFRRTTLSGFDYW
GQGT LTVSS

CDR1: SYGMH

CDR2: VISYDGSNKYYADSVKG

CDR3: DGFRRTTLSGFDY

49/100

Fig. 16E, Cont'd

MF3003 heavy chain variable region sequence of an erbB-2 binding antibody

Nucleic acid sequence (underlined sequence encodes end of leader peptide):

```
1   GGCCCAGCCG GCCATGGCCC AGGTGCAGCT GAAGCAGTCT GGACCTGAGC TGGTGAAGCC
61  TGGGGCCTCA GTGAAGATTT CCTGCAAGGC TTCTGGCGAC GCATTCAGTT ACTCCTGGAT
121 GAACTGGGTG AAGCAGAGGC CTGGAAGGG TCTTGAGTGG ATTGGACGGA TTATCCTGG
181 AGATGGAGAT ATTAATAACA ATGGGAAGTT CAAGGGCAAG GCCACACTGA CTGCAGACAA
241 ATCCTCCAGC ACAGCCCACC TGCAACTCAA CAGCCTGACA TCTGAGGACT CTGCGGTCTA
301 CTTCTGTGCA AGAGGACAGC TCGGACTAGA GGCCTGGTTT GCTTATTGGG GCCAGGGGAC
361 TCTGGTCACC GTCTCCAGT
```

Amino acid sequence:

QVQLKQSGPELVKPGASVKISCKASGDAFSYSWMNWVKQRPGKGLEWIGRIYPGDG
DINYNKFKGKATLTADKSSSTAHLQLNSLTSEDSAVYFCARGQLGLEAWFAYWGQ
GTLVTVSS

CDR1: YSWMNWVKQRPGKGLE

CDR2: NGKFKG

CDR3: GQLGLEAWFAY

50/100

Fig. 16E, Cont'd

HER3-specific Ab sequences**MF6058:** heavy chain variable region sequence of an erbB-3 binding antibody

Nucleic acid sequence (underlined sequence encodes end of leader peptide):

```

1  GGCCCAGCCC CCCATGCCCC ACCTCCACCT CCTCCAGTCT GCGGCTCACC TCAACAAGCC
61 TGGGGCCTCA GTGAAGGTCA CGTGCAAGGC TTCTGGATAC ACCTTCACCG GCTACTATAT
121 GCACTGGGTG CGACAGGCCC CTGGACAAGC TCTTGAGTGG ATGGGATGGA TCAACCCTCA
181 AAGTGGTGGC ACAAACATATG CAAAGAAGTT TCAGGSCAGG GTCTCTATGA CCAGGGAGAC
241 GTCCACAAGC ACAGCCTACA TCCAGCTGAG CAGGCTGAGA TCTGACGACA CGGCTACGTA
301 TTA CTGTGCA AGAGATCATG GTTCTCGTCA TTTCTGGTCT TACTGGGGCT TTGATTATTG
361 GGGCCAAGG' ACCCTGGTCA CCGTCTCCAG T

```

Amino acid sequence:

QVQLVQSGADVKKPGASVKVTCKASGYTFTGYMHWVRQAPGQALEWMGWINPQS
GGTNYAKKFQGRVSMRETSTSTAYMQLSRLRSDDTATYYCARDHGSRHFWSYWGFDY
WGQGTLVTVSS

CDR1: GYYMH

CDR2: WINPQSGGTNYAKKFQG

CDR3: DHGSRHFWSYWGFDY

51/100

Fig. 16E, Cont'd

MF6061: heavy chain variable region sequence of an erbB-3 binding antibody

Nucleic acid sequence (underlined sequence encodes end of leader peptide):

```
1  GGCCCAGCCG GCCATGGCCC ACGTGCAGCT GGTGCAGTCT GGGGCTGAGG TGAAGAAGCC
61 TGGGGCCTCA GTGAAGGTCT CCTGCAAGGC TTCTGGATAC ACCTTCACCG GCTACTATAT
121 GCACTGGGTG CGACAGGCCC CTGGACAAGG GCTTGAGTGG ATGGGATGGA TCAACCCTCA
181 GAGTGGTGGC ACAAACATATG CACAGAAGTT TAAGGSCAGG GTCACGATGA CCAGGGACAC
241 GTCACACAGC ACAGCCTACA TCGAGCTGAG CAGGCTGAGA TCTGACGACA CGGCTGTGTA
301 TTA CTGTGCA AGAGATCATG GTTCTCGTCA TTTCTGGTCT TACTGGGGCT TTGATTATTG
361 GGGCCAAGGT ACCCTGGTCA CCGTCTCCAG T
```

Amino acid sequence:

QVQLVQSGAEVKKPGASVKVSCKASGYTFTGYMHWVRQAPGQGLEWMGWINPQS
GGTNYAQKFKGRVTMTRDTSTSTAYMELSRRLSDDTAVYYCARDHGSRHFWSYWGFDY
WGQGTLVTVSS

CDR1: GYYMH

CDR2: WINPQSGGTNYAQKFKG

CDR3: DHGSRHFWSYWGFDY

52/100

Fig. 16E, Cont'd

MF6065: heavy chain variable region sequence of an erbB-3 binding antibody

Nucleic acid sequence (underlined sequence encodes end of leader peptide):

```
1  GGCCCAGCCG GCCATGGCCC ACGTGCAGCT GGTGCAGTCT GGGGCTGAGG TGAAGAAGCC
61 TGGGGCCTCA GTGAAGGTCT CCTGCAAGGC TTCTGGATAC ACCTTCACCT CTTACTATAT
121 GCACTGGGTG CGACAGGCCC CTGGACAAGG GCTTGAGTGG ATGGGATGGA TCAACCCTCA
181 GGGGGGTTCT ACAAATATG CACAGAAGTT TCAGGSCAGG GTCACGATGA CCAGGGACAC
241 GTCCACCAGC ACAGTGTA CAAGCTGAG CAGGCTGAGA TCTGAGGACA CGGCTGTGTA
301 TTAATGTGCA AGAGATCATG GTTCTCGTCA TTTCTGGTCT TACTGGGGCT TTGATTATTG
361 GGGCCAAGGT ACCCTGGTCA CCGTCTCCAG T
```

Amino acid sequence:

QVQLVQSGAEVKKPGASVKVSCKASGYTFTSYMHWRQAPGQGLEWMGWINPQG
GSTNYAQKFQGRVTMTRDTSTSTVYMELSLRSEDYAVYYCARDHGSRHFWSYWGFDY
WGQGTLVTVSS

CDR1: SYMH

CDR2: WINPQGGSTNYAQKFQG

CDR3: DHGSRHFWSYWGFDY

53/100

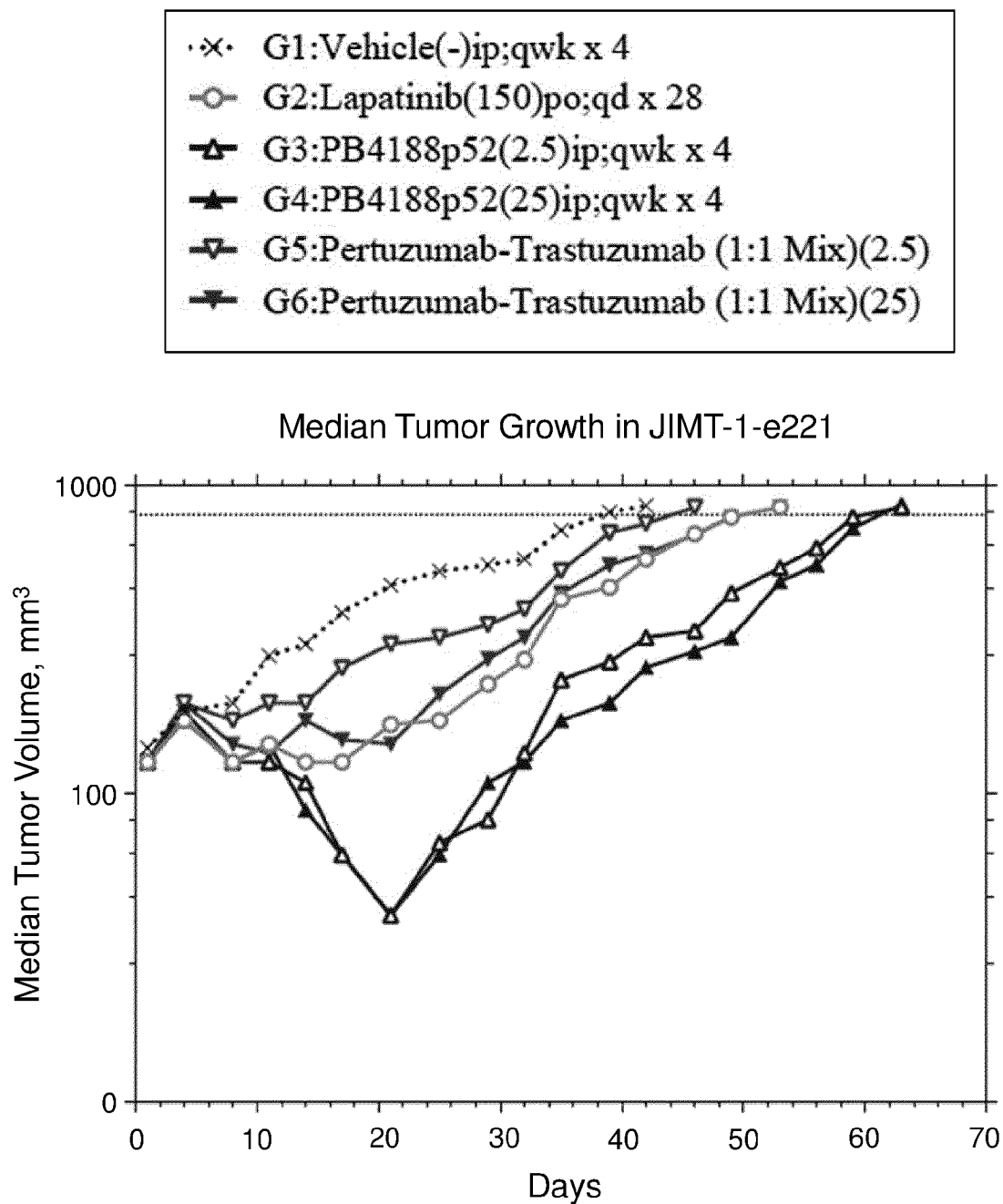


Fig. 17

54/100

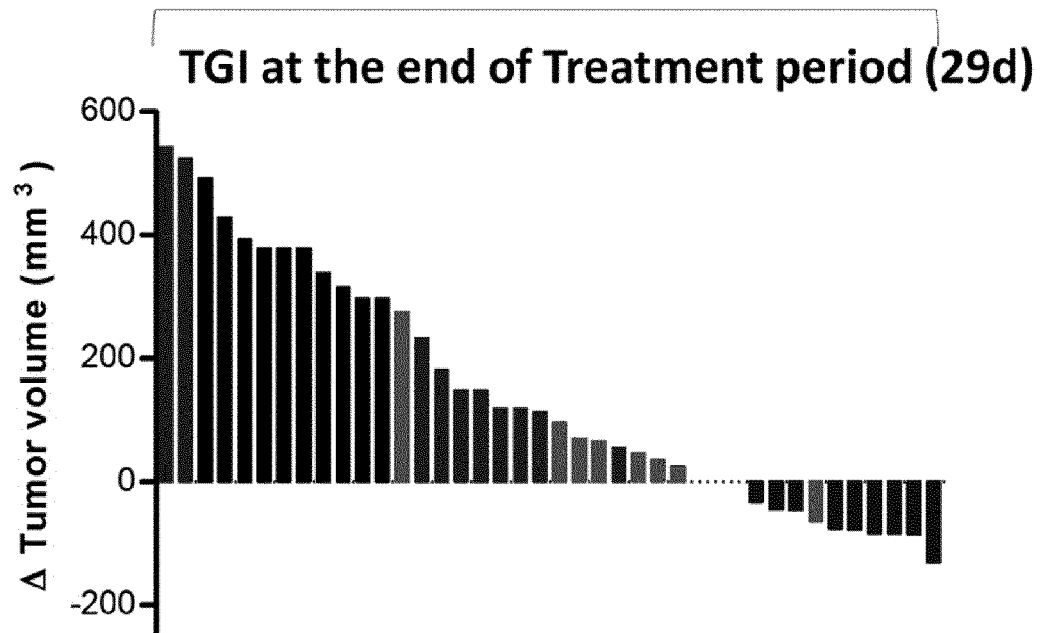


Fig. 17, Cont'd

55/100

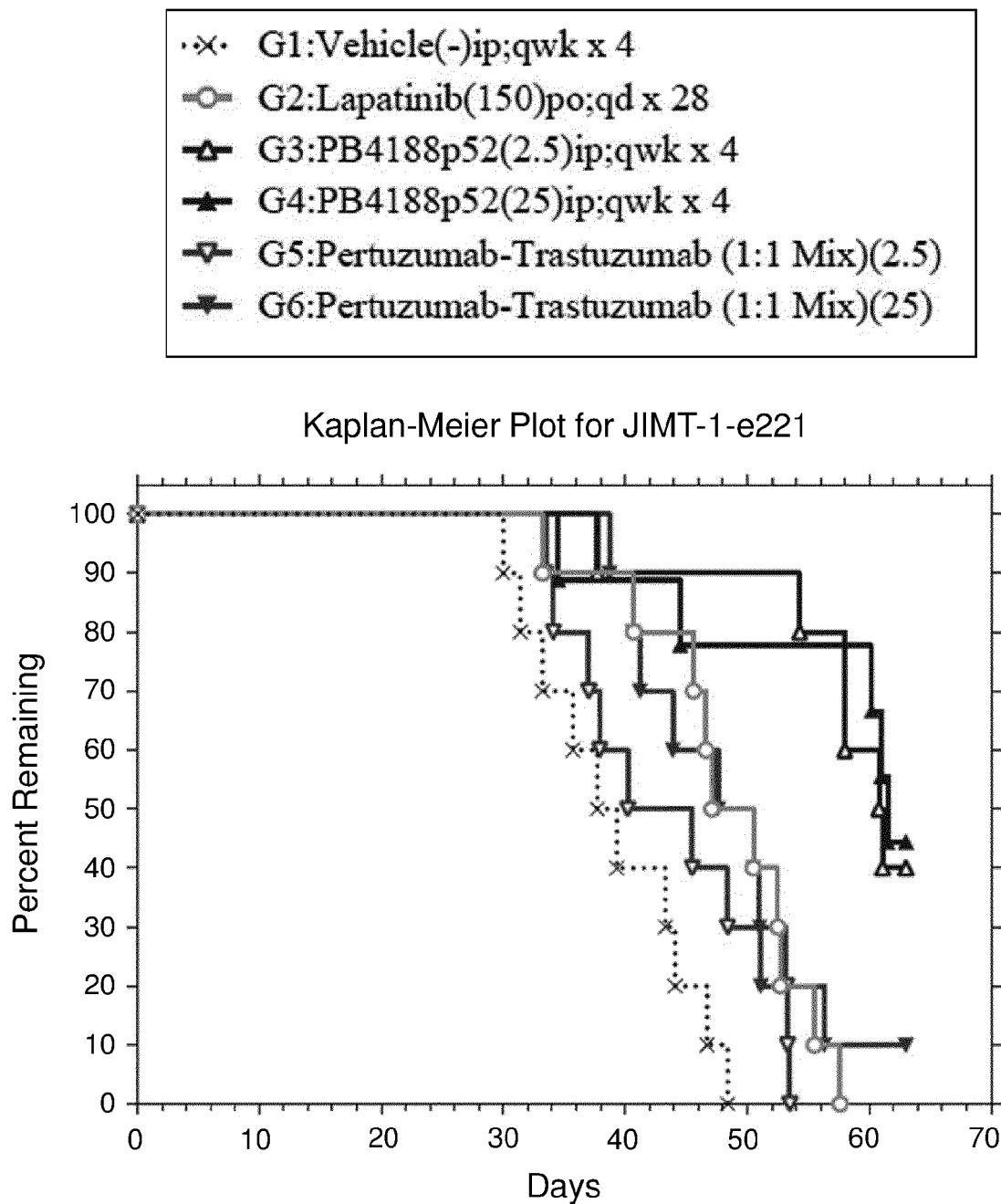


Fig. 18

56/100

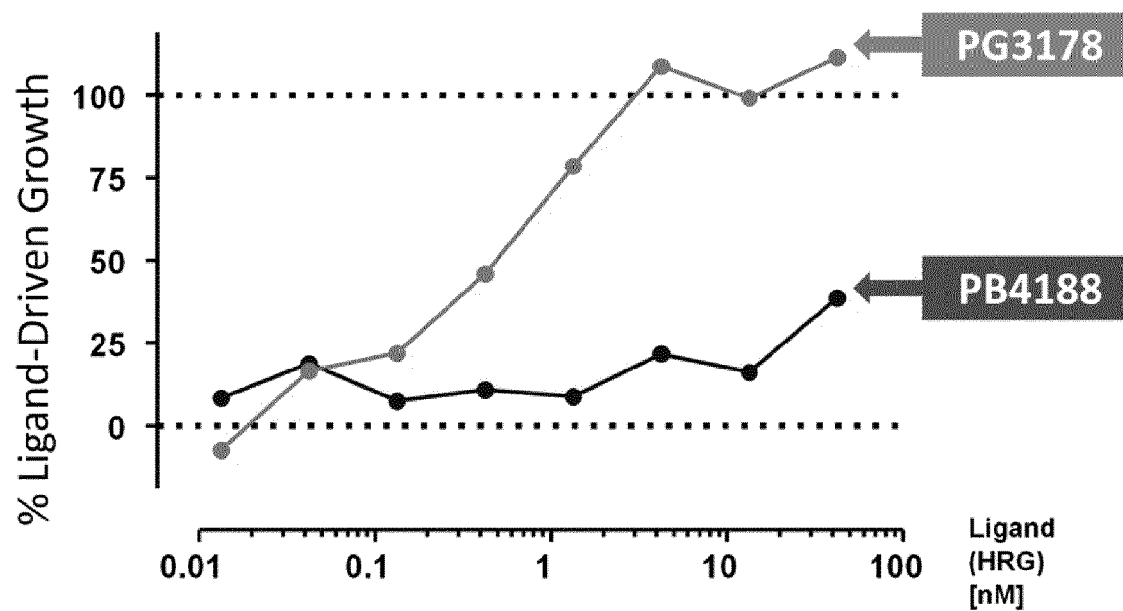


Fig. 19

57/100

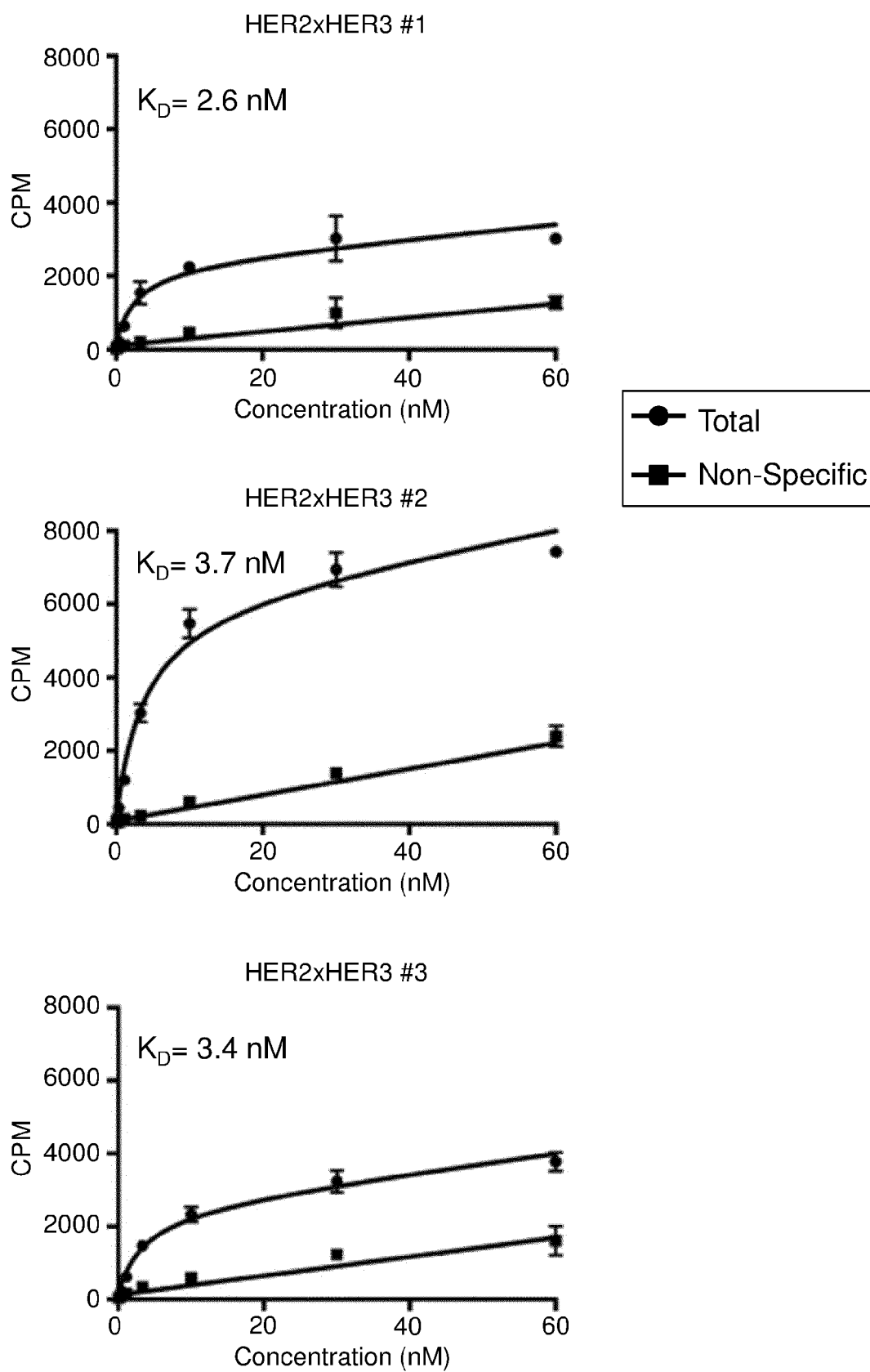


Fig. 20

58/100

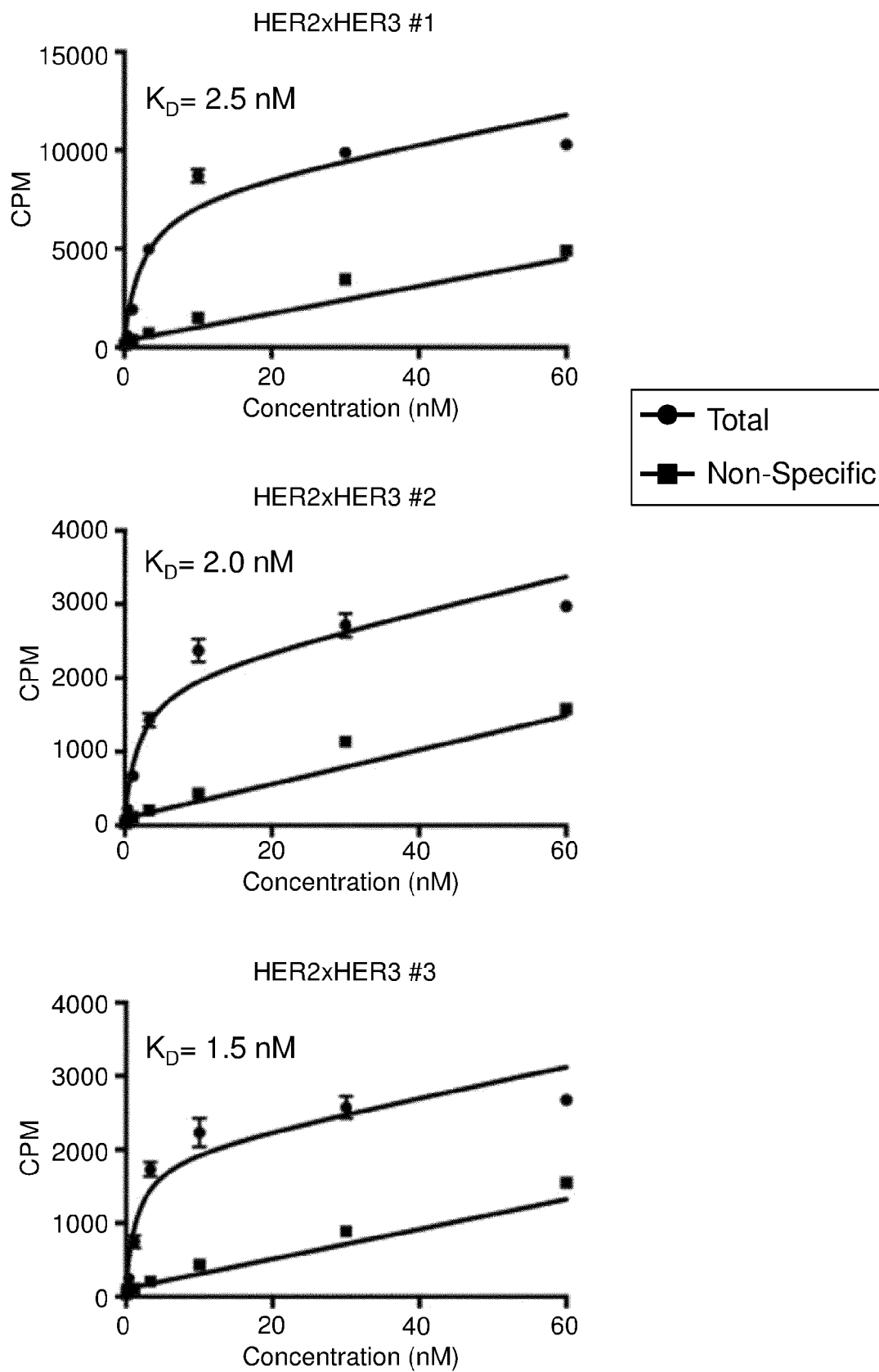


Fig. 20, Cont'd

59/100

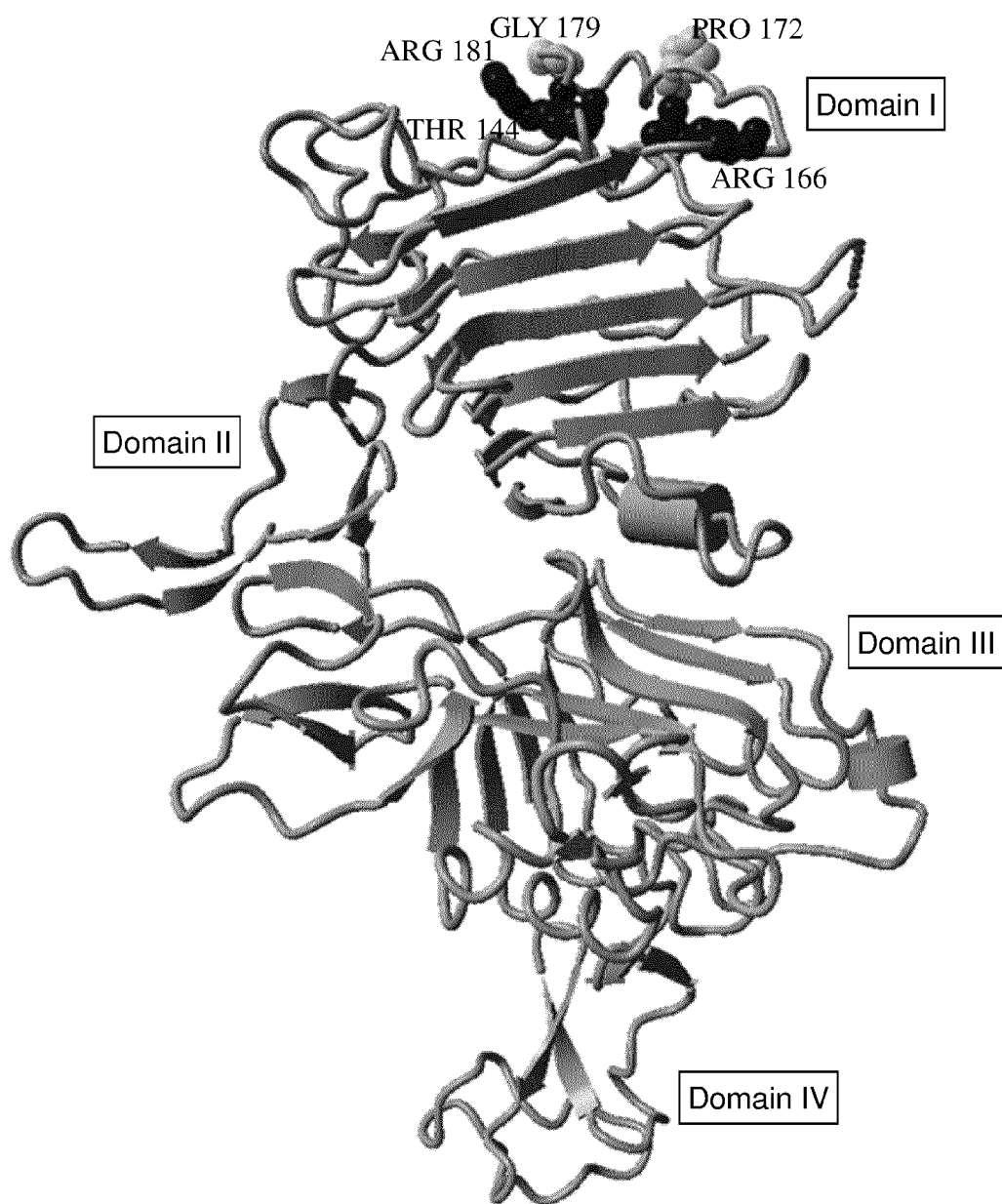


Fig. 21A

60/100

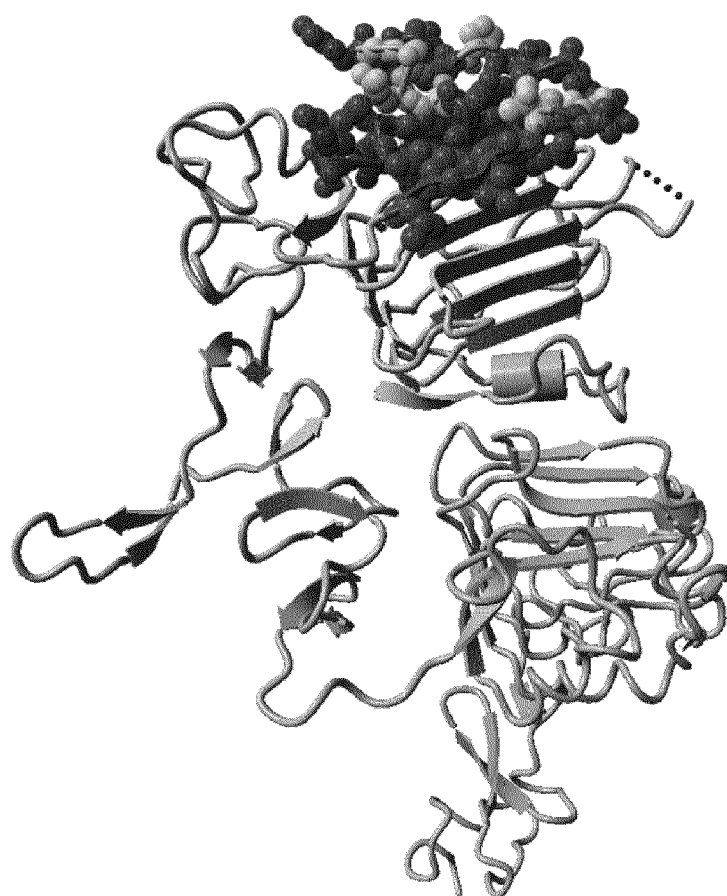


Fig. 21B (a)

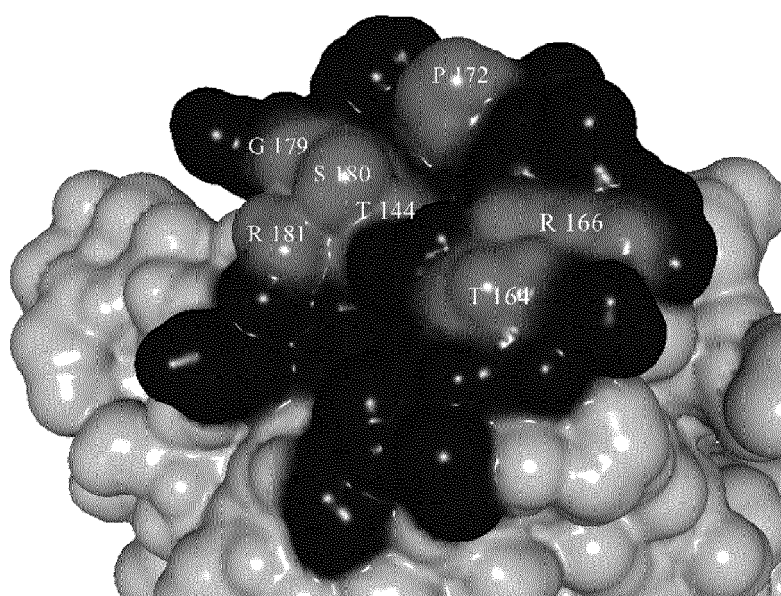


Fig. 21B (b)

62/100



Fig. 21C (a)

63/100

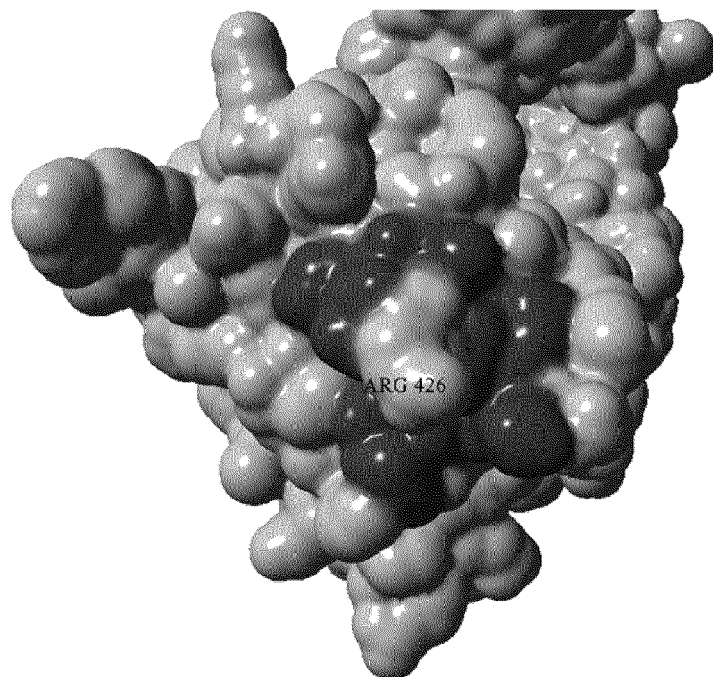


Fig. 21C (b)

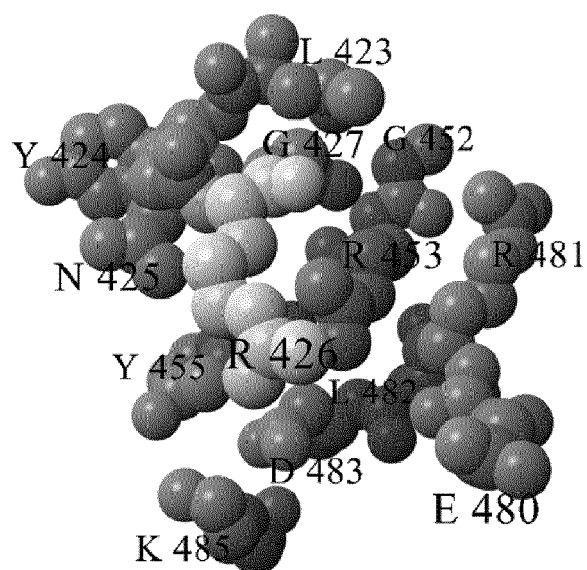


Fig. 21C (c)

64/100

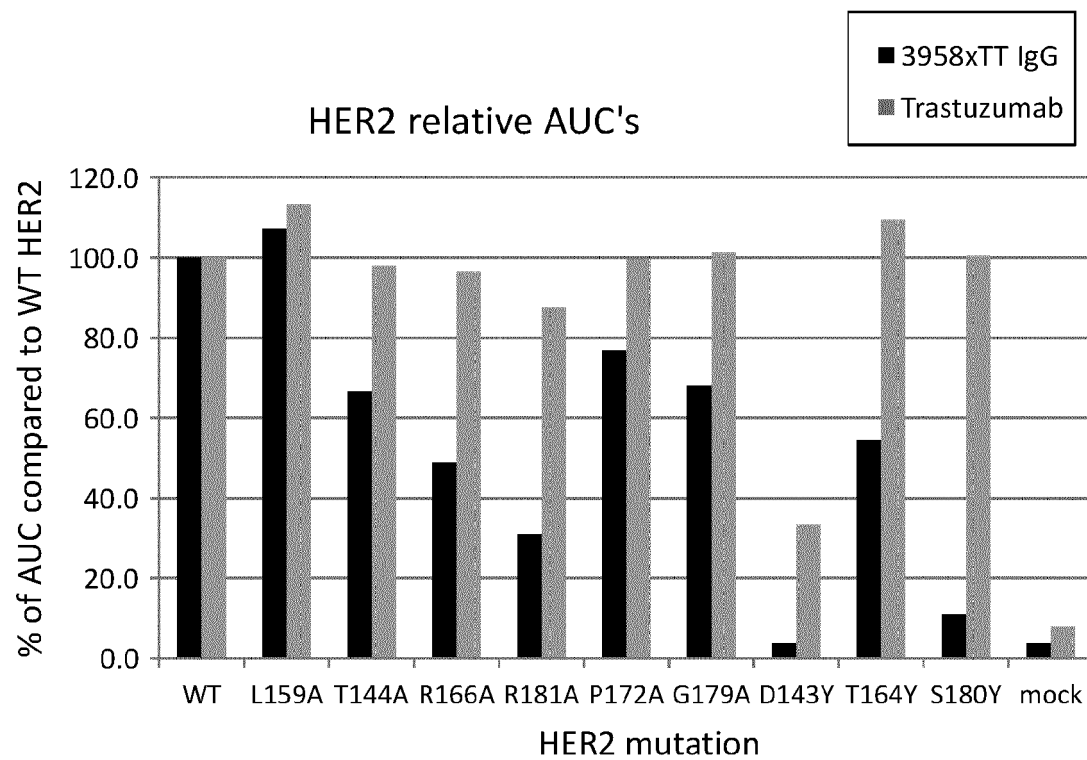


Fig. 22

65/100

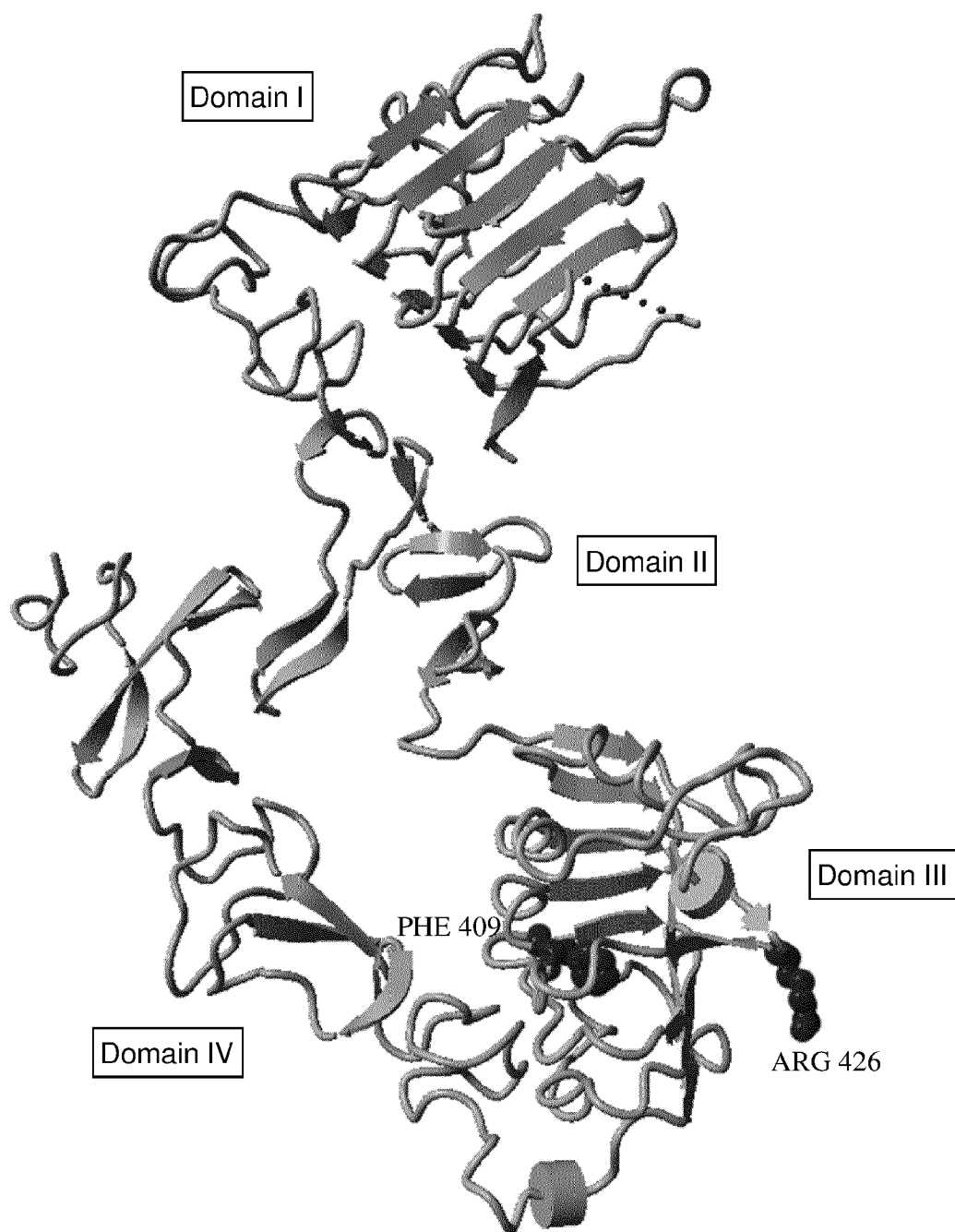


Fig. 23

66/100

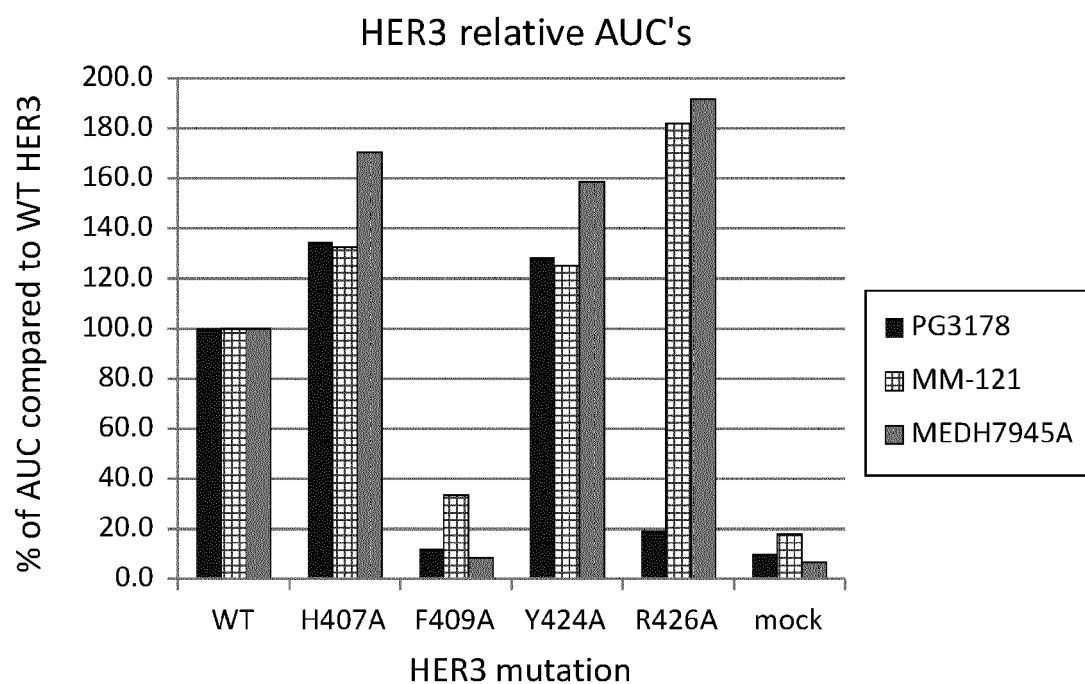


Fig. 24

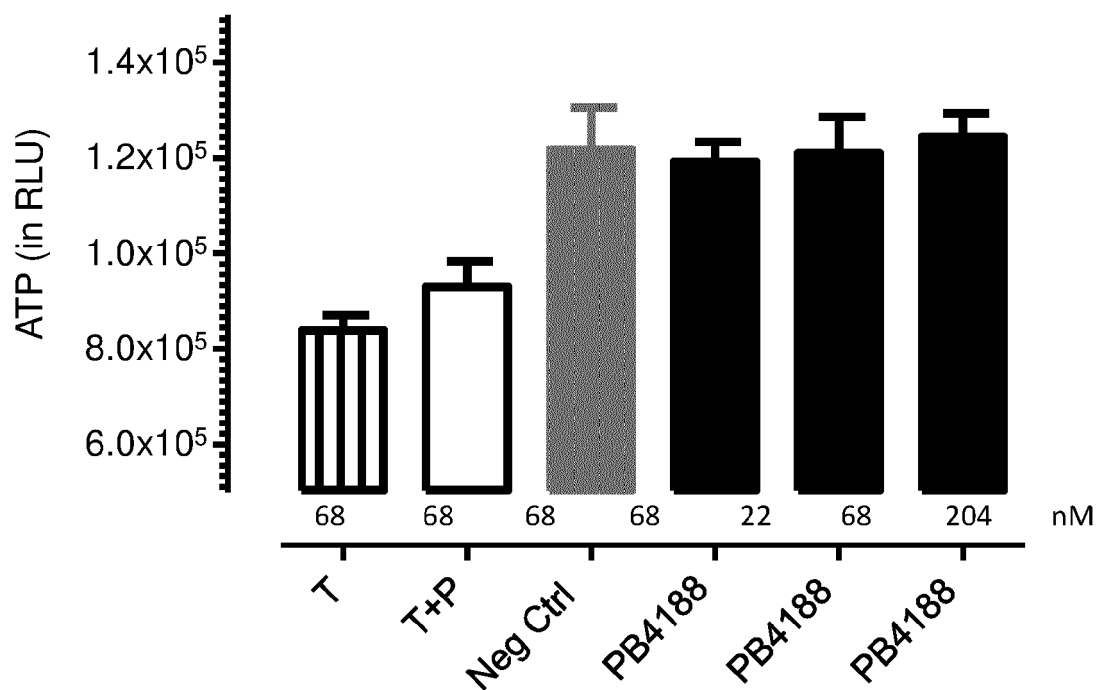


Fig. 25

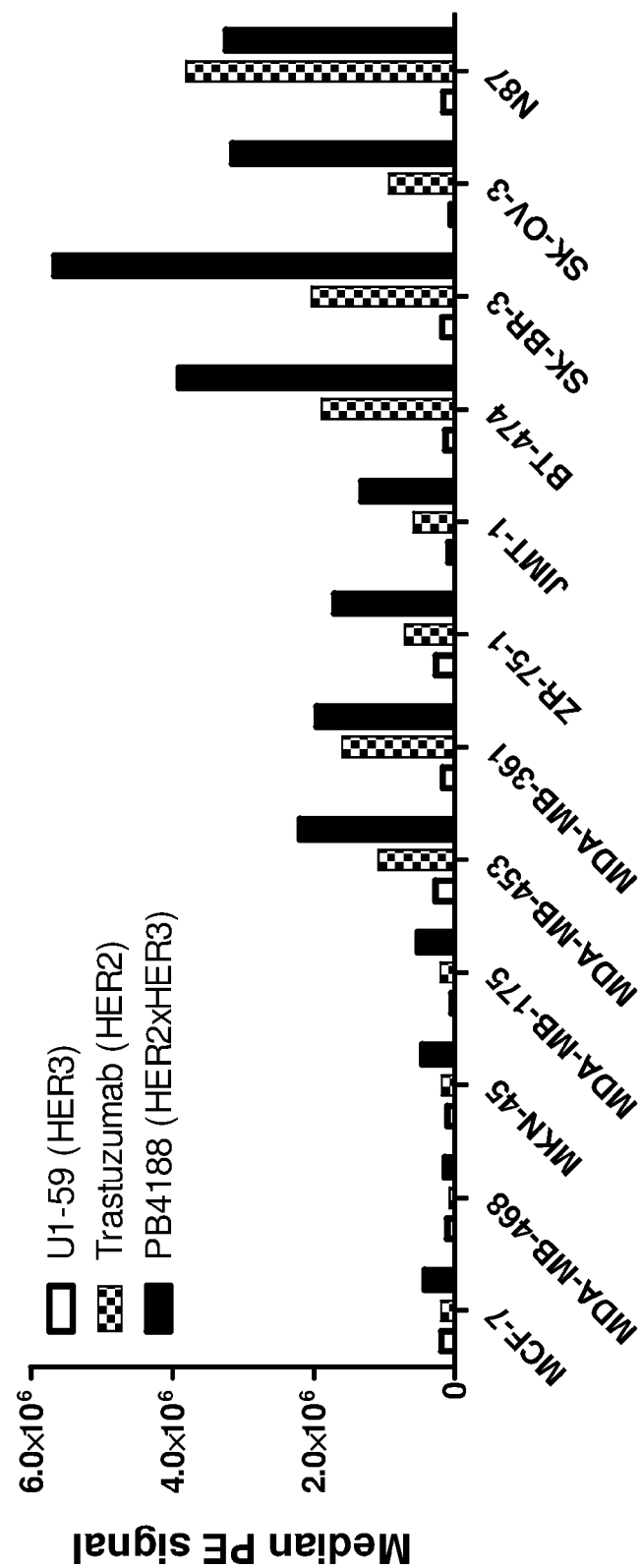


Fig. 26

68/100

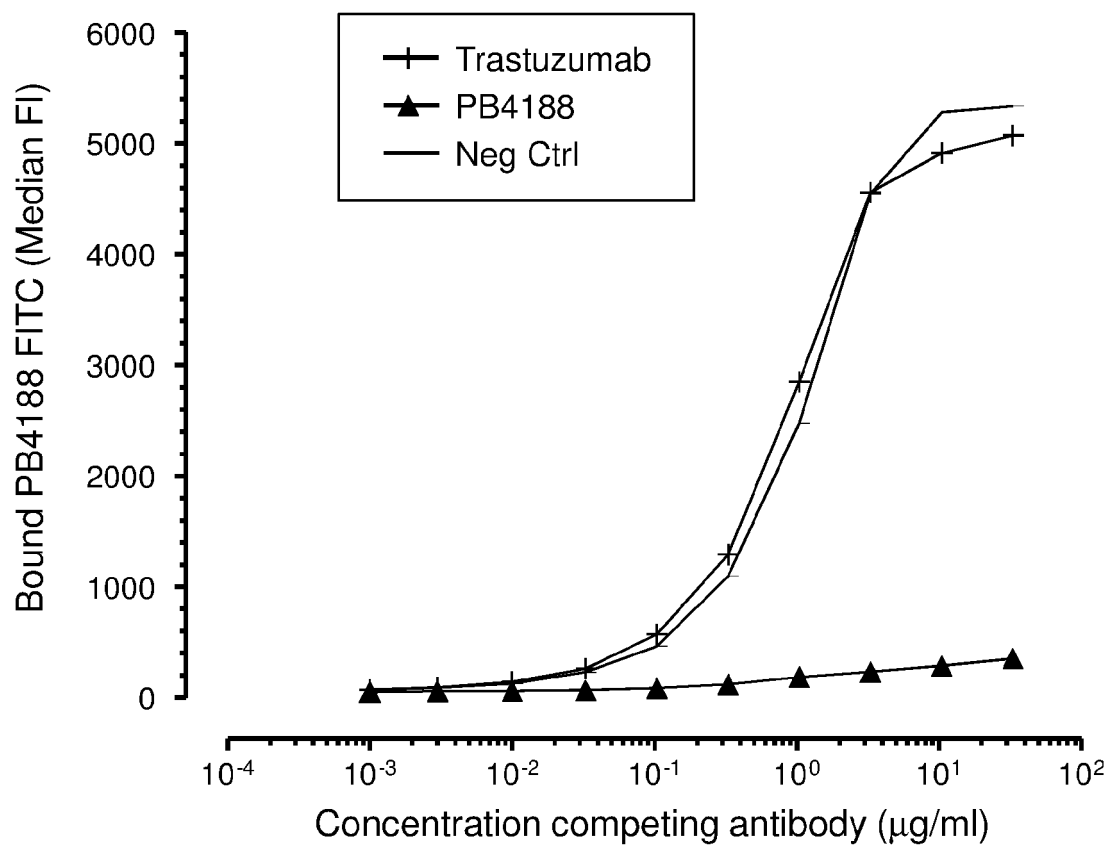


Fig. 27

69/100

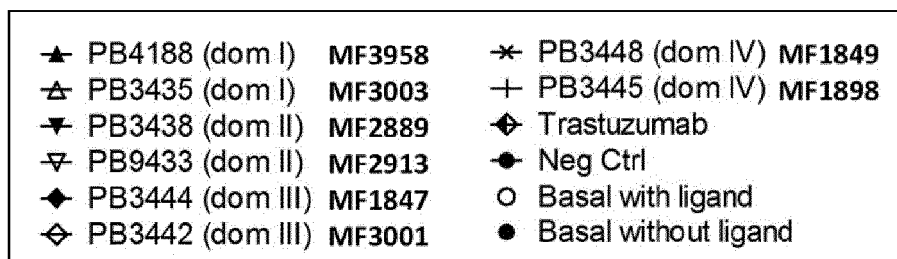
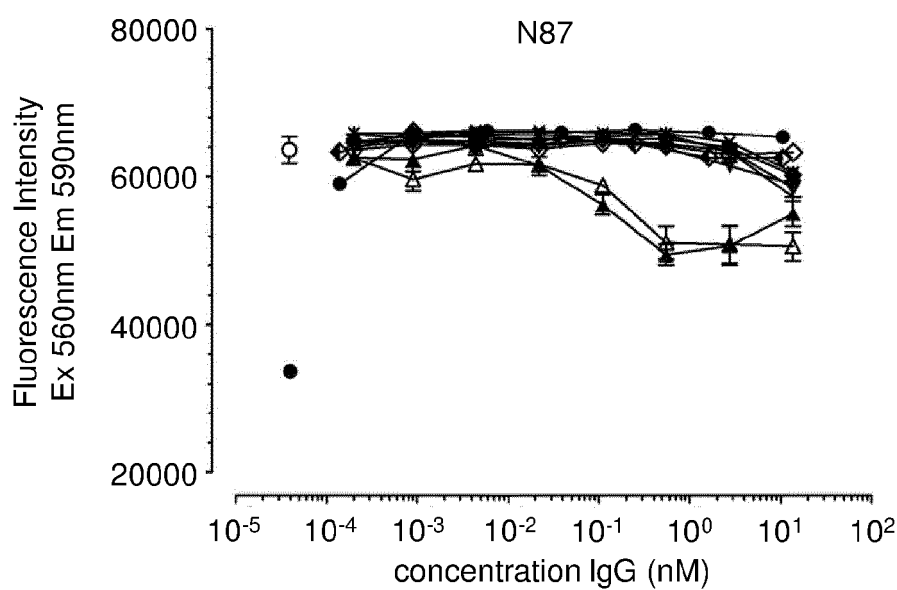
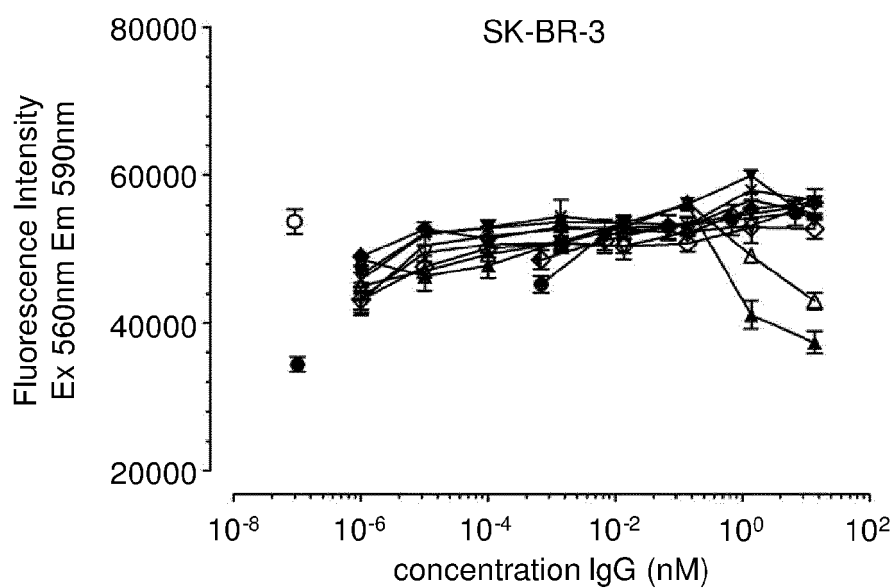


Fig. 28

70/100

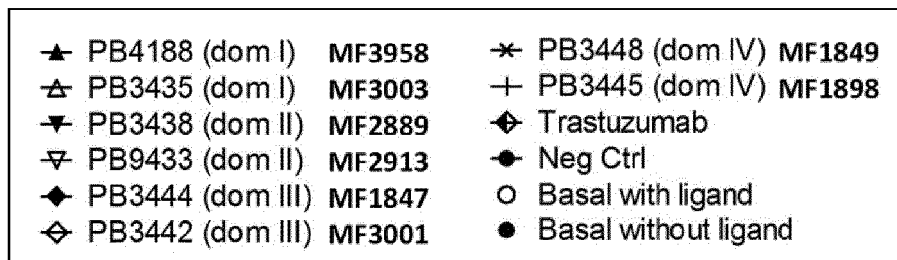
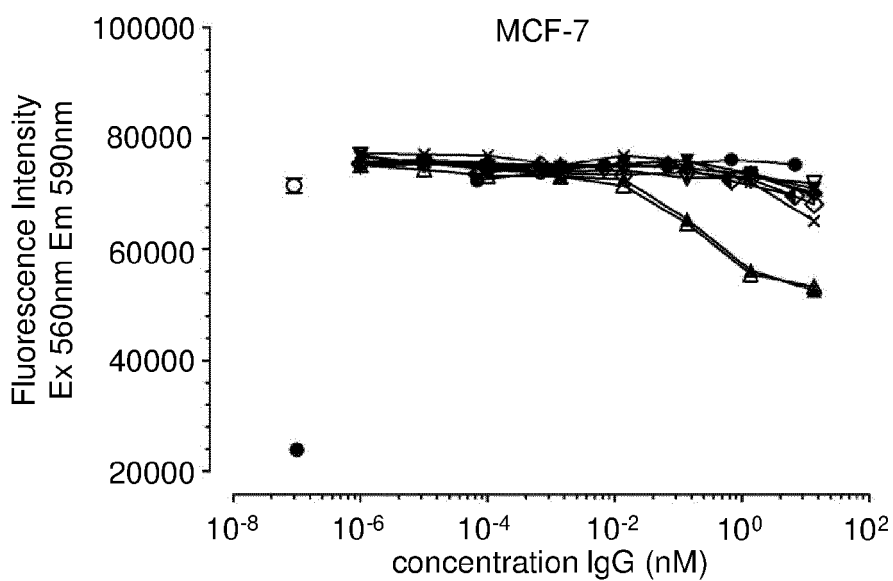


Fig. 28, Cont'd

71/100

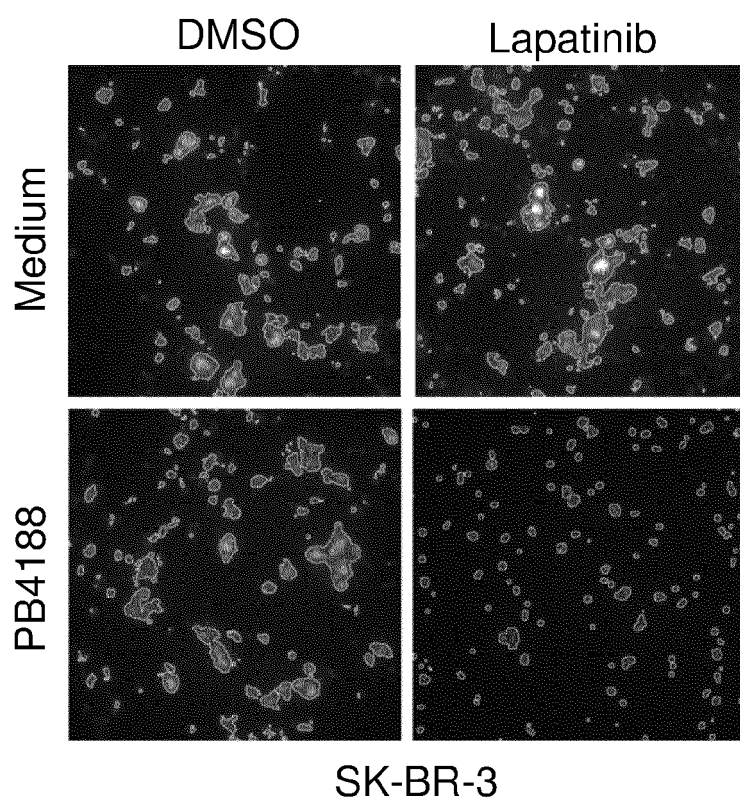
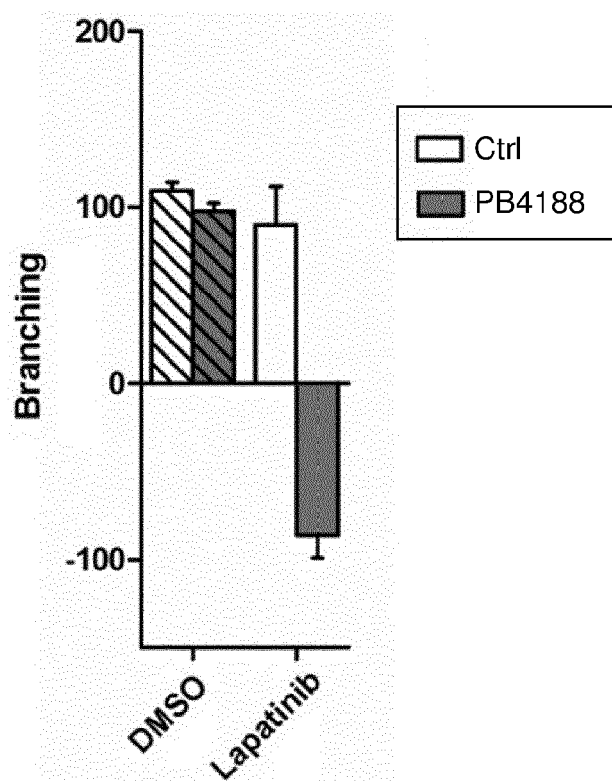


Fig. 29

72/100

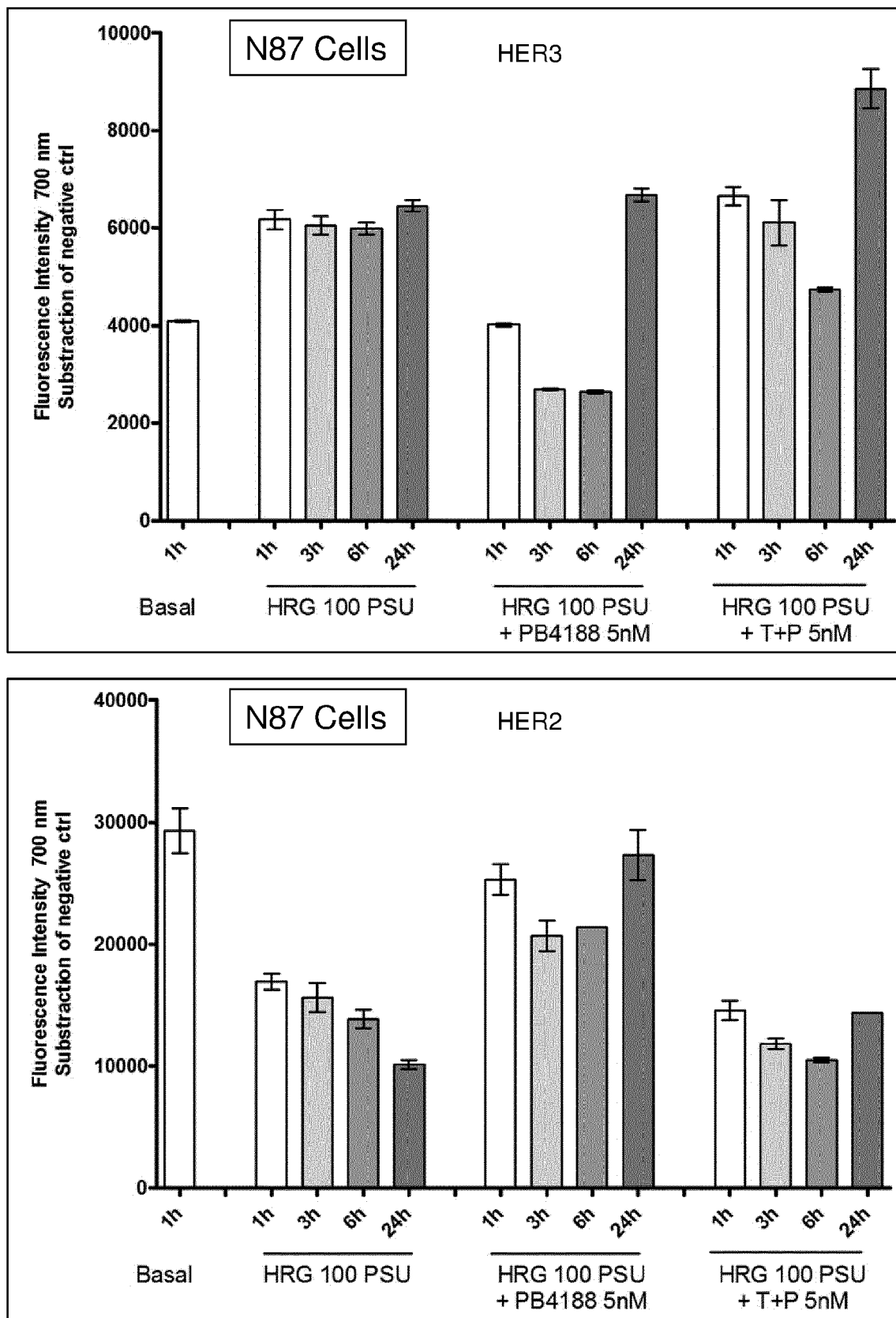


Fig. 30A

73/100

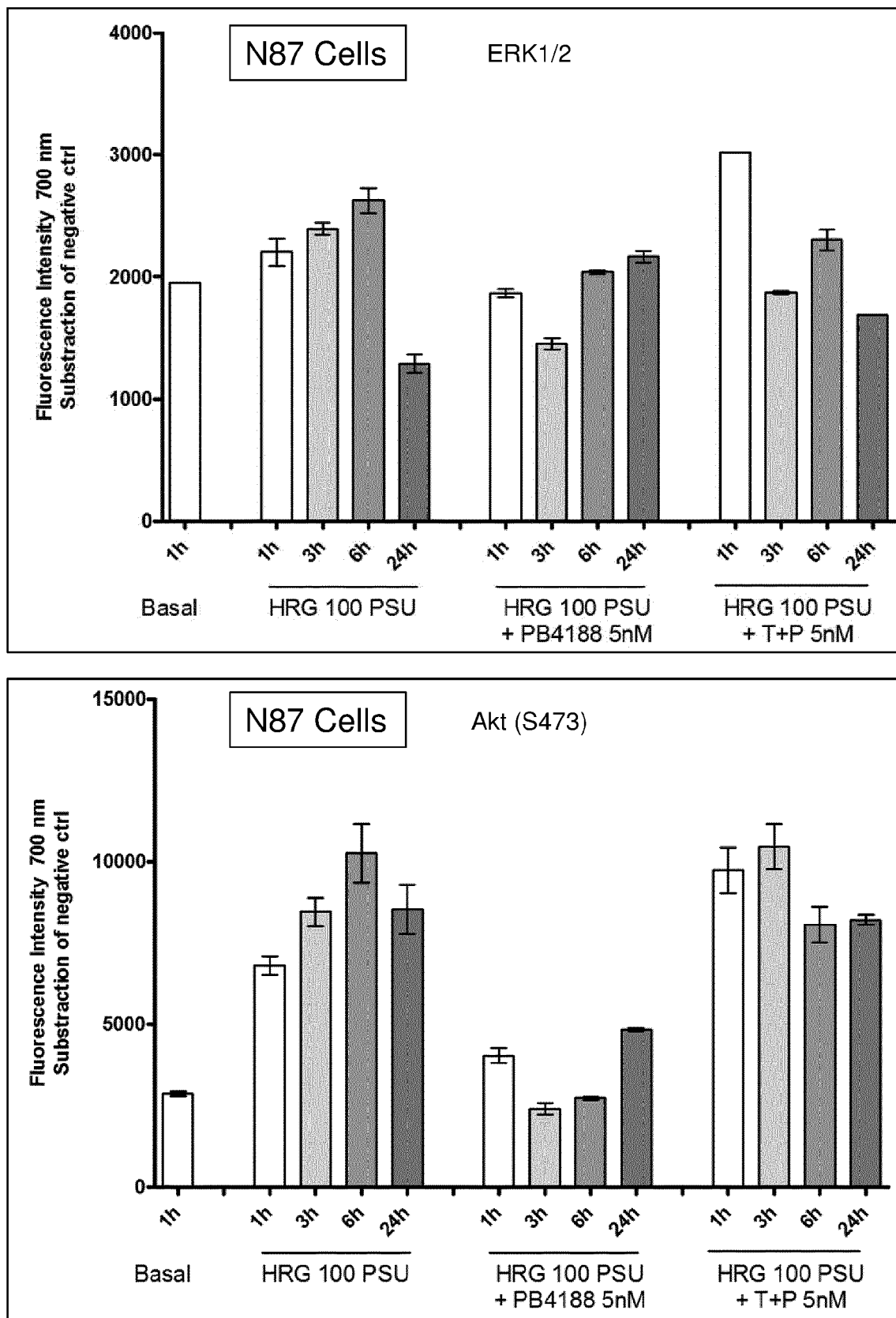


Fig. 30A, Cont'd

74/100

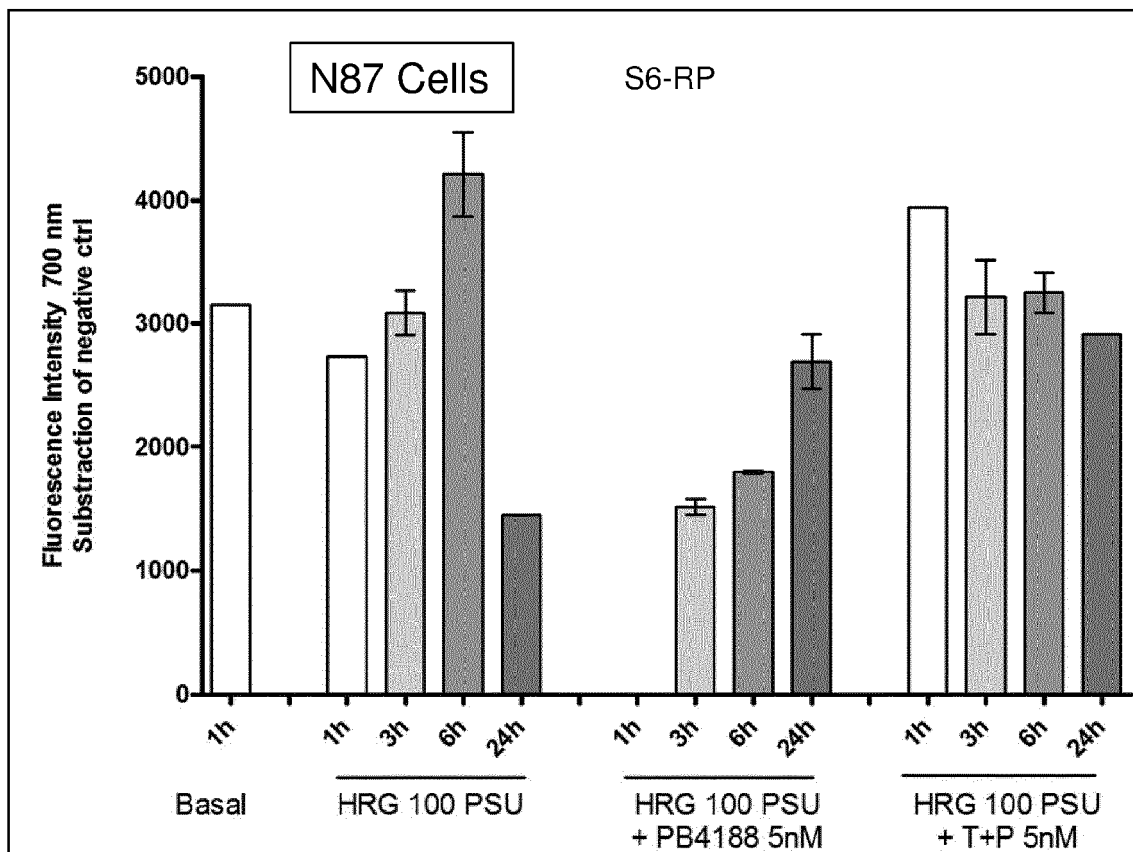


Fig. 30A, Cont'd

75/100

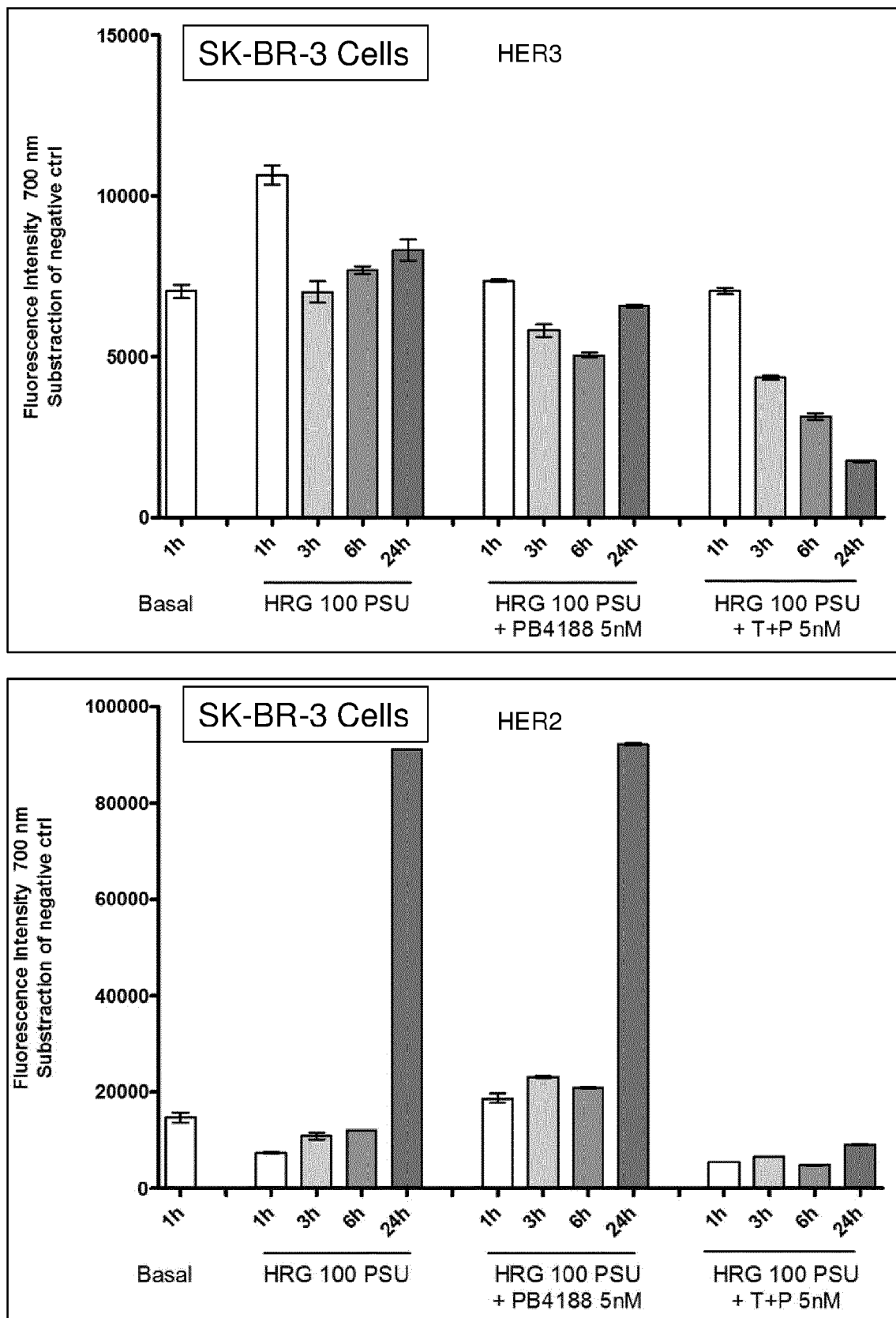


Fig. 30B

76/100

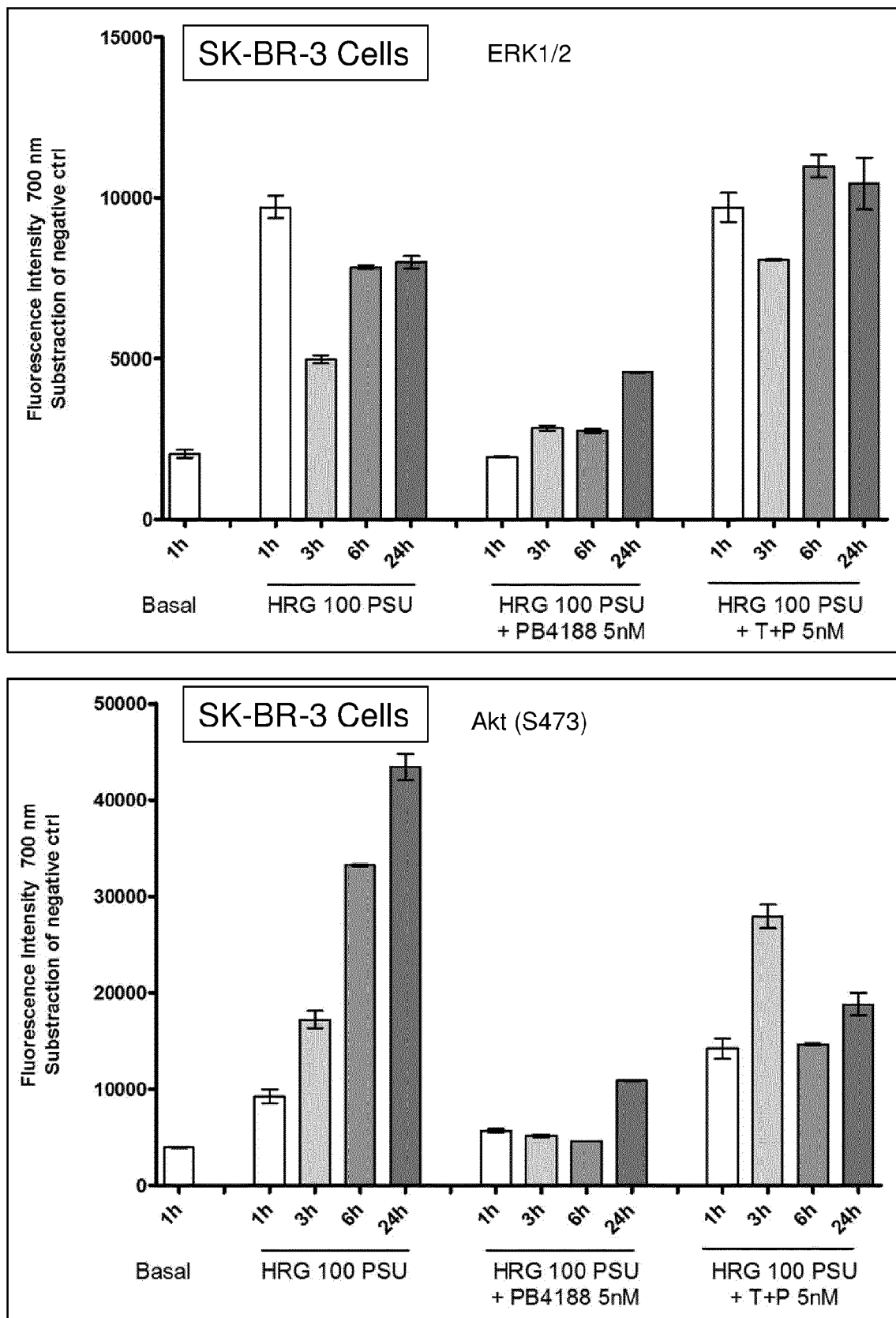


Fig. 30B, Cont'd

77/100

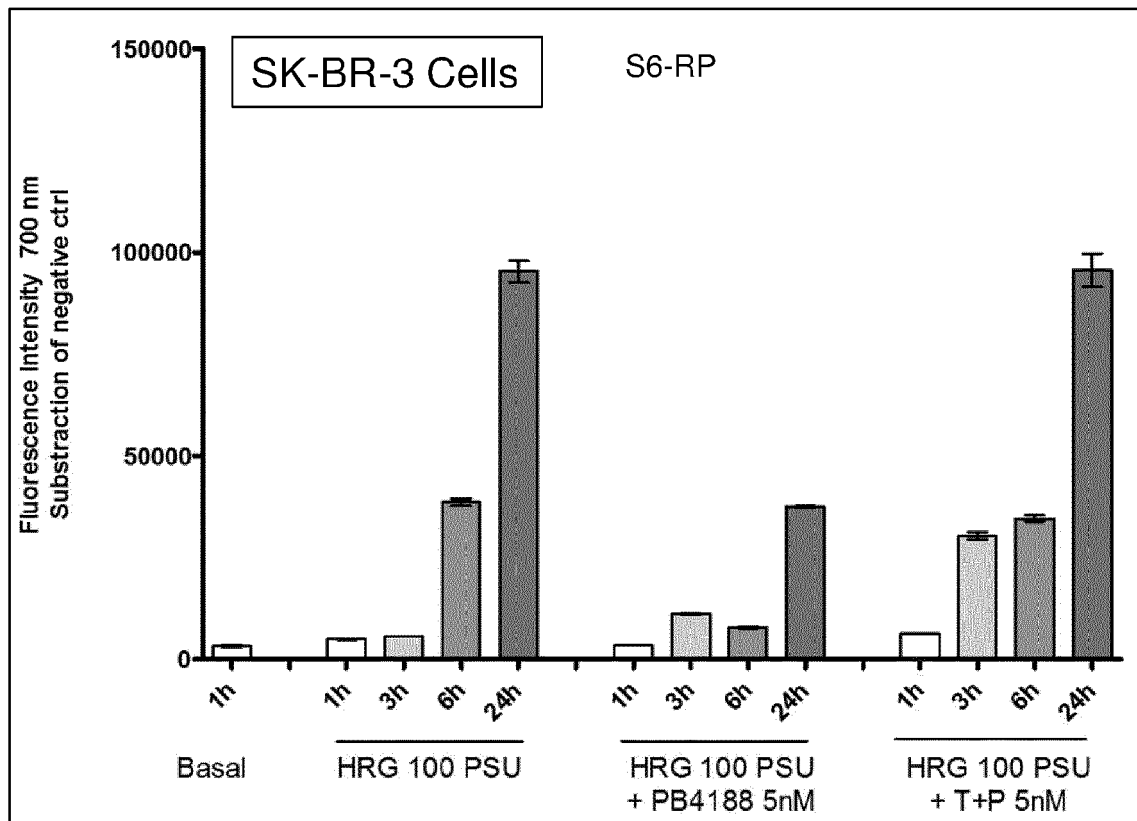


Fig. 30B, Cont'd

78/100

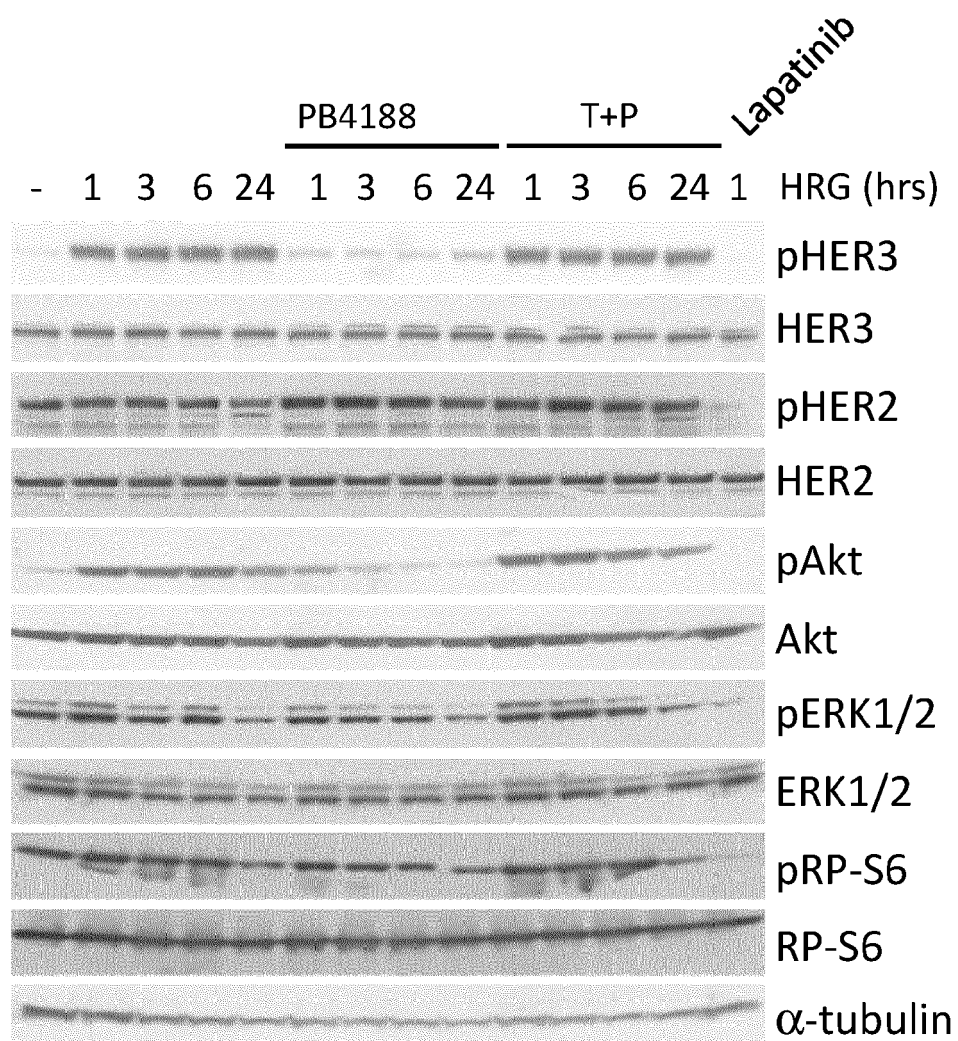


Fig. 31

79/100

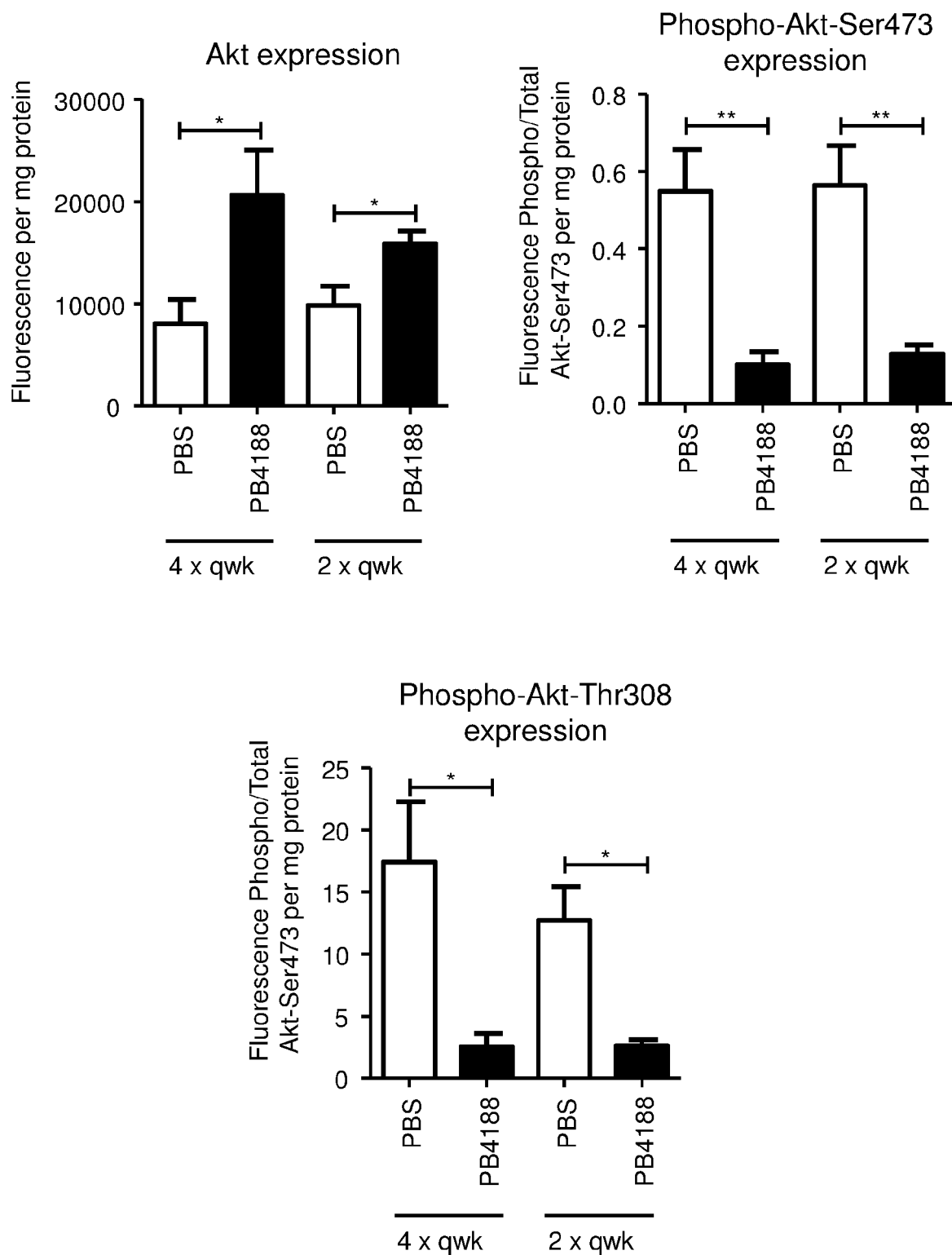


Fig. 32

80/100

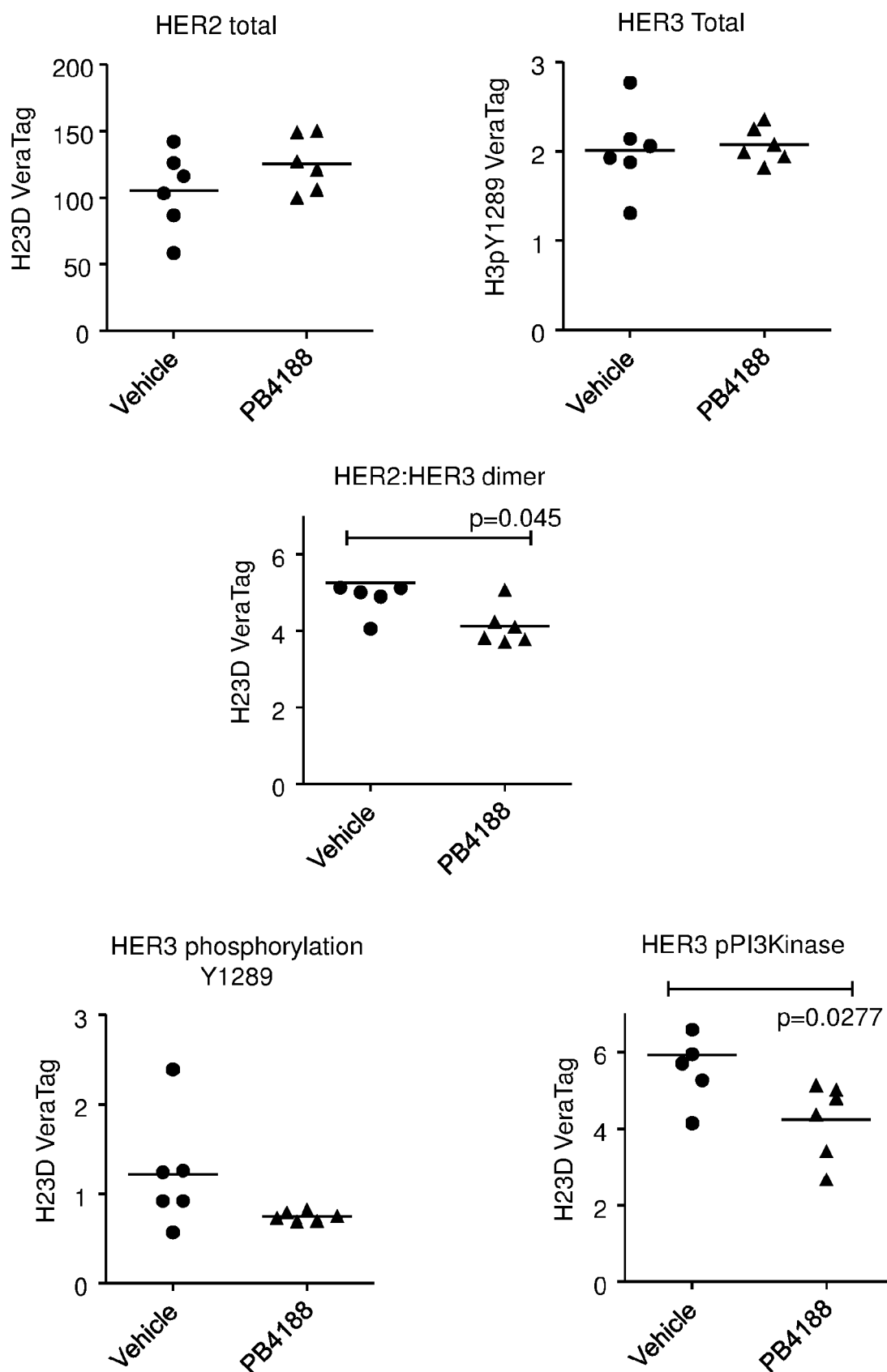


Fig. 33

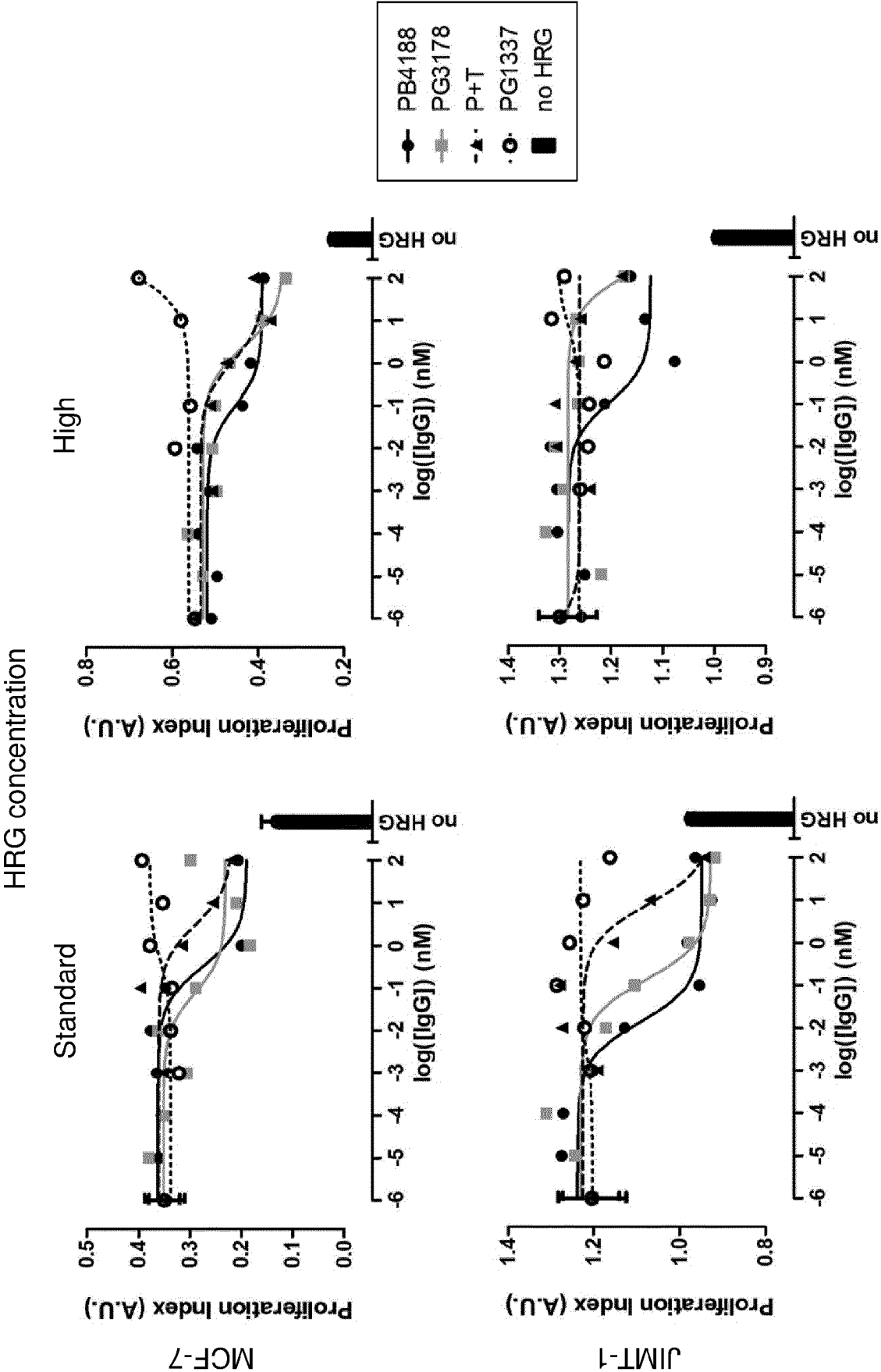


Fig. 34

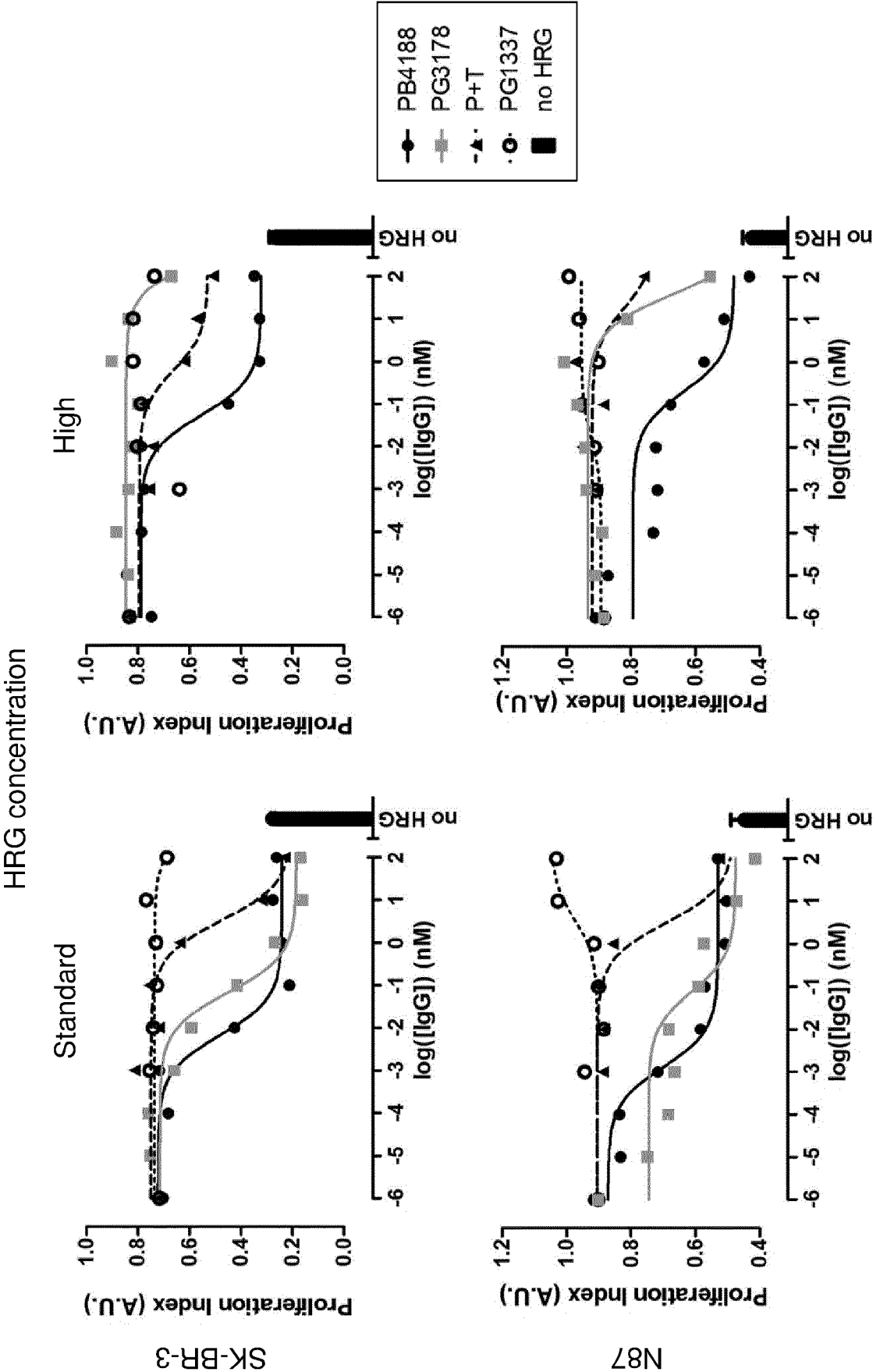


Fig. 34, Cont'd

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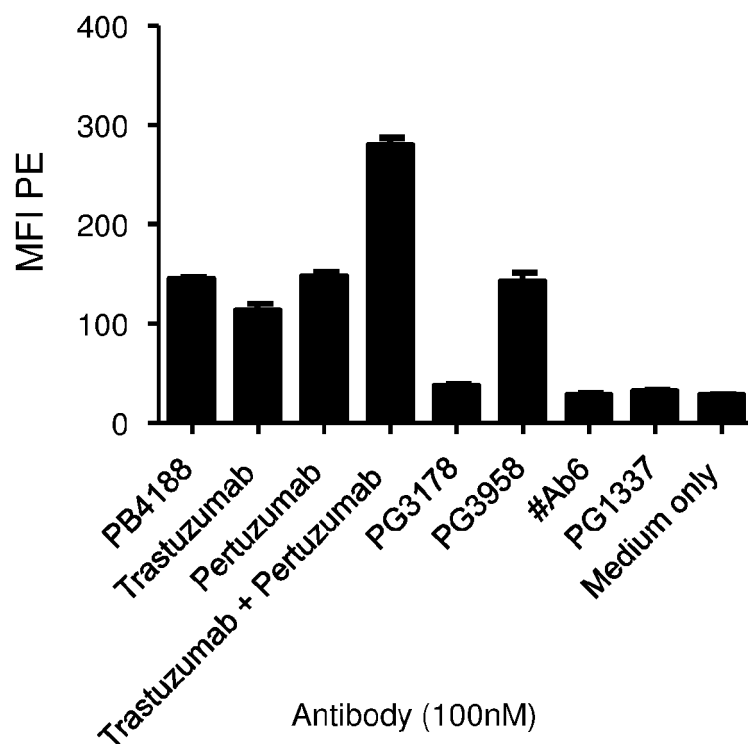


Fig. 35A

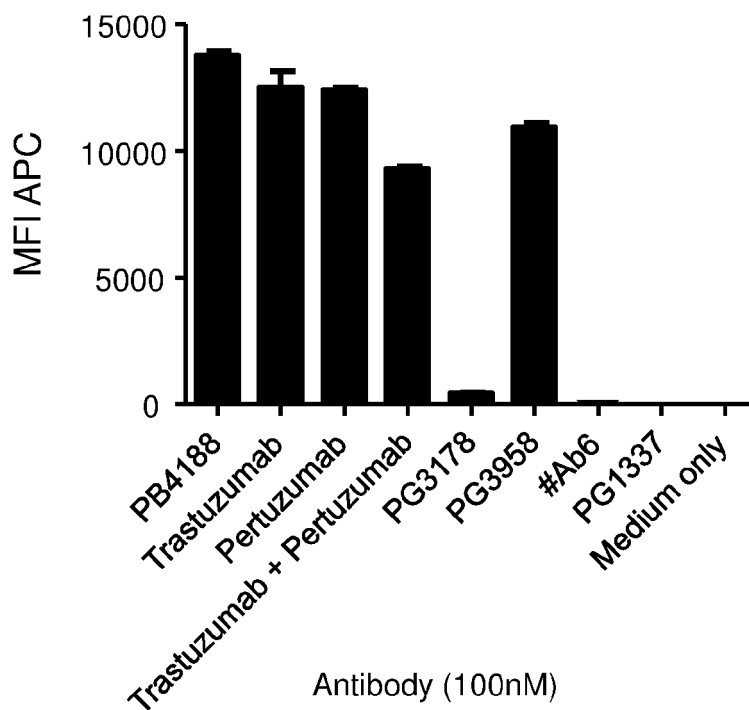


Fig. 35B

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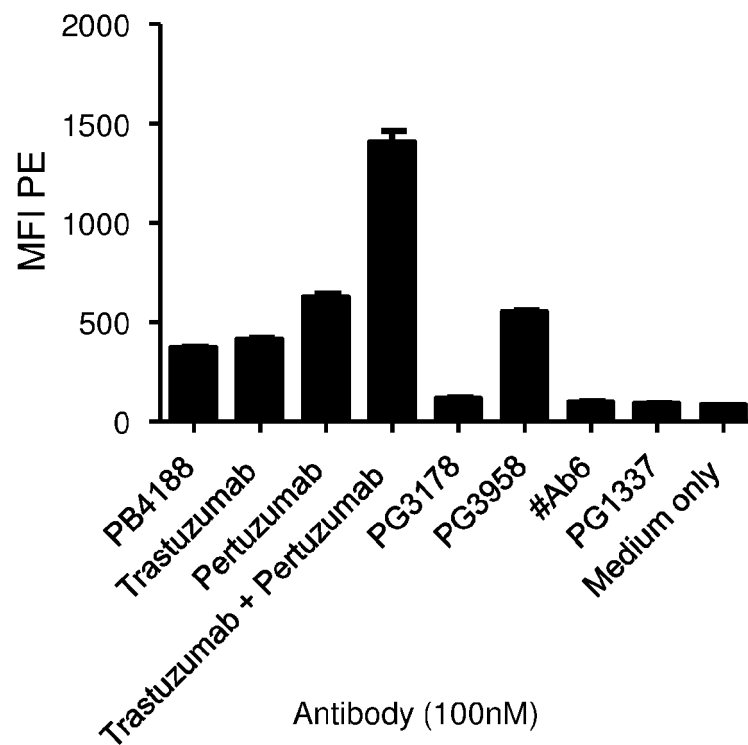


Fig. 35C

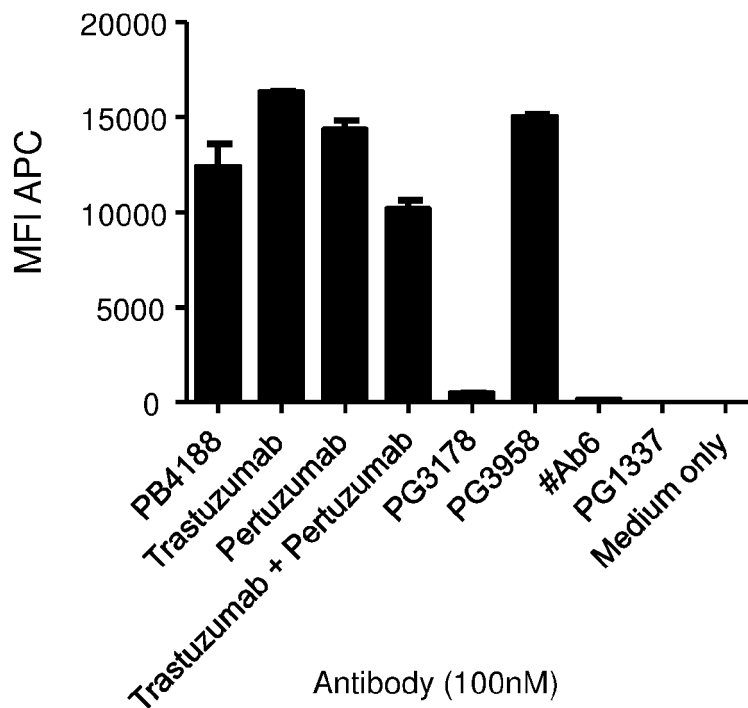


Fig. 35D

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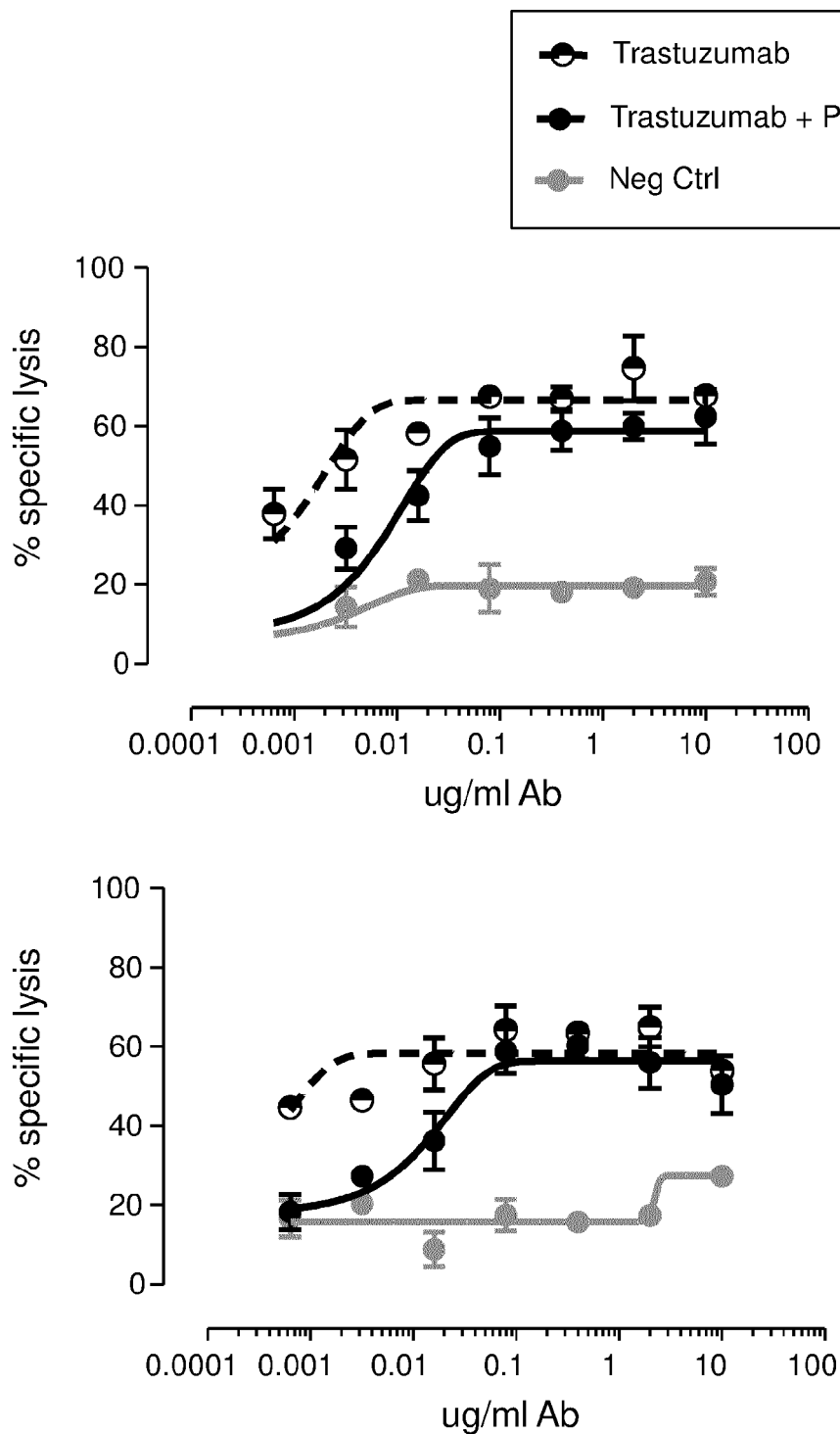


Fig. 36

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Fig. 37

Amino acid alignment of MF3178 variants

	CDR1												CDR2					
	1	10	20	30	40	50	60											
MF3178	QVQLVQSGAE	EVKKPGASVK	VSCKASCYTF	<u>GYMH</u>	WVRQAPGQGLEWMG	<u>WINPNSGGTNYAQK</u>	<u>FOG</u>											
MF6055	D.....				A.....	S.....	K.....											
MF6056	D.....		T.		A.....	S.....	K.....											
MF6057	D.....		T.			Q.....												
MF6058	D.....		T.		A.....	Q.....	K.....											
MF6059						G.S.....												
MF6060	D.....				A.....	Q.....	K.....											
MF6061						Q.....	K.....											
MF6062						G.S.....												
MF6063						Q.....	K.....											
MF6064					K.....	Q.....												
MF6065				S.		QG.S.....												
MF6066						Q.S.....												
MF6067						Q.....												
MF6068						Q.....												
MF6069						Q.....												
MF6070				S.		SG.S.....												
MF6071						S.S.....												
MF6072						S.....												
MF6073						S.....												
MF6074						S.....												

	CDR3											
	70	80	90	100	110	120						
MF3178	RVITMTRDTSIS	TAYMELSR	LRSDDTAVYYCAR	<u>DHGSRRHFWSYWGFDY</u>		WGQGTLLVTVSS						
MF6055	E..T.....		T.									
MF6056	..S...E..T....	Q.	T.									
MF6057		Q.										
MF6058	..S...E..T....	Q.	T.									
MF6059												
MF6060	E..T.....		T.									
MF6061	T.....											
MF6062	T.....											
MF6063	T.....											
MF6064	T.....											
MF6065	T..V.....		E.									
MF6066	T.....	S.	E.									
MF6067	T..V.....	S.										
MF6068	T.....											
MF6069												
MF6070	T..V.....		E.									
MF6071	T.....	S.	E.									
MF6072	T..V.....	S.										
MF6073	T.....											
MF6074												

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Fig. 37, Cont'd

Nucleic acid alignment of MF3178 variants (*without* end of leader sequence)

```
MF3178 CAGGTGCAGCTGGTGCAGTCTGGGGCTGAGGTGAAGAAGCCTGGGGCCTCAGTGAAGGTCTCCTGCAAG
MF6058 .....C.....A.G.....
MF6061 .....
MF6065 .....
```

CDR1

```
MF3178 GCTTCTGGATACACCTTCACC GGCTACTATATGCAC TGGGTGCGACAGGCCCTGGACAAGGGCTTG
MF6058 .....CT....
MF6061 .....
MF6065 .....TCT.....
```

CDR2

```
MF3178 AGTGGATGGGA TGGATCAACCCTAACAGTGGTGGCACAACTATGCACAGAAGTTTCAGGGC AGGGT
MF6058 .....C.A.....A.....
MF6061 .....C.G.....A.....
MF6065 .....C.GG.G...TCT.....
```

```
MF3178 CACGATGACCAGGGACACGTCCATCAGCACAGCCTACATGGAGCTGAGCAGGCTGAGATCTGACGACAC
MF6058 .T.T.....G.....CA.....C.....
MF6061 .....C.....
MF6065 .....C.....TG.....G.....
```

CDR3

```
MF3178 GGCTGTGTATTACTGTGCAAGA GATCATGGTTCTCGTCATTTCTGGTCTTACTGGGGCTTTGATTAT
MF6058 ....AC.....
MF6061 .....
MF6065 .....
```

```
MF3178 TGGGGCCAAGGTACCCTGGTCACCGTCTCCAGT
MF6058 .....
MF6061 .....
MF6065 .....
```

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Fig. 37, Cont'd

DNA sequences of MF3178 variants (without end of leader sequence)**MF6055**

```
>MF6055_VH
caggtgcagctggtgcagctctggggctgacgtgaagaagcctggggcctcagtgaaaggtctcctgcaagg
cttctggatacaccttcaccggctactatatgcactgggtgcgacaggccctggacaagctcttgagtg
gatgggatggatcaacccttctagtgggtggcacaactatgcaaagaagtttcagggcaggggtcacgatg
accagggagacgtccacaagcacagcctacatggagctgagcaggtgagatctgacgacacgggtacgt
attactgtgcaagagatcatggttctcgtcatttctgggtcttactggggccttgattattggggccaagg
taccctggtcaccgtctccagt
```

MF6056

```
>MF6056_VH
caggtgcagctggtgcagctctggggctgacgtgaagaagcctggggcctcagtgaaaggtcacgtgcaagg
cttctggatacaccttcaccggctactatatgcactgggtgcgacaggccctggacaagctcttgagtg
gatgggatggatcaacccttctagtgggtggcacaactatgcaaagaagtttcagggcaggggtctctatg
accagggagacgtccacaagcacagcctacatgcagctgagcaggtgagatctgacgacacgggtacgt
attactgtgcaagagatcatggttctcgtcatttctgggtcttactggggccttgattattggggccaagg
taccctggtcaccgtctccagt
```

MF6057

```
>MF6057_VH
caggtgcagctggtgcagctctggggctgatgtgaagaagcctggggcctcagtgaaaggtcacgtgcaagg
cttctggatacaccttcaccggctactatatgcactgggtgcgacaggccctggacaagggcttgagtg
gatgggatggatcaaccctcagagtgggtggcacaactatgcacagaagtttcagggcaggggtcacgatg
accagggacacgtccatcagcacagcctacatgcagctgagcaggtgagatctgacgacacgggtgtgt
attactgtgcaagagatcatggttctcgtcatttctgggtcttactggggccttgattattggggccaagg
taccctggtcaccgtctccagt
```

MF6058

```
>MF6058_VH
caggtgcagctggtgcagctctggggctgacgtgaagaagcctggggcctcagtgaaaggtcacgtgcaagg
cttctggatacaccttcaccggctactatatgcactgggtgcgacaggccctggacaagctcttgagtg
gatgggatggatcaaccctcaaagtgggtggcacaactatgcaaagaagtttcagggcaggggtctctatg
accagggagacgtccacaagcacagcctacatgcagctgagcaggtgagatctgacgacacgggtacgt
attactgtgcaagagatcatggttctcgtcatttctgggtcttactggggccttgattattggggccaagg
taccctggtcaccgtctccagt
```

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Fig. 37, Cont'd

MF6059

>MF6059_VH

caggtgcagctggtgcagctctggggctgaggtgaagaagcctggggcctcagtgaaggtctcctgcaagg
cttctggatacaccttcaccggctactatatgcactgggtgcgacaggccctggacaagggcttgagtg
gatgggatggatcaaccctggcagtggttctacaaactatgcacagaagtttcagggcagggtcacgatg
accagggacacgtccatcagcacagcctacatggagctgagcaggtgagatctgacgacacggctgtgt
attactgtgcaagagatcatggttctcgtcatttctggcttactggggctttgattattggggccaagg
taccctggtcaccgtctccagt

MF6060

>MF6060_VH

caggtgcagctggtgcagctctggggctgacgtgaagaagcctggggcctcagtgaaggtctcctgcaagg
cttctggatacaccttcaccggctactatatgcactgggtgcgacaggccctggacaaggtcttgagtg
gatgggatggatcaaccctcaaagtgggtggcacaactatgcaaagaagtttcagggcagggtcacgatg
accagggagacgtccacaagcacagcctacatggagctgagcaggtgagatctgacgacacggctacgt
attactgtgcaagagatcatggttctcgtcatttctggcttactggggctttgattattggggccaagg
taccctggtcaccgtctccagt

MF6061

>MF6061_VH

caggtgcagctggtgcagctctggggctgaggtgaagaagcctggggcctcagtgaaggtctcctgcaagg
cttctggatacaccttcaccggctactatatgcactgggtgcgacaggccctggacaagggcttgagtg
gatgggatggatcaaccctcagagtgggtggcacaactatgcacagaagtttaagggcagggtcacgatg
accagggacacgtccaccagcacagcctacatggagctgagcaggtgagatctgacgacacggctgtgt
attactgtgcaagagatcatggttctcgtcatttctggcttactggggctttgattattggggccaagg
taccctggtcaccgtctccagt

MF6062

>MF6062_VH

caggtgcagctggtgcagctctggggctgaggtgaagaagcctggggcctcagtgaaggtctcctgcaagg
cttctggatacaccttcaccggctactatatgcactgggtgcgacaggccctggacaagggcttgagtg
gatgggatggatcaaccctggcagtggttctacaaactatgcacagaagtttcagggcagggtcacgatg
accagggacacgtccacaagcacagcctacatggagctgagcaggtgagatctgacgacacggctgtgt
attactgtgcaagagatcatggttctcgtcatttctggcttactggggctttgattattggggccaagg
taccctggtcaccgtctccagt

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Fig. 37, Cont'd

MF6063

>MF6063_VH

caggtgcagctggtgcagctctggggctgaggtgaagaagcctggggcctcagtgaaaggtctcctgcaagg
cttctggatacaccttcaccggctactatatgcactgggtgcgacaggccctggacaagggcttgagtg
gatgggatggatcaaccctcagagtgggtggcacaactatgcaaagaagtttcagggcagggtcacgatg
accagggacacgtccaccagcacagcclacalggagctlgagcaggclgagalcclgacgacacggcclglgl
attactgtgcaagagatcatggttctcgtcatttctgggtcttactggggccttgattattggggccaagg
taccctggtcaccgtctccagt

MF6064

>MF6064_VH

caggtgcagctggtgcagctctggggctgaggtgaagaagcctggggcctcagtgaaaggtctcctgcaagg
cttctggatacaccttcaccggctactatatgcactgggtgcgacaggccctggaaagggcttgagtg
gatgggatggatcaaccctcagagtgggtggcacaactatgcacagaagtttcagggcagggtcacgatg
accagggacacgtccaccagcacagcctacatggagctgagcaggctgagatctgacgacacggctgtgt
attactgtgcaagagatcatggttctcgtcatttctgggtcttactggggccttgattattggggccaagg
taccctggtcaccgtctccagt

MF6065

>MF6065_VH

caggtgcagctggtgcagctctggggctgaggtgaagaagcctggggcctcagtgaaaggtctcctgcaagg
cttctggatacaccttcaccctcttactatatgcactgggtgcgacaggccctggacaagggcttgagtg
gatgggatggatcaaccctcaggggggttctacaaactatgcacagaagtttcagggcagggtcacgatg
accagggacacgtccaccagcacagtgtacatggagctgagcaggctgagatctgaggacacggctgtgt
attactgtgcaagagatcatggttctcgtcatttctgggtcttactggggccttgattattggggccaagg
taccctggtcaccgtctccagt

MF6066

>MF6066_VH

caggtgcagctggtgcagctctggggctgaggtgaagaagcctggggcctcagtgaaaggtctcctgcaagg
cttctggatacaccttcaccggctactatatgcactgggtgcgacaggccctggacaagggcttgagtg
gatgggatggatcaaccctcagagtgggttctacaaactatgcacagaagtttcagggcagggtcacgatg
accagggacacgtccaccagcacagcctacatggagctgagctctctgagatctgaggacacggctgtgt
attactgtgcaagagatcatggttctcgtcatttctgggtcttactggggccttgattattggggccaagg
taccctggtcaccgtctccagt

Fig. 37, Cont'd

MF6067

>MF6067_VH

caggtgcagctggtgcagctctggggctgaggtgaagaagcctggggcctcagtggaaggtctcctgcaagg
cttctggatacaccttcaccggctactatatgcactgggtgcgacaggccctggacaagggcttgagtg
gatgggatggatcaaccctcagagtgggtggcacaactatgcacagaagtttcagggcagggtcacgatg
accagggacacgtccaccagcacagcclacalggagclgagclclclgagclclgacgacacggclglgl
attactgtgcaagagatcatggttctcgtcatttctgggtcttactggggctttgattattggggccaagg
taccctggtcaccgtctccagt

MF6068

>MF6068_VH

caggtgcagctggtgcagctctggggctgaggtgaagaagcctggggcctcagtggaaggtctcctgcaagg
cttctggatacaccttcaccggctactatatgcactgggtgcgacaggccctggacaagggcttgagtg
gatgggatggatcaaccctcagagtgggtggcacaactatgcacagaagtttcagggcagggtcacgatg
accagggacacgtccaccagcacagcctacatggagctgagcagggctgagatctgacgacacggctgtgt
attactgtgcaagagatcatggttctcgtcatttctgggtcttactggggctttgattattggggccaagg
taccctggtcaccgtctccagt

MF6069

>MF6069_VH

caggtgcagctggtgcagctctggggctgaggtgaagaagcctggggcctcagtggaaggtctcctgcaagg
cttctggatacaccttcaccggctactatatgcactgggtgcgacaggccctggacaagggcttgagtg
gatgggatggatcaaccctcagagtgggtggcacaactatgcacagaagtttcagggcagggtcacgatg
accagggacacgtccatcagcacagcctacatggagctgagcagggctgagatctgacgacacggctgtgt
attactgtgcaagagatcatggttctcgtcatttctgggtcttactggggctttgattattggggccaagg
taccctggtcaccgtctccagt

MF6070

>MF6070_VH

caggtgcagctggtgcagctctggggctgaggtgaagaagcctggggcctcagtggaaggtctcctgcaagg
cttctggatacaccttcacctcttactatatgcactgggtgcgacaggccctggacaagggcttgagtg
gatgggatggatcaacccttctgggggttctacaaactatgcacagaagtttcagggcagggtcacgatg
accagggacacgtccaccagcacagtgtacatggagctgagcagggctgagatctgaggacacggctgtgt
attactgtgcaagagatcatggttctcgtcatttctgggtcttactggggctttgattattggggccaagg
taccctggtcaccgtctccagt

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Fig. 37, Cont'd

MF6071

>MF6071_VH

caggtgcagctggtgcagctctggggctgaggtgaagaagcctggggcctcagtggaaggtctcctgcaagg
cttctggatacaccttcaccggctactatatgcaactgggtgcgacaggccctggacaagggcttgagtg
gatgggatggatcaaccttctagtgttctacaaactatgcacagaagtttcagggcagggtcacgatg
accagggacacgcccaccagcacagccacalggagclgagclclclgagclclgaggacacggclglgl
attactgtgcaagagatcatggttctcgtcatttctgggtcttactggggccttgattattggggccaagg
tacctggtcacctctccagt

MF6072

>MF6072_VH

caggtgcagctggtgcagctctggggctgaggtgaagaagcctggggcctcagtggaaggtctcctgcaagg
cttctggatacaccttcaccggctactatatgcaactgggtgcgacaggccctggacaagggcttgagtg
gatgggatggatcaaccttctagtgttggcacaactatgcacagaagtttcagggcagggtcacgatg
accagggacacgtccaccagcacagctctacatggagctgagctctctgagatctgacgacacggctgtgt
attactgtgcaagagatcatggttctcgtcatttctgggtcttactggggccttgattattggggccaagg
tacctggtcacctctccagt

MF6073

>MF6073_VH

caggtgcagctggtgcagctctggggctgaggtgaagaagcctggggcctcagtggaaggtctcctgcaagg
cttctggatacaccttcaccggctactatatgcaactgggtgcgacaggccctggacaagggcttgagtg
gatgggatggatcaaccttctagtgttggcacaactatgcacagaagtttcagggcagggtcacgatg
accagggacacgtccaccagcacagcctacatggagctgagcaggtctgagatctgacgacacggctgtgt
attactgtgcaagagatcatggttctcgtcatttctgggtcttactggggccttgattattggggccaagg
tacctggtcacctctccagt

MF6074

>MF6074_VH

caggtgcagctggtgcagctctggggctgaggtgaagaagcctggggcctcagtggaaggtctcctgcaagg
cttctggatacaccttcaccggctactatatgcaactgggtgcgacaggccctggacaagggcttgagtg
gatgggatggatcaaccttctagtgttggcacaactatgcacagaagtttcagggcagggtcacgatg
accagggacacgcccacacagccacalggagclgagcagglgagclclgacgacacggclglgl
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tacctggtcacctctccagt

93/100

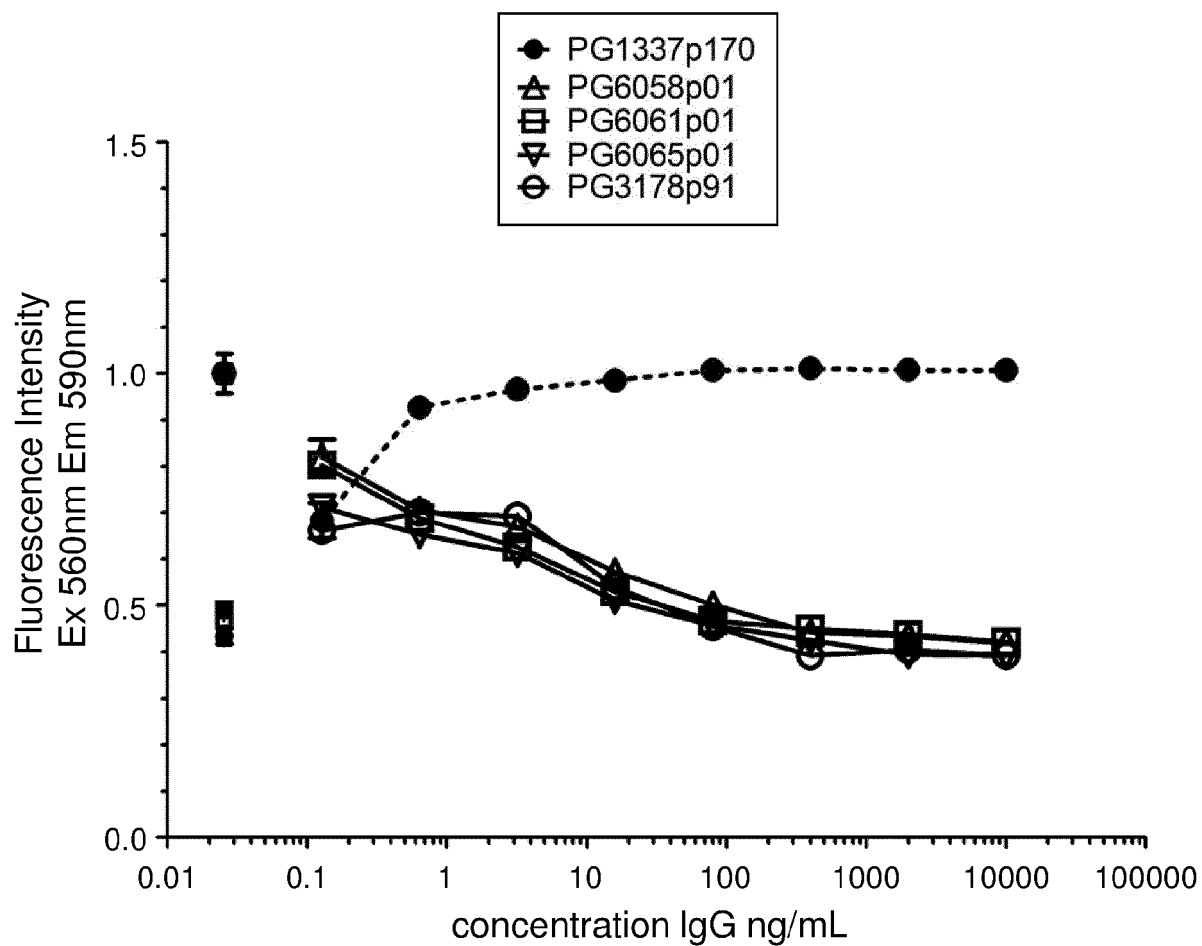


Fig. 38

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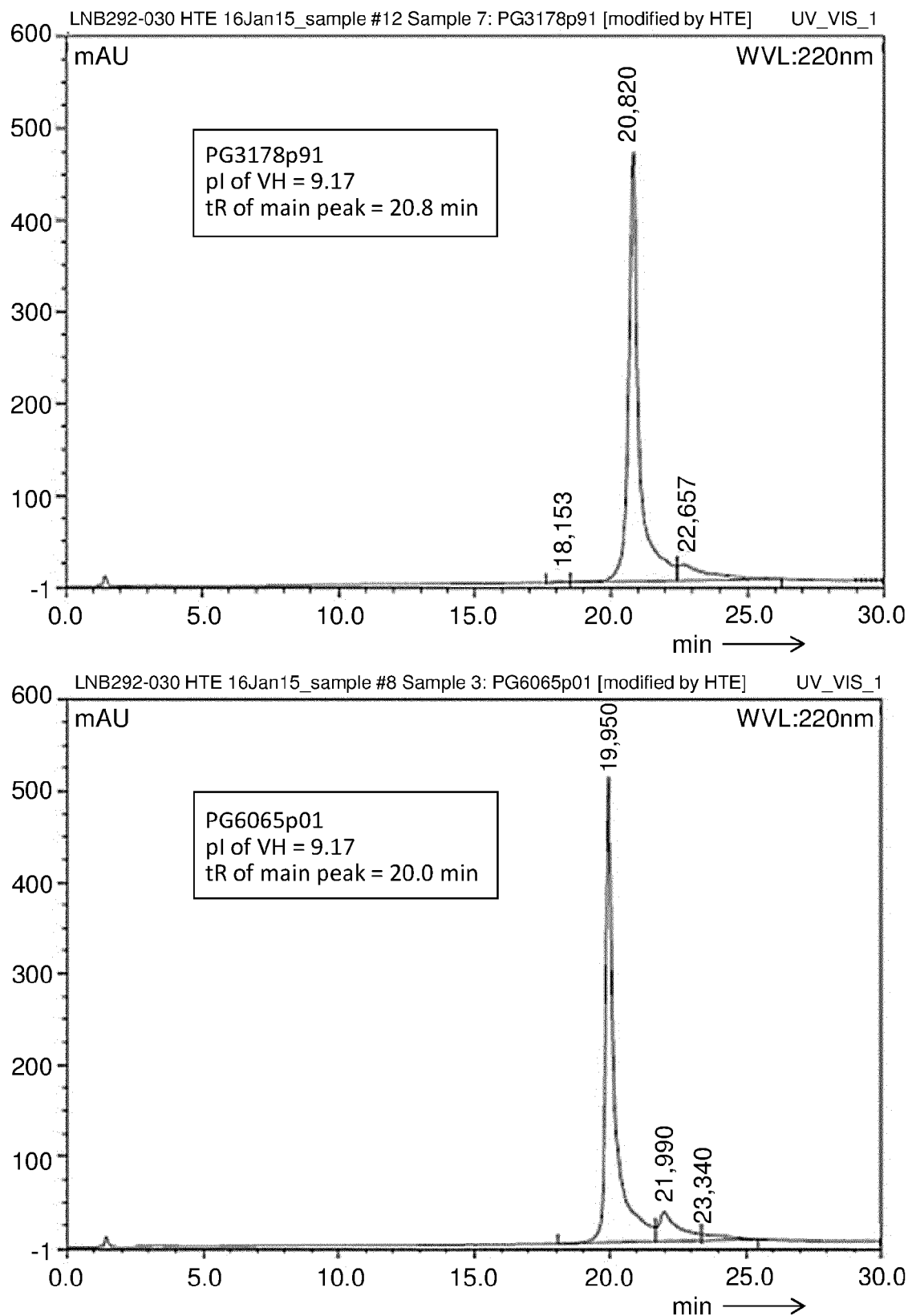


FIG. 39

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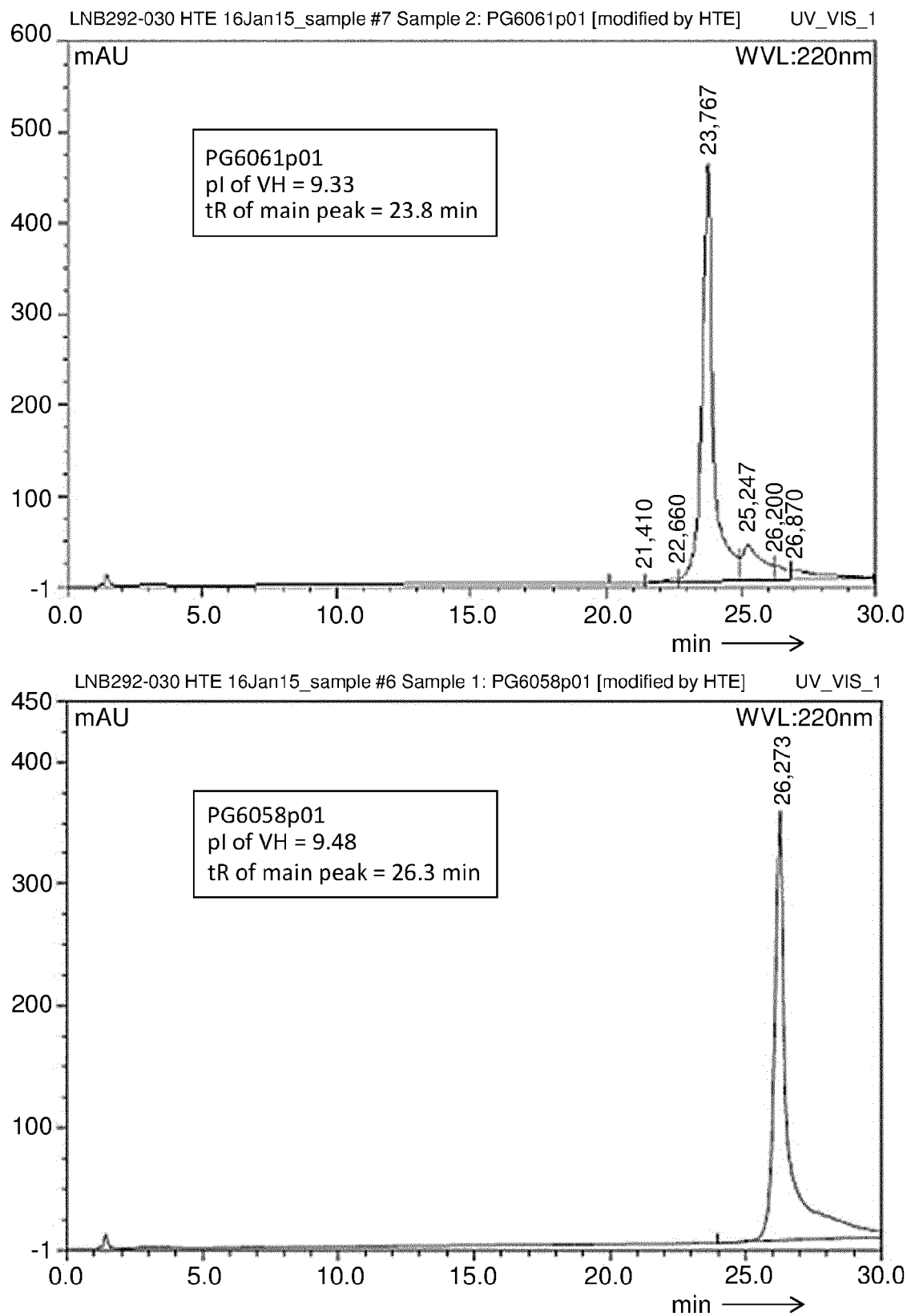


FIG. 39, Cont'd

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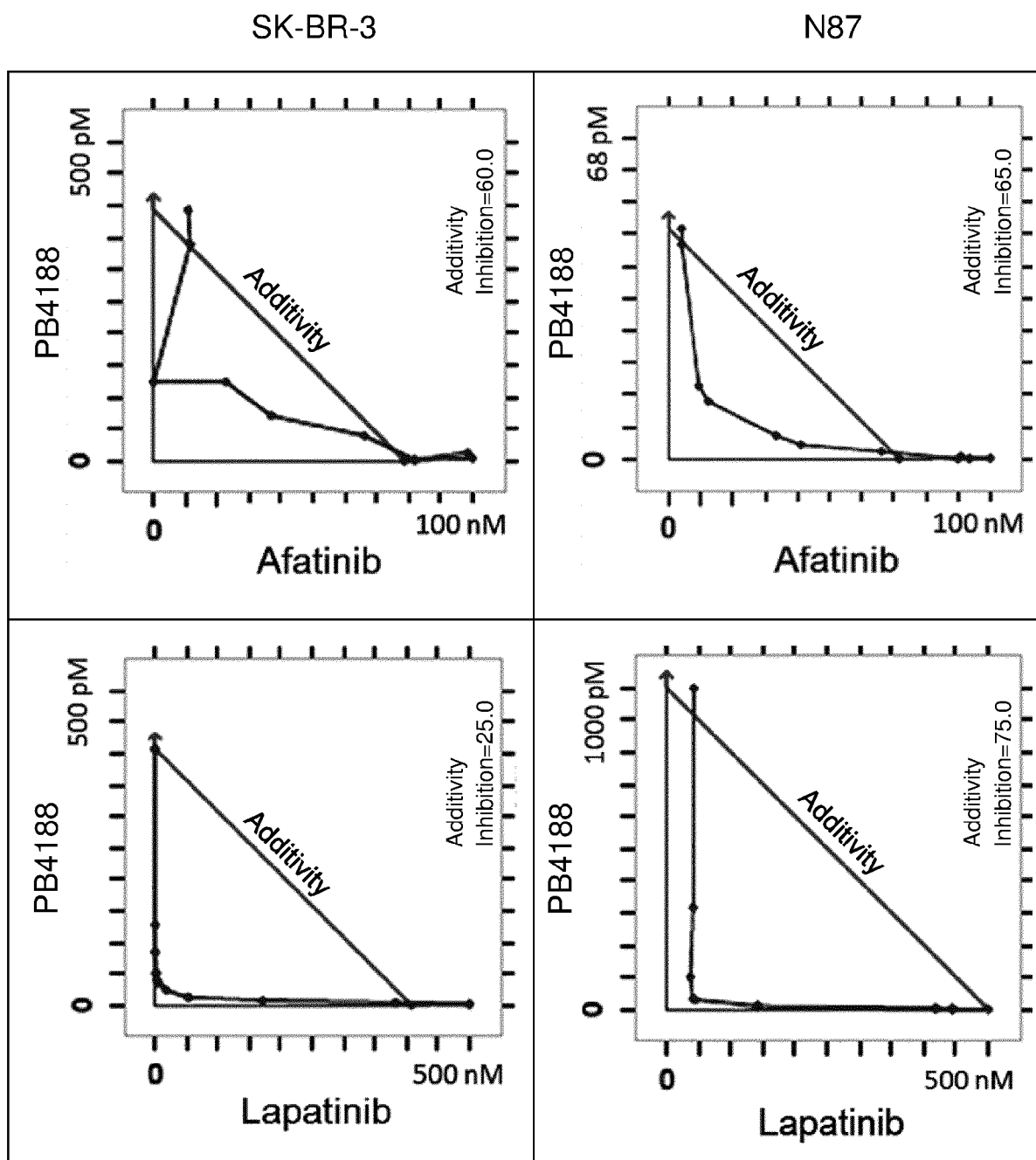


Fig. 40A

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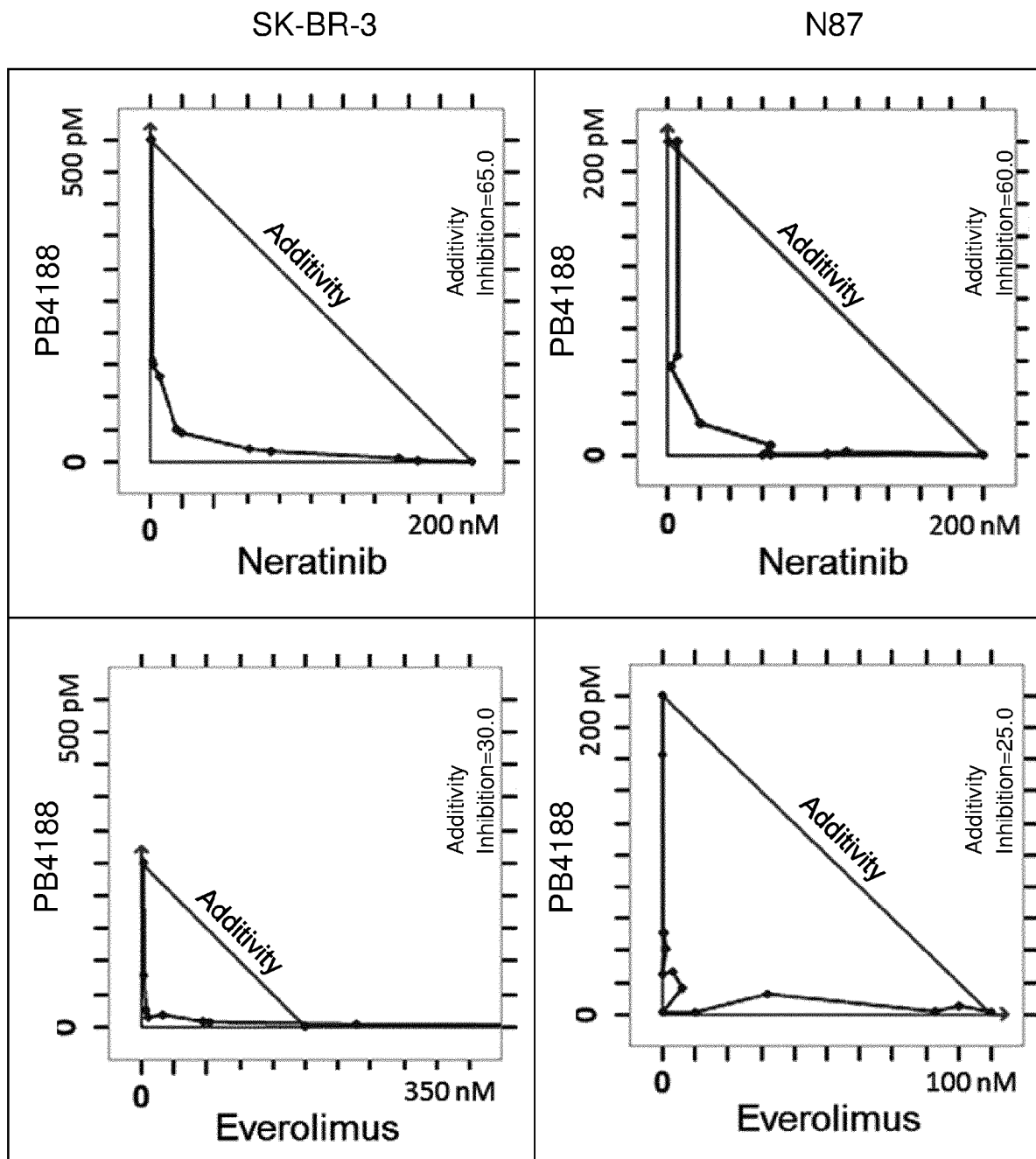


Fig. 40A, Cont'd

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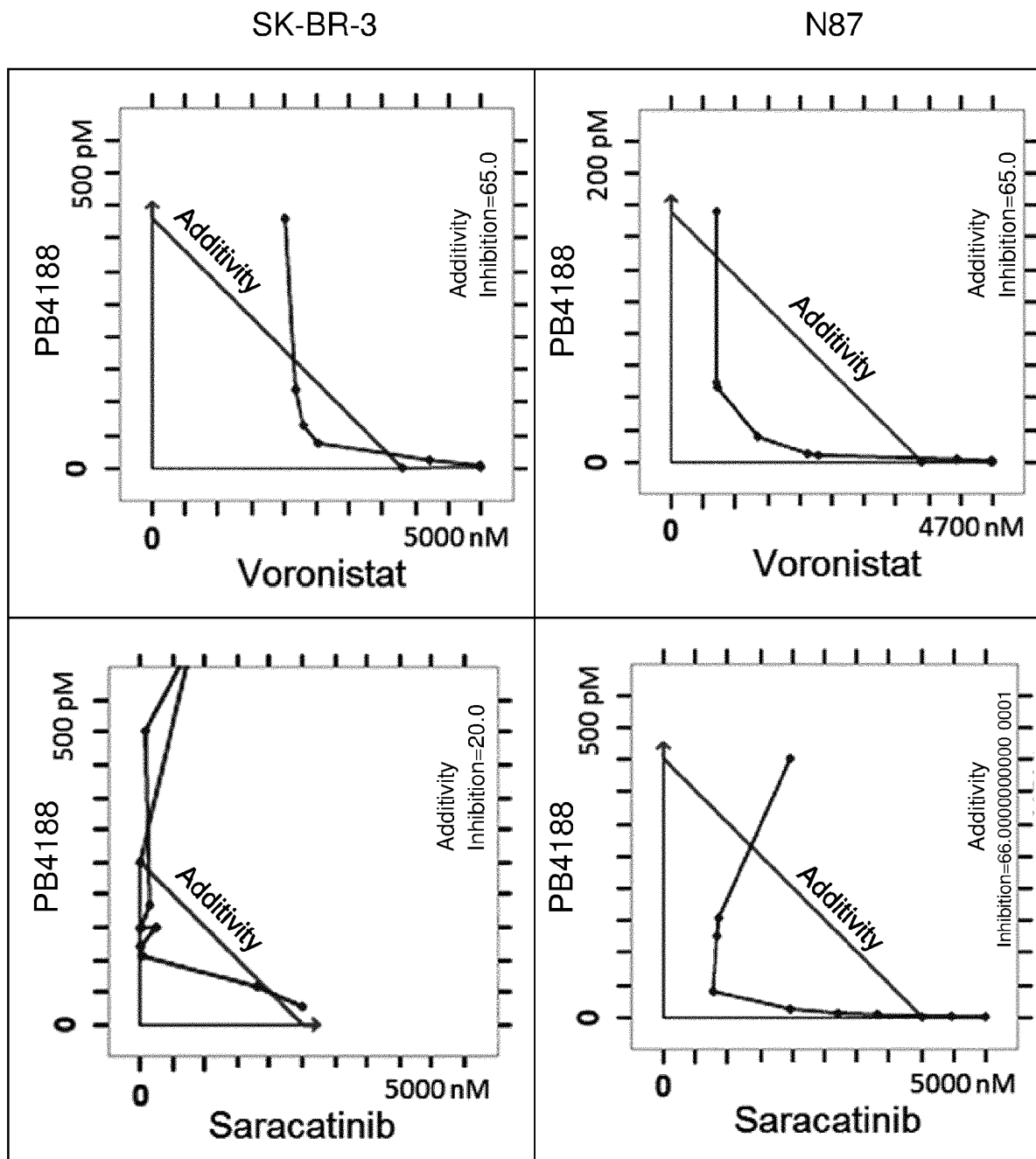


Fig. 40A, Cont'd

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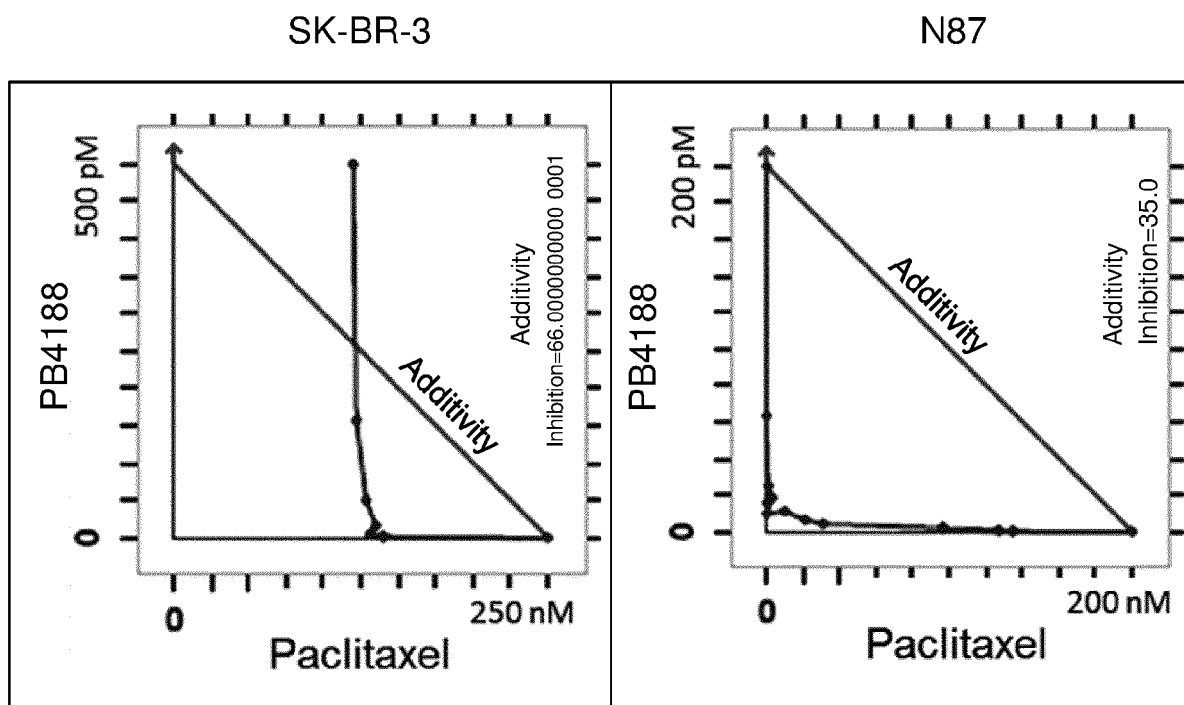


Fig. 40A, Cont'd

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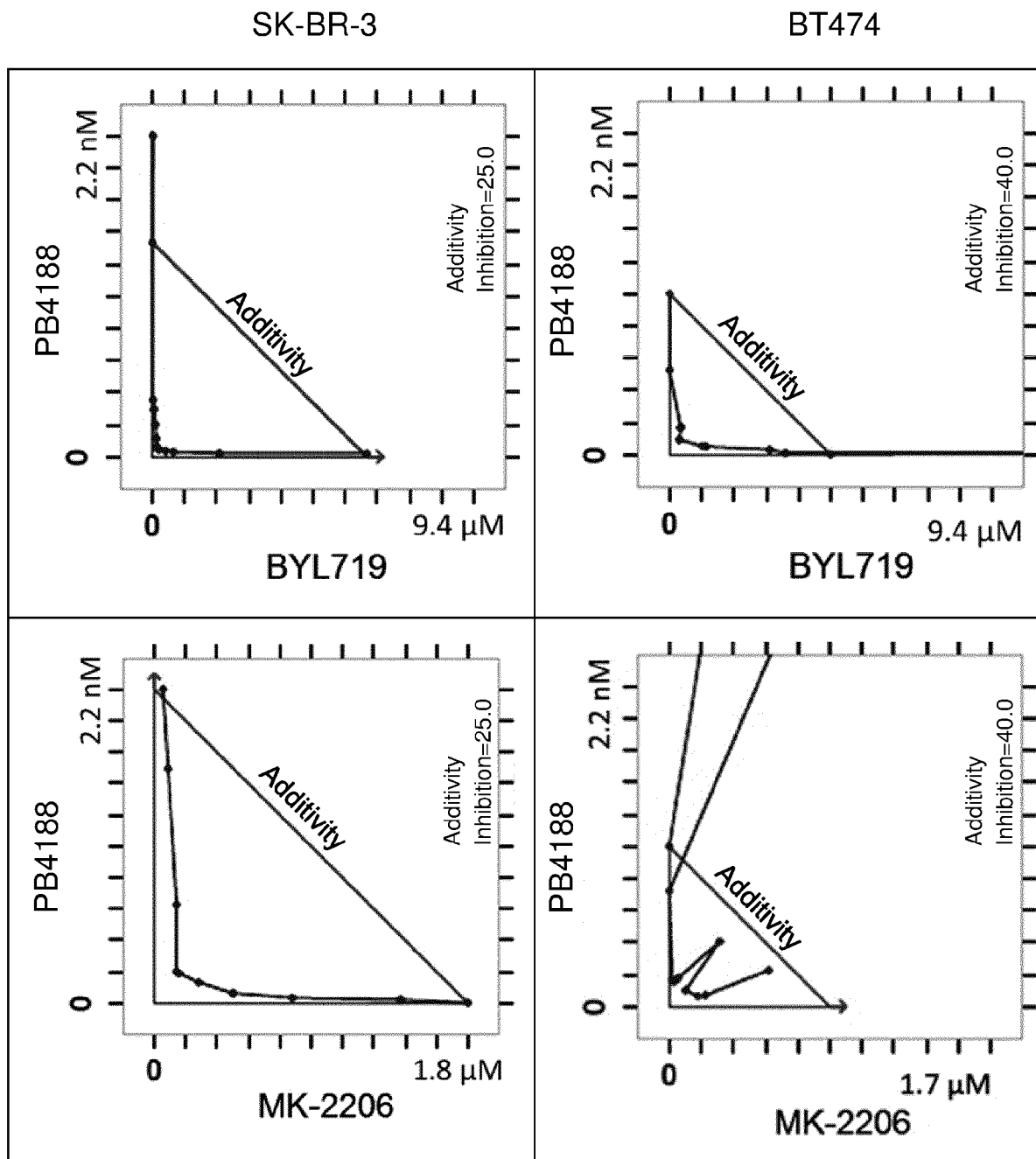


Fig. 40B