Anti-PTK7 3G8 VH

V segment: 3-30.3
D segment: undetermined
J segment: JH4b

```
       Q   V   Q   L   V   E   S   G   G   G   V   V   Q   P   G   R   S   L
1      CAG GTG CAG CTG GTG GAG TCT GGG GGA GGC GTG GTC CAG CCT GGG AGG TCC CTG

                                                        CDR1
                                                    ~~~~~~~~~~~~~~~~~~
       R   L   S   C   A   A   S   G   F   I   F   S   N   Y   A   M   H   W
55     CGA CTC TCC TGT GCA GCC TCT GGA TTC ATC TTC AGT AAC TAT GCT ATG CAC TGG

                                                            CDR2
                                                        ~~~~~~~~~~~~~~~~~~
       V   R   Q   A   P   G   K   G   L   E   W   V   A   V   I   S   Y   D
109    GTC CGC CAG GCT CCA GGC AAG GGG CTG GAG TGG GTG GCA GTT ATA TCA TAT GAT

                        CDR2
       ~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
       G   N   N   K   Y   Y   A   D   S   V   K   G   R   F   T   I   S   R
163    GGA AAC AAT AAA TAC TAC GCA GAC TCC GTG AAG GGC CGA TTC ACC ATC TCC AGA

       D   N   S   K   N   T   L   Y   L   Q   M   N   S   L   R   A   E   D
217    GAC AAT TCC AAG AAC ACG CTG TAT CTG CAA ATG AAC AGC CTG AGA GCT GAG GAC

                                                CDR3
                                            ~~~~~~~~~~~~~~~~~~~~~~~~~~~
       T   A   V   Y   Y   C   A   R   E   V   W   S   I   D   N   W   G   Q
271    ACG GCT GTG TAT TAC TGT GCG AGA GAG GTC TGG AGT ATT GAC AAC TGG GGC CAG

       G   T   L   V   T   V   S   S
325    GGA ACC CTG GTC ACC GTC TCC TCA
```

Fig. 1A

Anti-PTK7 3G8 VK

V segment: L15
J segment: JK1

```
        D   I   Q   M   T   Q   S   P   S   S   L   S   A   S   V   G   D   R
1       GAC ATC CAG ATG ACC CAG TCT CCA TCC TCA CTG TCT GCA TCT GTA GGA GAC AGA

                                CDR1
                            ~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
        V   T   I   T   C   R   A   S   Q   G   I   S   S   W   L   A   W   Y
55      GTC ACC ATC ACT TGT CGG GCG AGT CAG GGT ATT AGC AGC TGG TTA GCC TGG TAT

                                                            CDR2
                                                        ~~~~~~~~~~~~~~~~~~~~
        Q   Q   K   P   E   K   A   P   K   S   L   I   Y   A   A   S   S   L
109     CAG CAG AAA CCA GAG AAA GCC CCT AAG TCC CTG ATC TAT GCT GCA TCC AGT TTG

        CDR2
        ~~~~~~~~
        Q   S   G   V   P   S   R   F   S   G   S   G   S   G   T   D   F   T
163     CAA AGT GGG GTC CCA TCA AGG TTC AGC GGC AGT GGA TCT GGG ACA GAT TTC ACT

                                                                CDR3
                                                            ~~~~~~~~
        L   T   I   S   S   L   Q   P   E   D   F   A   T   Y   Y   C   Q   Q
217     CTC ACC ATC AGC AGC CTG CAG CCT GAA GAT TTT GCA ACT TAT TAC TGC CAA CAG

                CDR3
        ~~~~~~~~~~~~~~~~~~~~~~~~~~~~
        Y   N   S   Y   P   R   T   F   G   Q   G   T   K   V   E   I   K
271     TAT AAT AGT TAC CCT CGG ACG TTC GGC CAA GGG ACC AAG GTG GAA ATC AAA
```

Fig. 1B

Anti-PTK7 3G8a VK

V segment: L15
J segment: JK3

```
        D   I   Q   M   T   Q   S   P   S   S   L   S   A   S   V   G   D   R
1       GAC ATC CAG ATG ACC CAG TCT CCA TCC TCA CTG TCT GCA TCT GTA GGA GAC AGA

                                    CDR1
                                ~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
        V   T   I   T   C   R   A   S   Q   G   I   S   S   W   L   A   W   Y
55      GTC ACC ATC ACT TGT CGG GCG AGT CAG GGT ATT AGC AGC TGG TTA GCC TGG TAT

                                                            CDR2
                                                        ~~~~~~~~~~~~~~~~~~~~
        Q   Q   K   P   E   K   A   P   K   S   L   I   Y   A   A   S   S   L
109     CAG CAG AAA CCA GAG AAA GCC CCT AAG TCC CTG ATC TAT GCT GCA TCC AGT TTG

        CDR2
        ~~~~~~~~
        Q   S   G   V   P   S   R   F   S   G   S   G   S   G   T   D   F   T
163     CAA AGT GGG GTC CCA TCA AGG TTC AGC GGC AGT GGA TCT GGG ACA GAT TTC ACT

                                                                    CDR3
                                                                ~~~~~~~~
        L   T   I   S   S   L   Q   P   E   D   F   A   T   Y   Y   C   Q   Q
217     CTC ACC ATC AGC AGC CTG CAG CCT GAA GAT TTT GCA ACT TAT TAC TGC CAA CAG

                CDR3
        ~~~~~~~~~~~~~~~~~~~~~~~~~~~~
        Y   N   S   Y   P   F   T   F   G   P   G   T   K   V   D   I   K
271     TAT AAT AGT TAC CCA TTC ACT TTC GGC CCT GGG ACC AAA GTG GAT ATC AAA
```

Fig. 1C

Anti-PTK7 4D5 VH

V segment: 3-30.3
D segment: undetermined
J segment: JH4b

```
        Q   V   Q   L   V   E   S   G   G   G   V   V   Q   P   G   R   S   L
1       CAG GTG CAG CTG GTG GAG TCT GGG GGA GGC GTG GTC CAG CCT GGG AGG TCC CTG

                                                        CDR1
                                                        ~~~~~~~~~~~~~~~~~~~
        R   L   S   C   A   A   S   G   F   T   F   S   S   Y   A   F   H   W
55      AGA CTC TCC TGT GCA GCC TCT GGA TTC ACC TTC AGT AGC TAT GCT TTC CAC TGG

                                                            CDR2
                                                            ~~~~~~~~~~~~~~~~~~~
        V   R   Q   A   P   G   K   G   L   E   W   V   A   V   I   S   Y   D
109     GTC CGC CAG GCT CCA GGC AAG GGG CTG GAG TGG GTG GCA GTT ATA TCA TAT GAT

                        CDR2
        ~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
        G   S   I   K   Y   Y   A   D   S   V   K   G   R   F   T   I   S   R
163     GGA AGC ATT AAA TAC TAC GCA GAC TCC GTG AAG GGC CGA TTC ACC ATC TCC AGA

        D   N   S   K   N   T   L   Y   L   Q   M   N   S   L   R   A   E   D
217     GAC AAT TCC AAG AAC ACG CTG TAT CTG CAA ATG AAC AGC CTG AGA GCT GAG GAC

                                                CDR3
                                                ~~~~~~~~~~~~~~~~~~~~~~~~
        T   A   V   Y   Y   C   A   R   T   Y   Y   F   D   Y   W   G   Q   G
271     ACG GCT GTG TAT TAC TGT GCG AGG ACG TAC TAC TTT GAC TAC TGG GGC CAG GGA

        T   L   V   T   V   S   S
325     ACC CTG GTC ACC GTC TCC TCA
```

Fig. 2A

Anti-PTK7 4D5 VK

V segment: A10
J segment: JK5

```
        E   I   V   L   T   Q   S   P   D   F   Q   S   V   T   P   K   E   K
1       GAA ATT GTG CTG ACT CAG TCT CCA GAC TTT CAG TCT GTG ACT CCA AAG GAG AAA

                                CDR1
                            ~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
        V   T   I   T   C   R   A   S   Q   S   I   G   S   S   L   H   W   Y
55      GTC ACC ATC ACC TGC CGG GCC AGT CAG AGC ATT GGT AGT AGC TTA CAC TGG TAC

                                                        CDR2
                                                    ~~~~~~~~~~~~~~~~~~~~
        Q   Q   K   P   D   Q   S   P   K   L   L   I   K   Y   A   S   Q   S
109     CAG CAG AAA CCA GAT CAG TCT CCA AAG CTC CTC ATC AAG TAT GCT TCC CAG TCC

        CDR2
        ~~~~~~~~
        F   S   G   V   P   S   R   F   S   G   S   G   S   G   T   D   F   T
163     TTC TCA GGG GTC CCC TCG AGG TTC AGT GGC AGT GGA TCT GGG ACA GAT TTC ACC

                                                                    CDR3
                                                                ~~~~~~~~
        L   T   I   N   S   L   E   A   E   D   A   A   A   Y   Y   C   H   Q
217     CTC ACC ATC AAT AGC CTG GAA GCT GAA GAT GCT GCA GCG TAT TAC TGT CAT CAG

                CDR3
        ~~~~~~~~~~~~~~~~~~~~~~~~~~~~
        S   S   S   L   P   I   T   F   G   Q   G   T   R   L   E   I   K
271     AGT AGT AGT TTA CCG ATC ACC TTC GGC CAA GGG ACA CGA CTG GAG ATT AAA
```

Fig. 2B

Anti-PTK7 12C6 VH

V segment: DP-44
D segment: undetermined
J segment: JH4b

```
       E   V   Q   L   V   Q   S   G   G   G   L   V   H   P   G   G   S   L
1      GAG GTT CAG CTG GTG CAG TCT GGG GGA GGC TTG GTA CAT CCT GGG GGG TCC CTG

                                                        CDR1
                                                    ~~~~~~~~~~~~~~~~~~~
       R   L   S   C   A   G   S   G   F   T   F   S   T   Y   L   M   Y   W
55     AGA CTC TCC TGT GCA GGC TCT GGA TTC ACC TTC AGT ACC TAT CTT ATG TAC TGG

                                                                CDR2
                                                            ~~~~~~~~~~~~~~~~~~~
       V   R   Q   A   P   G   K   T   L   E   W   V   S   A   I   G   S   G
109    GTT CGC CAG GCT CCA GGA AAA ACT CTG GAG TGG GTC TCA GCT ATT GGT TCT GGT

                        CDR2
       ~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
       G   D   T   Y   Y   A   D   S   V   K   G   R   F   T   I   S   R   D
163    GGT GAT ACA TAC TAT GCA GAC TCC GTG AAG GGC CGA TTC ACC ATC TCC AGA GAC

       N   A   K   N   S   L   Y   L   Q   M   N   S   L   R   A   E   D   M
217    AAT GCC AAG AAC TCC TTG TAT CTT CAA ATG AAC AGC CTG AGA GCC GAG GAC ATG

                                                CDR3
                                            ~~~~~~~~~~~~~~~~
       A   V   Y   Y   C   A   R   G   L   G   Y   W   G   Q   G   T   L   V
271    GCT GTG TAT TAC TGT GCA AGA GGA CTG GGC TAC TGG GGC CAG GGA ACC CTG GTC

       T   V   S   S
325    ACC GTC TCC TCA
```

Fig. 3A

Anti-PTK7 12C6 VK
V segment: A27
J segment: JK2

```
       E   I   V   L   T   Q   S   P   G   T   L   S   L   S   P   G   E   R
1      GAA ATT GTG TTG ACG CAG TCT CCA GGC ACC CTG TCT TTG TCT CCA GGG GAA AGA

                                CDR1
                            ~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
       A   T   L   S   C   R   A   S   Q   S   V   S   S   S   Y   L   A   W
55     GCC ACC CTC TCC TGC AGG GCC AGT CAG AGT GTT AGC AGC AGC TAC TTA GCC TGG

                                                                CDR2
                                                            ~~~~~~~~~~~~~~~~
       Y   Q   Q   K   P   G   Q   A   P   R   L   L   I   Y   G   A   S   S
109    TAC CAG CAG AAA CCT GGC CAG GCT CCC AGG CTC CTC ATC TAT GGT GCA TCC AGC

       CDR2
       ~~~~~~~~~~~~
       R   A   T   G   I   P   D   R   F   S   G   S   G   S   G   T   D   F
163    AGG GCC ACT GGC ATC CCA GAC AGG TTC AGT GGC AGT GGG TCT GGG ACA GAC TTC

                                                                        CDR3
                                                                        ~~~
       T   L   T   I   S   R   L   E   P   E   D   F   A   V   Y   Y   C   Q
217    ACT CTC ACC ATC AGC AGA CTG GAG CCT GAA GAT TTT GCA GTG TAT TAC TGT CAG

                    CDR3
       ~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
       Q   Y   G   S   S   P   M   Y   T   F   G   Q   G   T   K   L   E   I
271    CAG TAT GGT AGC TCA CCC ATG TAC ACT TTT GGC CAG GGG ACC AAG CTG GAG ATC

       K
325    AAA
```

Fig. 3B

Anti-PTK7 12C6a VK

V segment: L15
J segment: JK2

```
        D   I   Q   M   T   Q   S   P   S   S   L   S   A   S   V   G   D   R
1       GAC ATC CAG ATG ACC CAG TCT CCA TCC TCA CTG TCT GCA TCT GTA GGA GAC AGA

                                    CDR1
                                ~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
        V   T   I   T   C   R   A   S   Q   G   I   S   S   W   L   A   W   Y
55      GTC ACC ATC ACT TGT CGG GCG AGT CAG GGT ATT AGC AGC TGG TTA GCC TGG TAT

                                                            CDR2
                                                        ~~~~~~~~~~~~~~~~~~~~
        Q   Q   K   P   E   K   A   P   K   S   L   I   Y   A   A   S   S   L
109     CAG CAG AAA CCA GAG AAA GCC CCT AAG TCC CTG ATC TAT GCT GCA TCC AGT TTG

        CDR2
        ~~~~~~~~
        Q   S   G   V   P   S   R   F   S   G   S   G   S   G   T   D   F   T
163     CAA AGT GGG GTC CCA TCA AGG TTC AGC GGC AGT GGA TCT GGG ACA GAT TTC ACT

                                                                    CDR3
                                                                ~~~~~~~~
        L   T   I   S   S   L   Q   P   E   D   F   A   T   Y   Y   C   Q   Q
217     CTC ACC ATC AGC AGC CTG CAG CCT GAA GAT TTT GCA ACT TAT TAC TGC CAA CAG

                CDR3
        ~~~~~~~~~~~~~~~~~~~~~~~~~~~~
        Y   N   S   Y   P   Y   T   F   G   Q   G   T   K   L   E   I   K
271     TAT AAT AGT TAC CCG TAC ACT TTT GGC CAG GGG ACC AAG CTG GAG ATC AAA
```

Fig. 3C

Anti-PTK7 7C8 VH

```
        V segment:    3-33
        D segment:    3-10
        J segment:    JH6b

         Q   V   Q   L   V   E   S   G   G   G   V   V   Q   P   G   R   S   L
1       CAG GTG CAA CTG GTG GAG TCT GGG GGA GGC GTG GTC CAG CCT GGG AGG TCC CTG

                                                            CDR1
                                                        ~~~~~~~~~~~~~~~~~~~
         R   L   S   C   A   A   S   G   F   T   F   S   S   Y   G   M   H   W
55      AGA CTC TCC TGT GCA GCG TCT GGA TTC ACC TTC AGT AGC TAT GGC ATG CAC TGG

                                                                CDR2
                                                            ~~~~~~~~~~~~~~~~~~~
         V   R   Q   A   P   G   K   G   L   E   W   V   A   V   I   W   D   D
109     GTC CGC CAG GCT CCA GGC AAG GGG CTG GAG TGG GTG GCA GTT ATA TGG GAT GAT

                    CDR2
        ~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
         G   S   N   K   Y   Y   V   D   S   V   K   G   R   F   T   I   S   R
163     GGA AGT AAT AAA TAC TAT GTA GAC TCC GTG AAG GGC CGA TTC ACC ATC TCC AGA

         D   N   S   K   N   T   L   Y   L   Q   M   N   S   L   R   A   E   D
217     GAC AAT TCC AAG AAC ACG CTG TAT CTG CAA ATG AAC AGC CTG AGA GCC GAG GAC

                                                    CDR3
                                        ~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
         T   A   V   Y   Y   C   A   R   D   D   Y   Y   G   S   G   S   F   N
271     ACG GCT GTG TAT TAC TGT GCG AGA GAT GAT TAC TAT GGT TCG GGG AGT TTT AAC

               CDR3
        ~~~~~~~~~~~~~~~~~~~~~~~~~~~
         S   Y   Y   G   T   D   V   W   G   Q   G   T   T   V   T   V   S   S
325     TCC TAC TAC GGT ACG GAC GTC TGG GGC CAA GGG ACC ACG GTC ACC GTC TCC TCA
```

Fig. 4A

Anti-PTK7 7C8 VK

V segment: L6
J segment: JK3

```
        E   I   V   L   T   Q   S   P   A   T   L   S   L   S   P   G   E   R
1       GAA ATT GTG TTG ACA CAG TCT CCA GCC ACC CTG TCT TTG TCT CCA GGG GAA AGA

                                CDR1
                            ~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
        A   T   L   S   C   R   A   S   Q   S   V   S   I   Y   L   A   W   Y
55      GCC ACC CTC TCC TGC AGG GCC AGT CAG AGT GTT AGC ATC TAC TTA GCC TGG TAC

                                                        CDR2
                                                    ~~~~~~~~~~~~~~~~~~~~
        Q   Q   K   P   G   Q   A   P   R   L   L   I   Y   D   A   S   N   R
109     CAA CAG AAA CCT GGC CAG GCT CCC AGG CTC CTC ATC TAT GAT GCA TCC AAC AGG

        CDR2
        ~~~~~~~~
        A   T   G   I   P   A   R   F   S   G   S   G   S   G   T   D   F   T
163     GCC ACT GGC ATC CCA GCC AGG TTC AGT GGC AGT GGG TCT GGG ACA GAC TTC ACT

                                                                    CDR3
                                                                ~~~~~~~~
        L   T   I   S   S   L   E   P   E   D   F   A   V   Y   Y   C   Q   Q
217     CTC ACC ATC AGC AGC CTA GAG CCT GAA GAT TTT GCA GTT TAT TAC TGT CAG CAG

                CDR3
        ~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
        R   S   N   W   P   P   F   T   F   G   P   G   T   K   V   D   I   K
271     CGT AGC AAC TGG CCT CCA TTC ACT TTC GGC CCT GGG ACC AAA GTG GAT ATC AAA
```

Fig. 4B

Anti-PTK7 3G8 and 3G8a VH region

```
                                                                                      __CDR1___
3-30.3 germline Q V Q L V E S G G G V V Q P G R S L R L S C A A S G F T F S S Y A M H W
3G8 VH          - - - - - - - - - - - - - - - - - - - - - - - - - - - I - - N - - - - -
3G8a VH         - - - - - - - - - - - - - - - - - - - - - - - - - - - I - - N - - - - -

                                          __________CDR2_________________
3-30.3 germline V R Q A P G K G L E W V A V I S Y D G S N K Y Y A D S V K G R F T I S R
3G8 VH          - - - - - - - - - - - - - - - - - - - N - - - - - - - - - - - - - - - -
3G8a VH         - - - - - - - - - - - - - - - - - - - N - - - - - - - - - - - - - - - -

                                                                    __CDR3_____
3-30.3 germline D N S K N T L Y L Q M N S L R A E D T A V Y Y C A R
JH4b germline                                                                 D Y W G Q
3G8 VH          - - - - - - - - - - - - - - - - - - - - - - - - - - E V W S I - N - - -
3G8a VH         - - - - - - - - - - - - - - - - - - - - - - - - - - E V W S I - N - - -


JH4b germline   G T L V T V S S
3G8 VH          - - - - - - - -    (JH4b)
3G8a VH         - - - - - - - -    (JH4b)
```

Fig. 5

Anti-PTK7 4D5 VH region

```
                                                                            CDR1
3-30.3 germline Q V Q L V E S G G G V V Q P G R S L R L S C A A S G F T F S S Y A M H W V R
4D5 VH          - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - F - - - -

                                              CDR2
3-30.3 germline Q A P G K G L E W V A V I S Y D G S N K Y Y A D S V K G R F T I S R D N S K
4D5 VH          - - - - - - - - - - - - - - - - - - I - - - - - - - - - - - - - - - - - - -

                                                              CDR3
3-30.3 germline N T L Y L Q M N S L R A E D T A V Y Y C A R
JH4b germline                                                   Y F D Y W G Q G T L V T V S
4D5 VH          - - - - - - - - - - - - - - - - - - - - - - T Y - - - - - - - - - - - - - -

JH4b germline   S
4D5 VH          -     (JH4b)
```

Fig. 6

Anti-PTK7 12C6 and 12C6a VH region

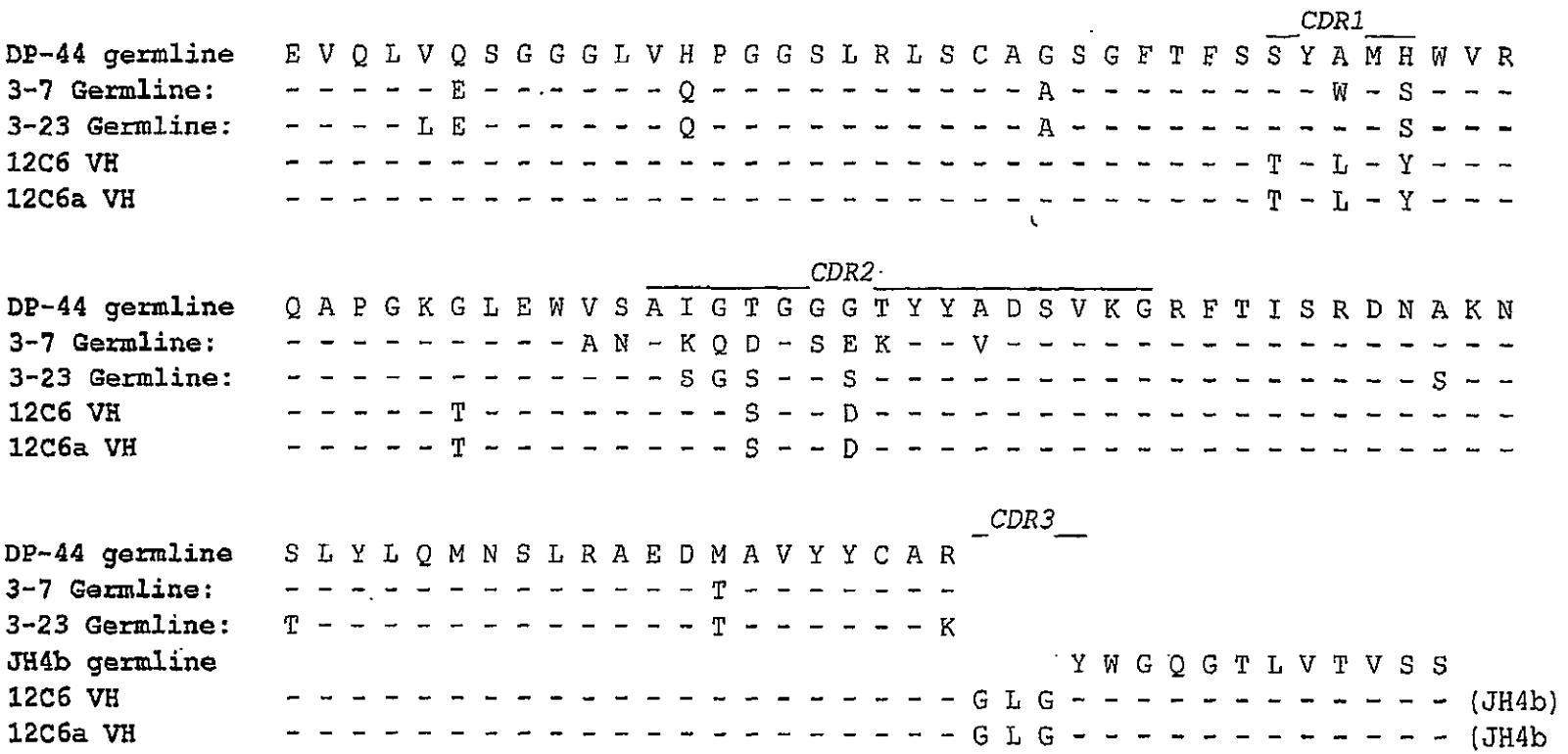


Fig. 7

Anti-PTK7 7C8 VH region

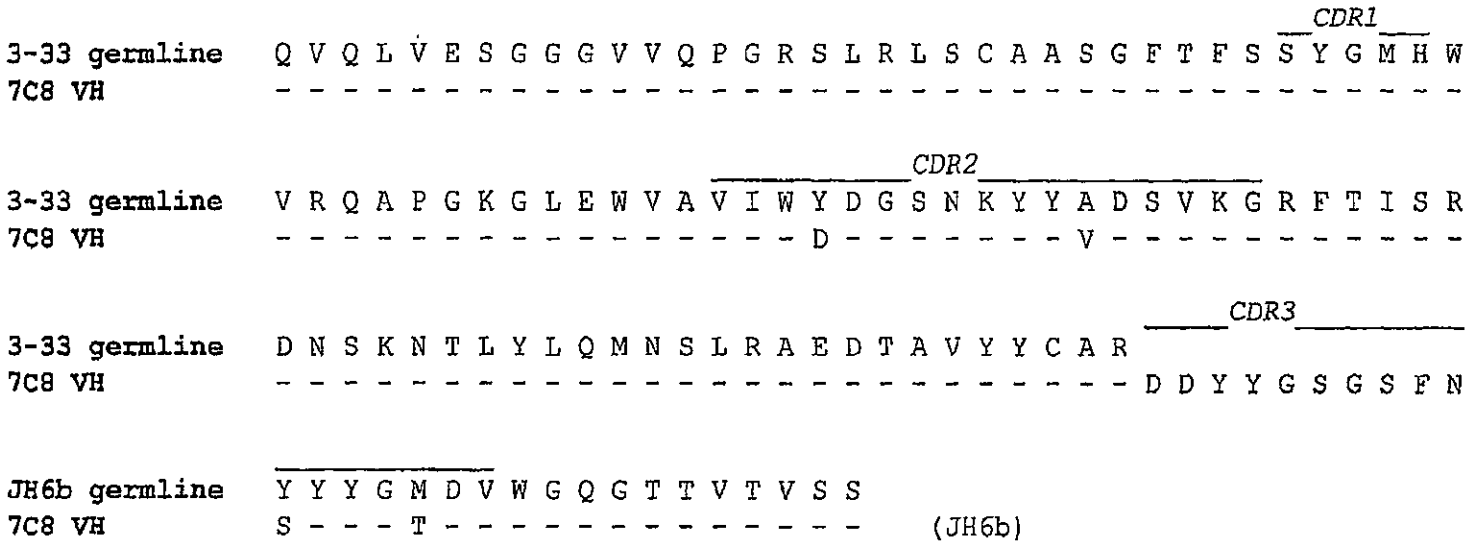


Fig. 8

Anti-PTK7 3G8 and 3G8a VK regions

```
                                                                                                                CDR1
L15 germline     D I Q M T Q S P S S L S A S V G D R V T I T C R A S Q G I S S
3G8 VK           - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
3G8a VK          - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -

                                                                                                  CDR2
                 W L A W Y Q Q K P E K A P K S L I Y A A S S L Q S G V P S R F
L15 germline     W L A W Y Q Q K P E K A P K S L I Y A A S S L Q S G V P S R F
3G8 VK           - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
3G8a VK          - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -

                                                                                                                CDR3
L15 germline     S G S G S G T D F T L T I S S L Q P E D F A T Y Y C Q Q Y N S
3G8 VK           - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
3G8a VK          - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -

                 Y P
L15 germline     Y P
JK1 germline           T F G Q G T K V E I K
3G8 VK           - - R - - - - - - - - - -          (JK1)
3G8a VK          - - F - - - P - - - - D - -        (JK3)
```

Fig. 9

Anti-PTK7 4D5 VK region

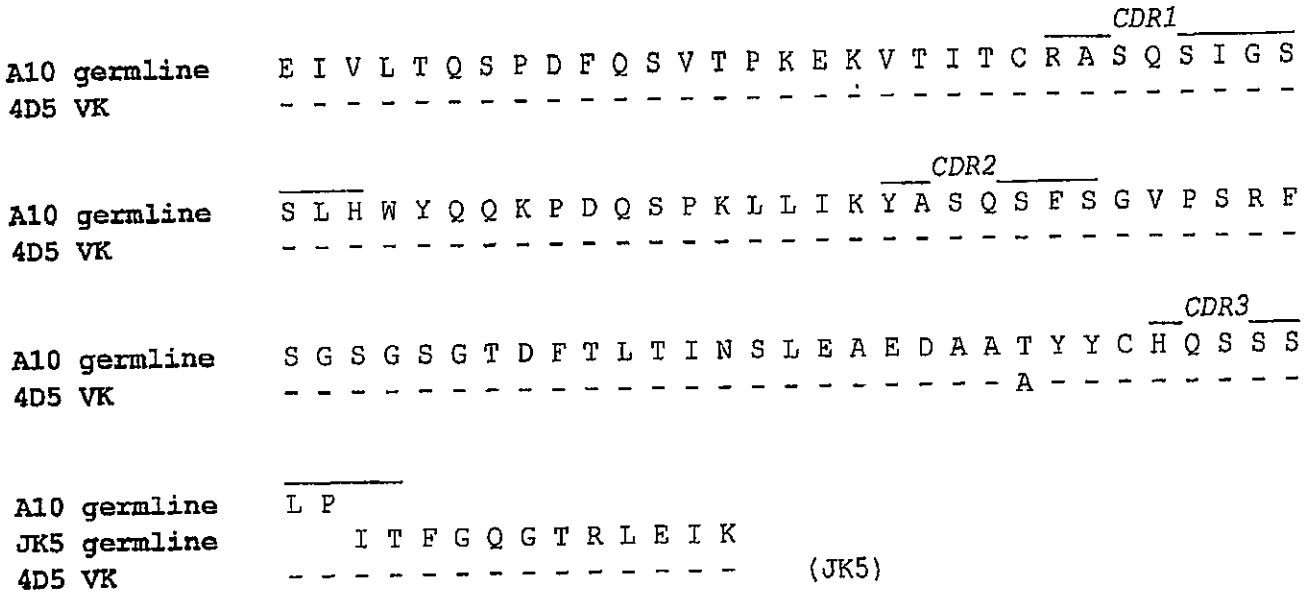


Fig. 10

Anti-PTK7 12C6 VK region

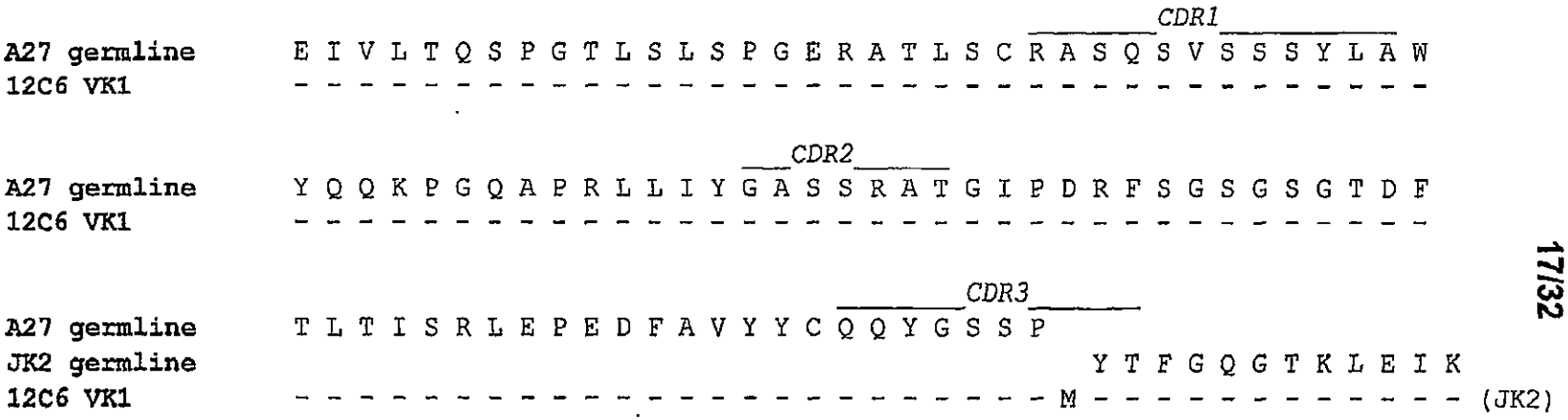


Fig. 11

Anti-PTK7 12C6a VK region

```
                                                                  ____CDR1_____
L15 germline     D I Q M T Q S P S S L S A S V G D R V T I T C R A S Q G I S S
12C6 VK2         - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -

                 _____                                  _CDR2_____
L15 germline     W L A W Y Q Q K P E K A P K S L I Y A A S S L Q S G V P S R F
12C6 VK2         - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -

                                                                  _CDR3____
L15 germline     S G S G S G T D F T L T I S S L Q P E D F A T Y Y C Q Q Y N S
12C6 VK2         - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -

                 ______
L15 germline     Y P
JK2 germline         Y T F G Q G T K L E I K
12C6 VK2         - - - - - - - - - - - - - -    (JK2)
```

Fig. 12

Anti-PTK7 7C8 VK region

```
                                                                  _____CDR1_____
L6 germline      E I V L T Q S P A T L S L S P G E R A T L S C R A S Q S V S S Y L A W Y
7C8 VK1          - - - - - - - - - - - - - - - - - - - - - - - - - - - - I - - - - - -

                                          ____CDR2____
L6 germline      Q Q K P G Q A P R L L I Y D A S N R A T G I P A R F S G S G S G T D F T
7C8 VK1          - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -

                                                  _____CDR3_____
L6 germline      L T I S S L E P E D F A V Y Y C Q Q R S N W P P
JK3 germline                                                    F T F G P G T K V D I K
7C8 VK1          - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - (JK3)
```


Fig. 13

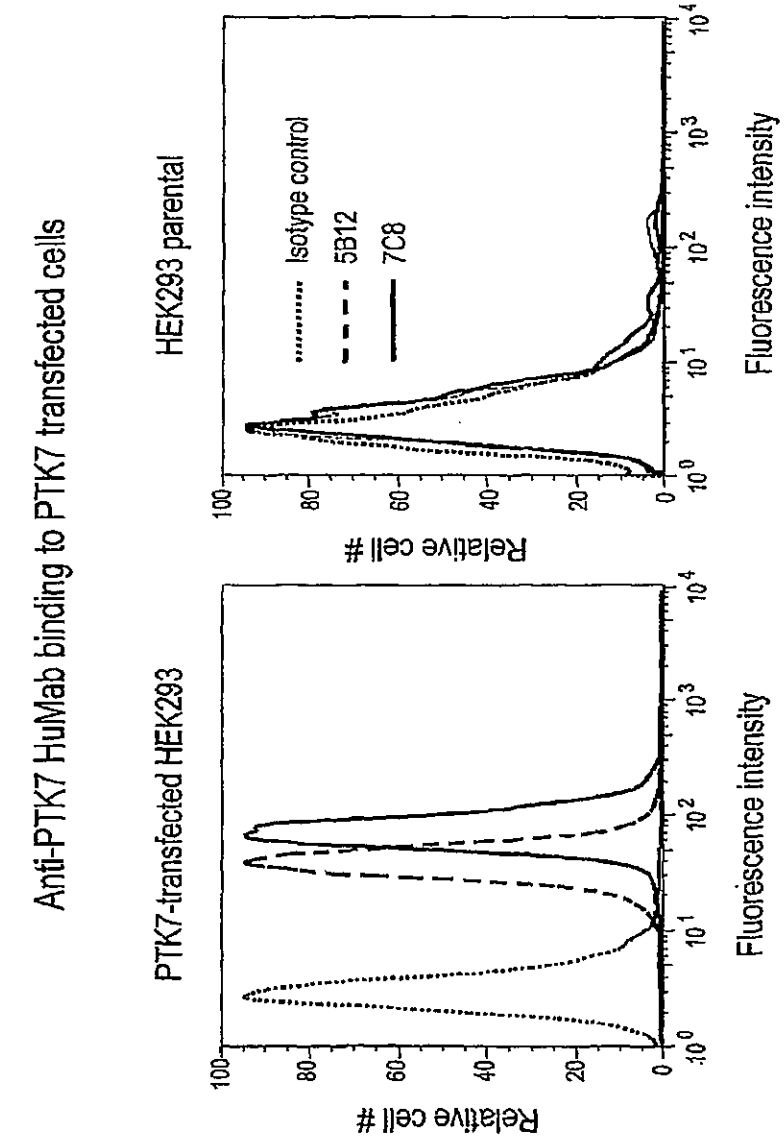

Anti-PTK7 HuMab binding to PTK7 transfected cells
PTK7-transfected HEK293
HEK293 parental
Isotype control
5B12
7C8
Relative cell #
Fluorescence intensity
0
20
40
60
80
100
10^0
10^1
10^2
10^3
10^4

Fig. 14

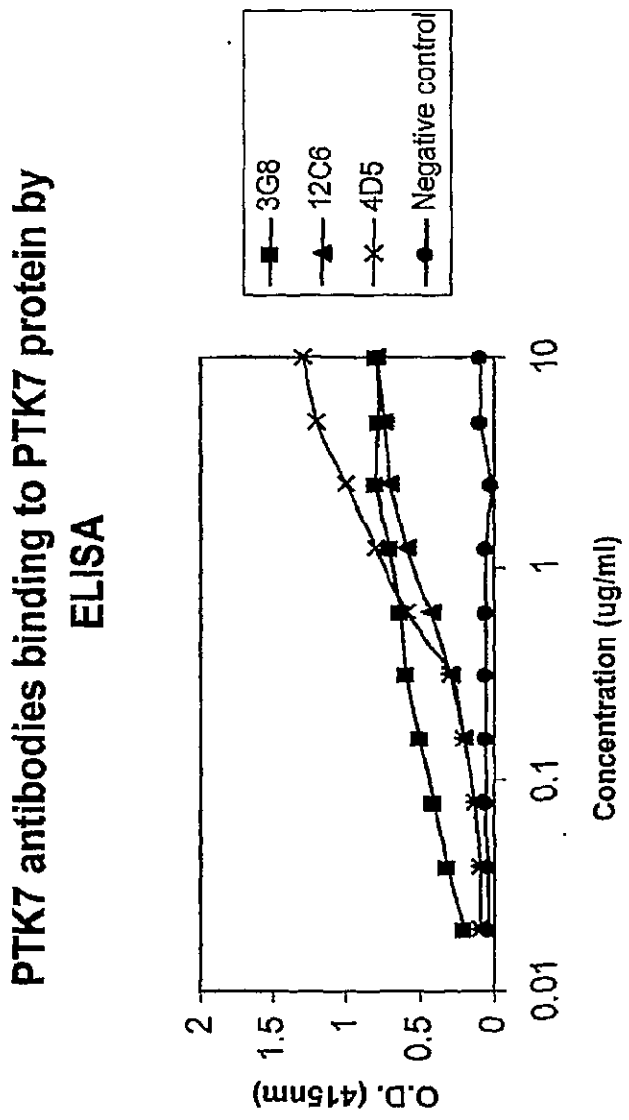

PTK7 antibodies binding to PTK7 protein by ELISA
O.D. (415nm)
2
1.5
1
0.5
0
0.01
0.1
1
10
Concentration (ug/ml)
3G8
12C6
4D5
Negative control

Fig. 15

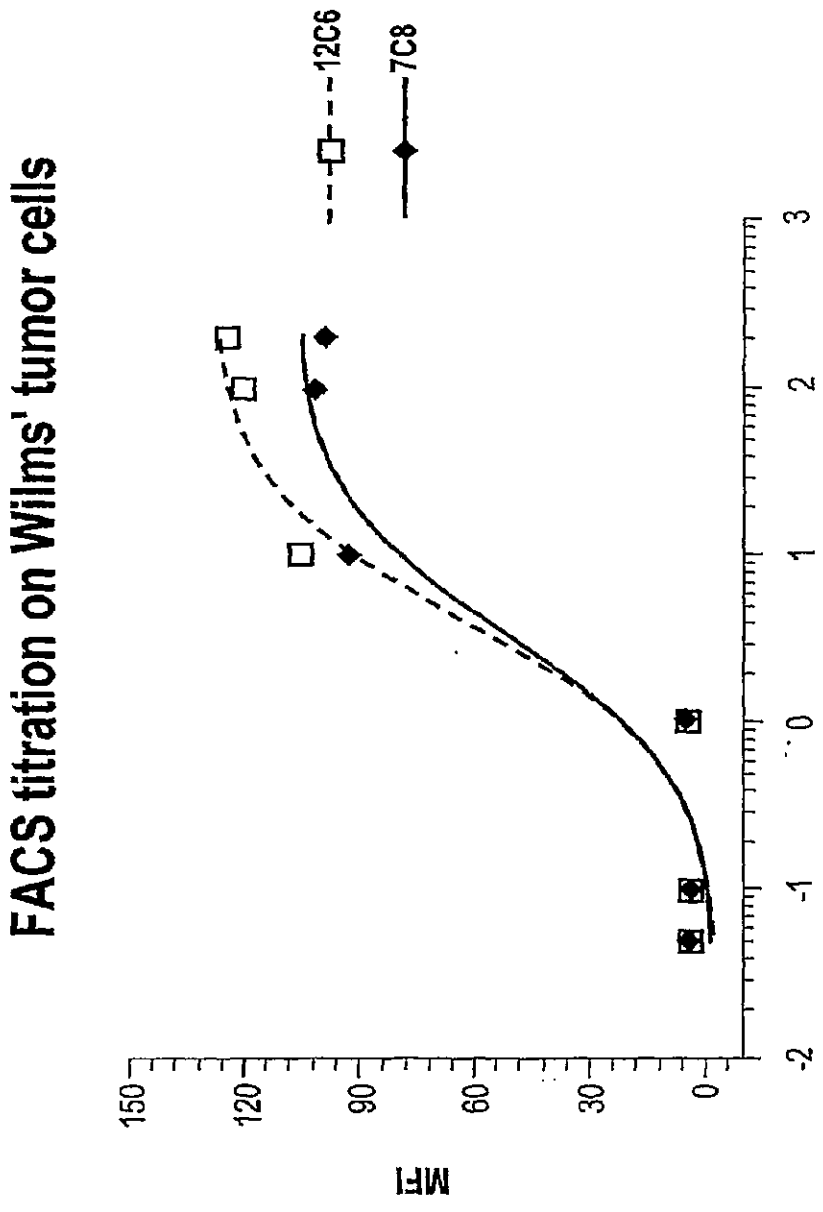

FACS titration on Wilms' tumor cells
12C6
7C8
MFI
150
120
90
60
30
0
-2
-1
0
1
2
3
IgG [nM]

Fig. 16

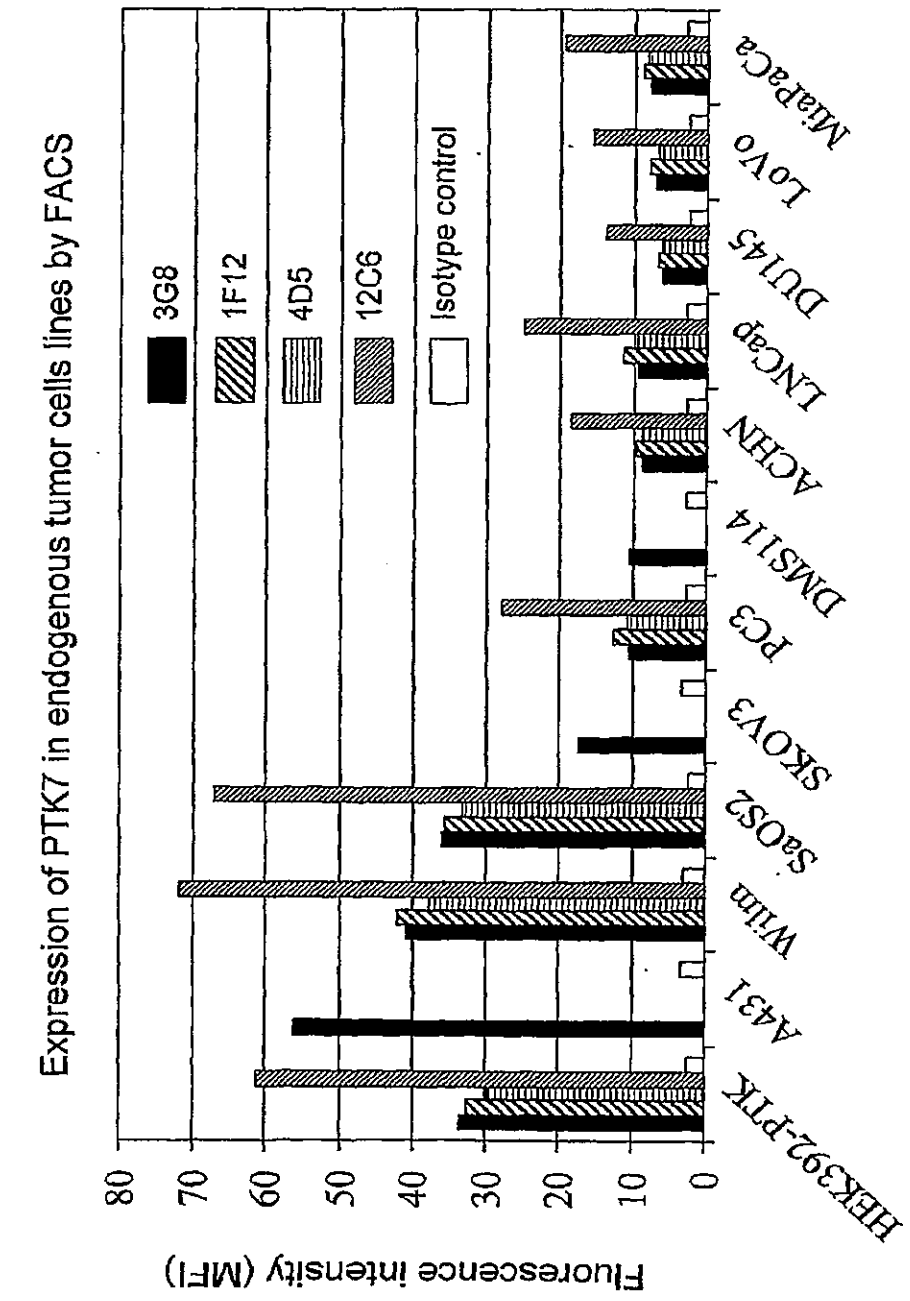

Expression of PTK7 in endogenous tumor cells lines by FACS
Fluorescence intensity (MFI)
0
10
20
30
40
50
60
70
80
3G8
1F12
4D5
12C6
Isotype control
HEK293-PTK
A431
Wilm
SaOS2
SKOV3
PC3
DMS114
ACHN
LNCap
DU145
LoVo
MiaPaCa

Fig. 17

FACS analysis of activated human lymphocytes for PTK7

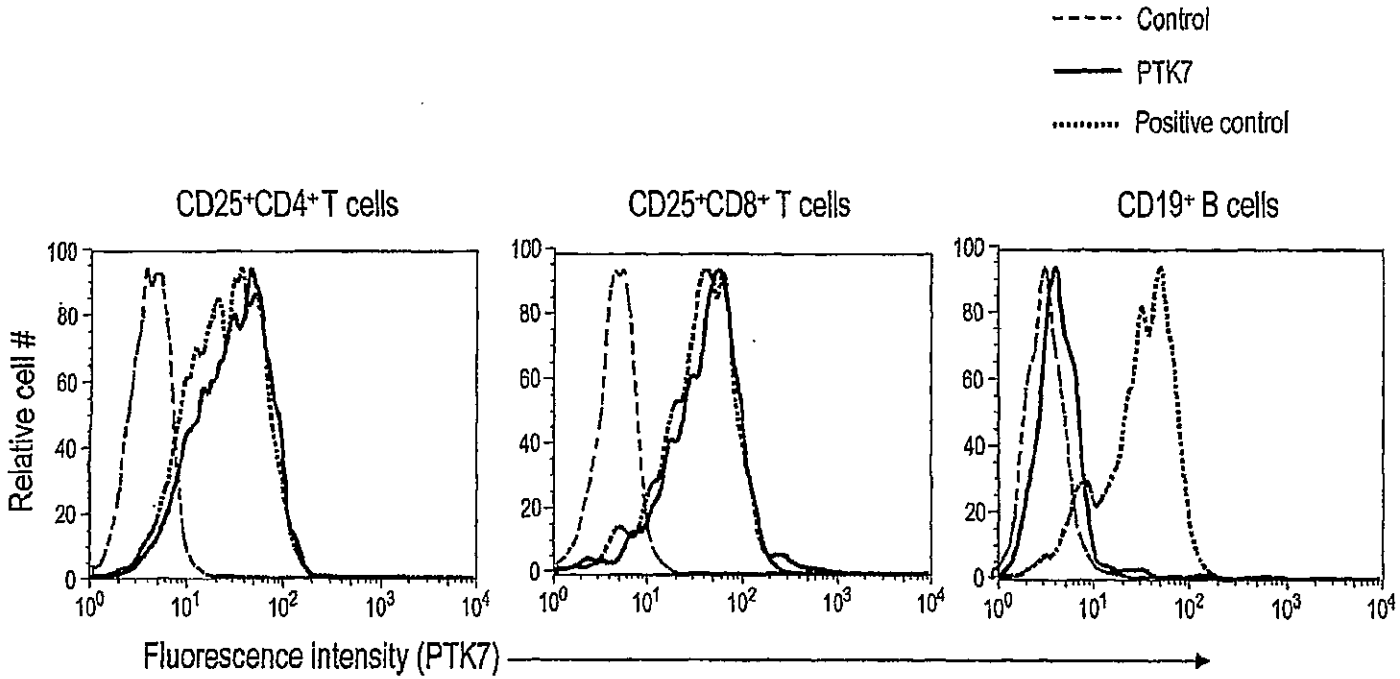


Fig. 18

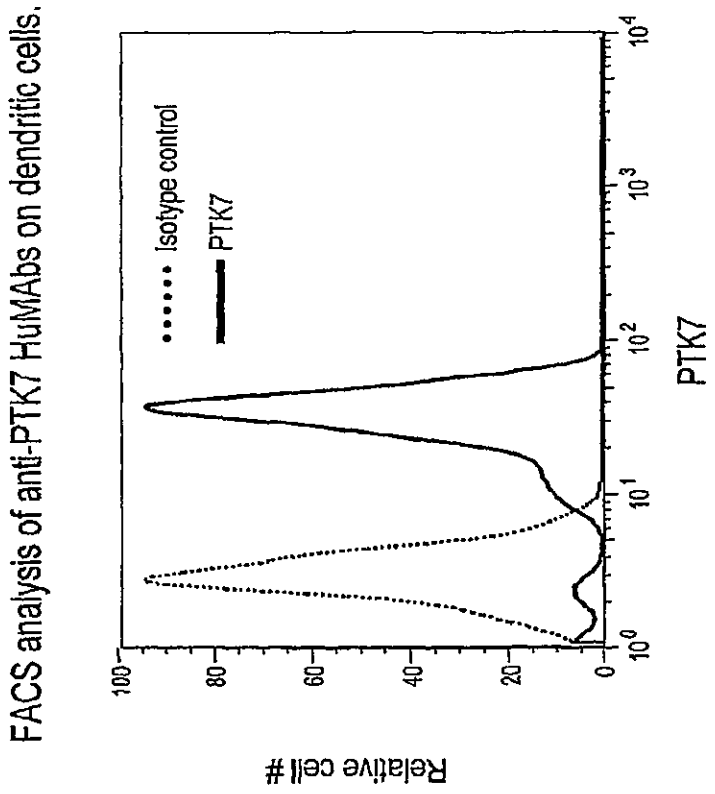

FACS analysis of anti-PTK7 HuMAbs on dendritic cells.
Isotype control
PTK7
Relative cell #
PTK7
100
80
60
40
20
0
10^0
10^1
10^2
10^3
10^4

Fig. 19

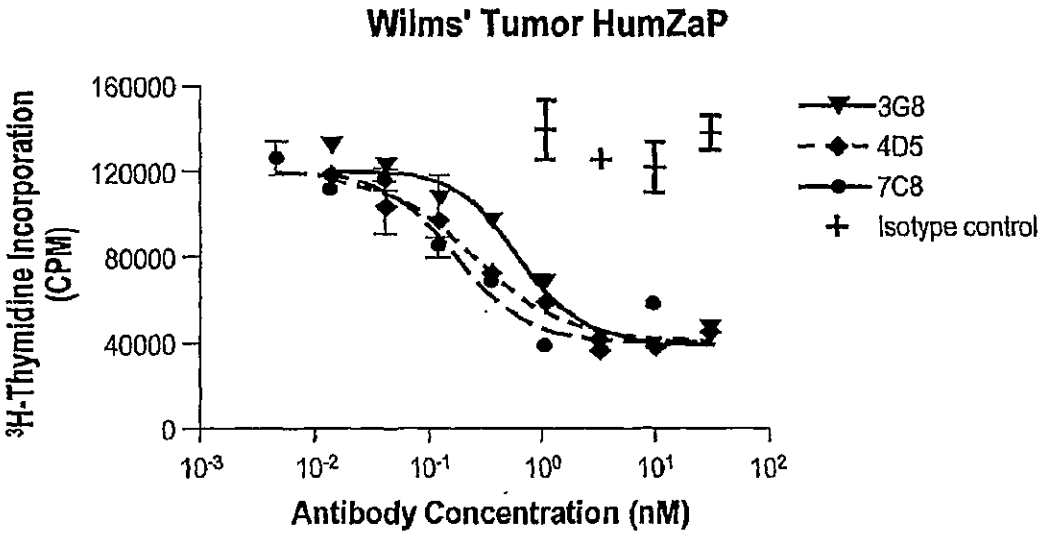


Fig. 20A

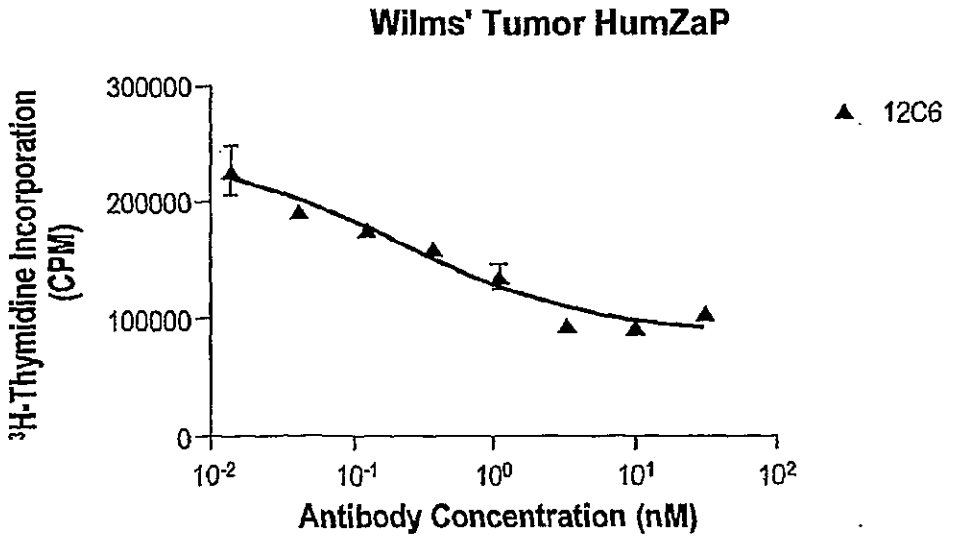


Fig. 20B

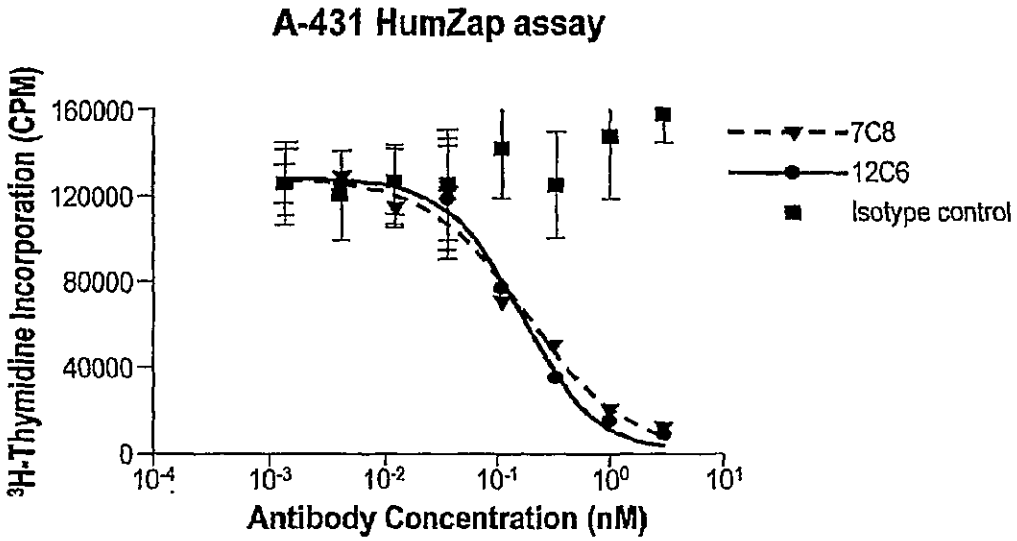


Fig. 20C

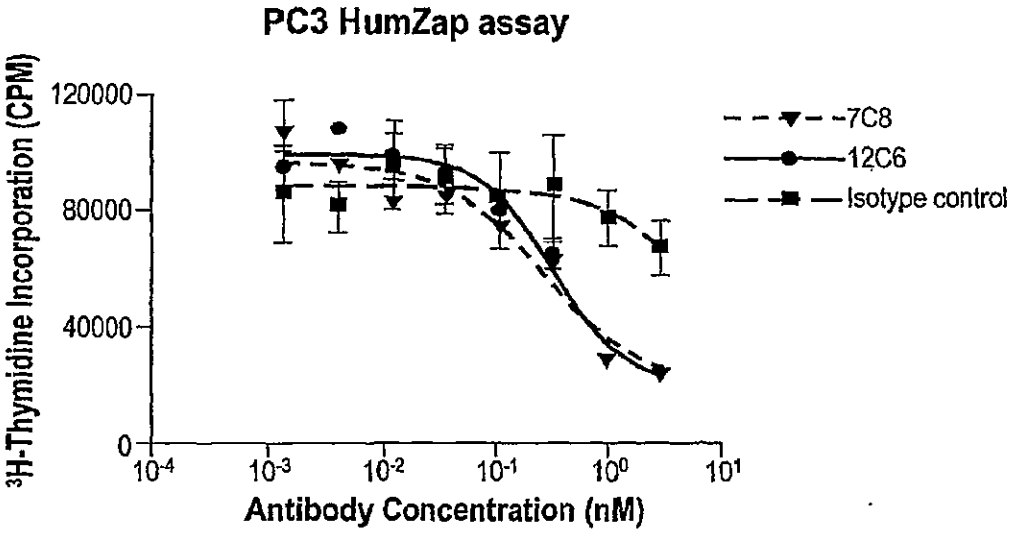


Fig. 20D

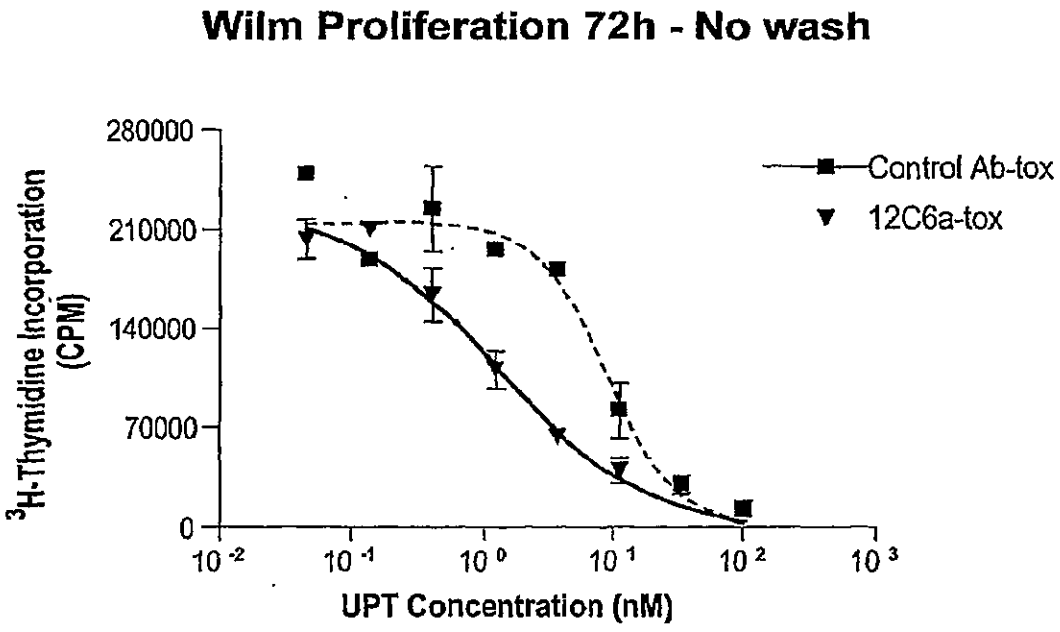

Wilm Proliferation 72h - No wash
280000
210000
140000
70000
0
^{3}H-Thymidine Incorporation (CPM)
10^{-2}
10^{-1}
10^{0}
10^{1}
10^{2}
10^{3}
UPT Concentration (nM)
Control Ab-tox
12C6a-tox

Fig. 21

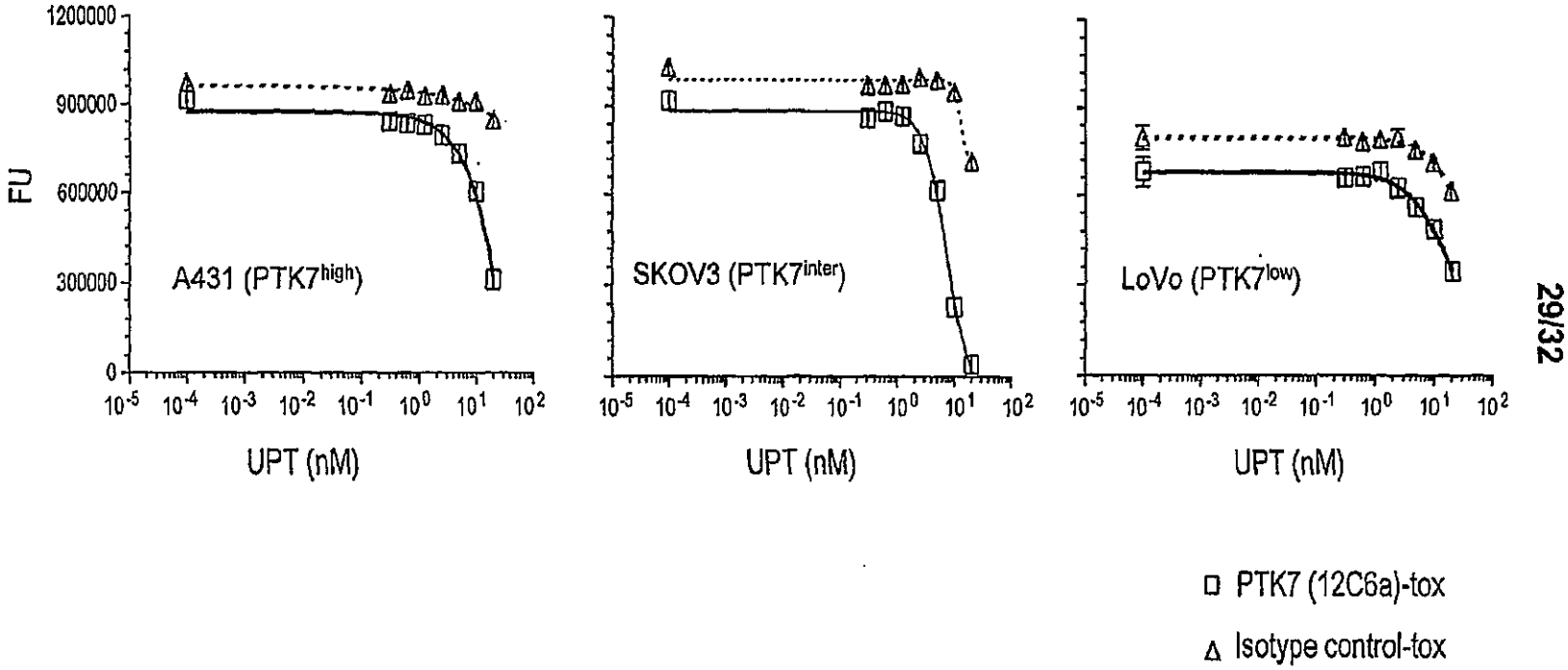

1200000
900000
600000
300000
0
FU
A431 (PTK7high)
SKOV3 (PTK7inter)
LoVo (PTK7low)
10-5 10-4 10-3 10-2 10-1 100 101 102
UPT (nM)
PTK7 (12C6a)-tox
Isotype control-tox

Fig. 22

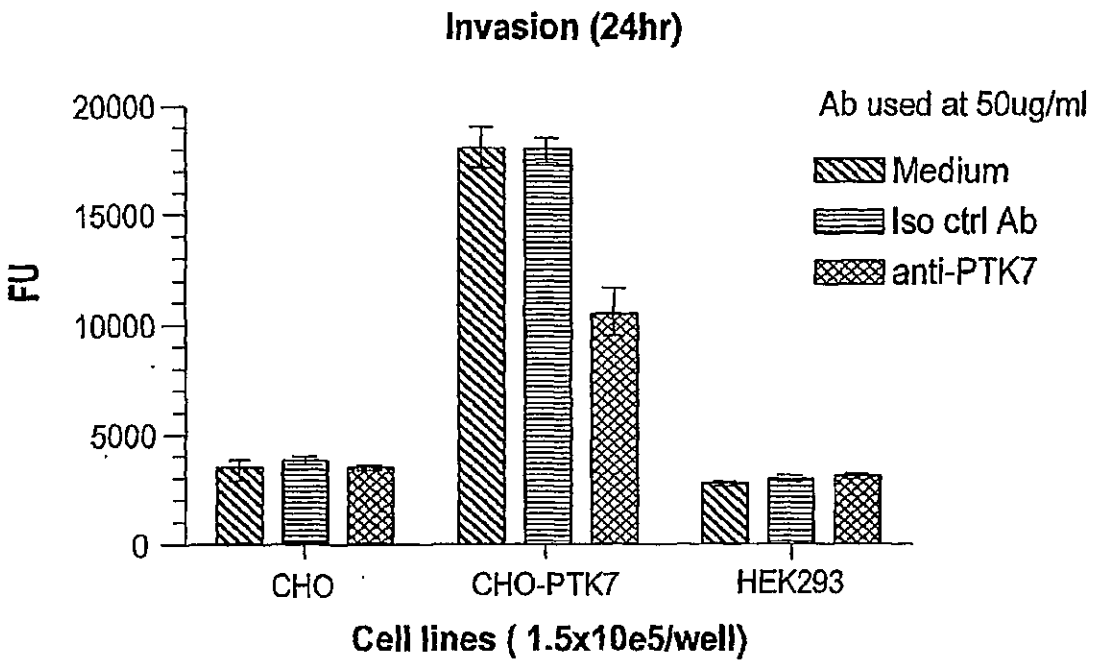

Invasion (24hr)
Ab used at 50ug/ml
Medium
Iso ctrl Ab
anti-PTK7
FU
20000
15000
10000
5000
0
CHO
CHO-PTK7
HEK293
Cell lines (1.5x10e5/well)

Fig. 23

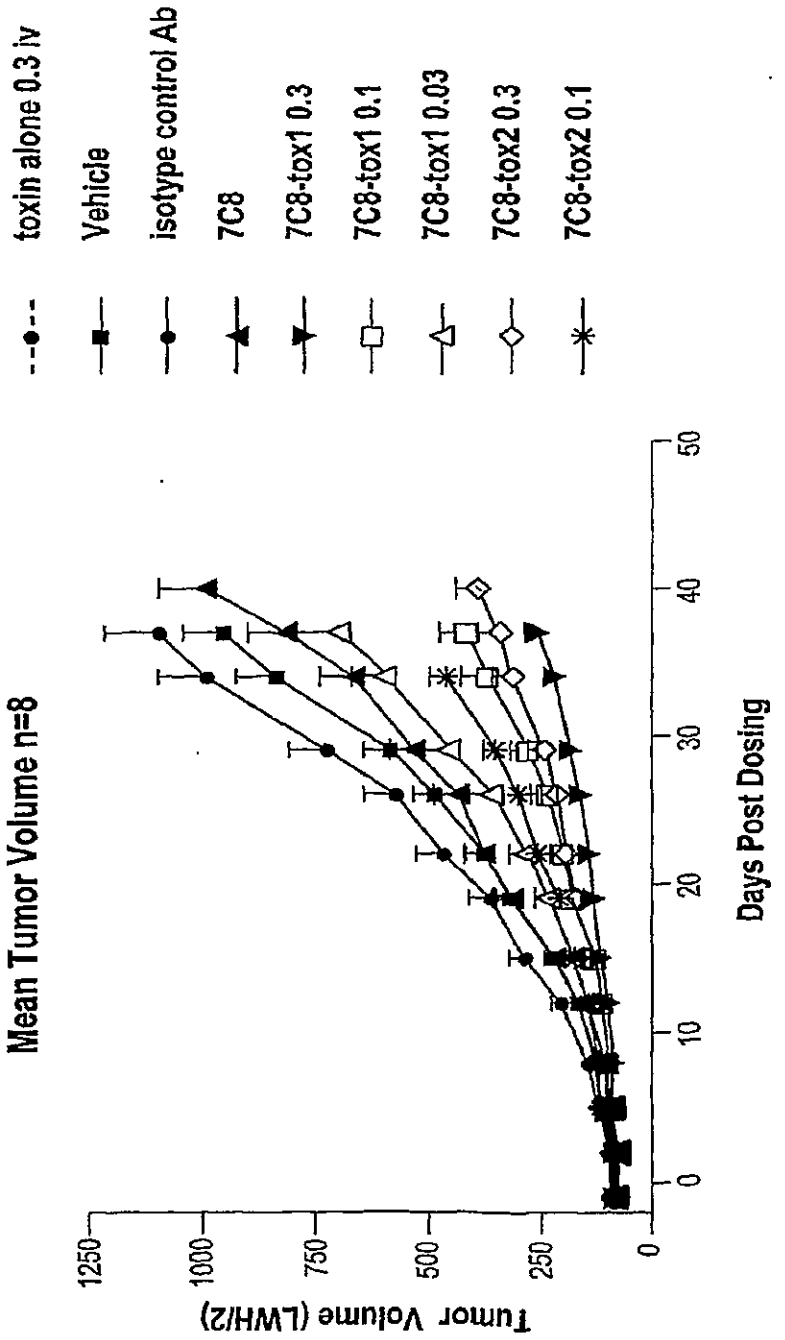

Mean Tumor Volume n=8
toxin alone 0.45 iv
toxin alone 0.3 iv
Vehicle
isotype control Ab
7C8
7C8-tox1 0.3
7C8-tox1 0.1
7C8-tox1 0.03
7C8-tox2 0.3
7C8-tox2 0.1
Tumor Volume (LWH/2)
1250
1000
750
500
250
0
0
10
20
30
40
50
Days Post Dosing

Fig. 24

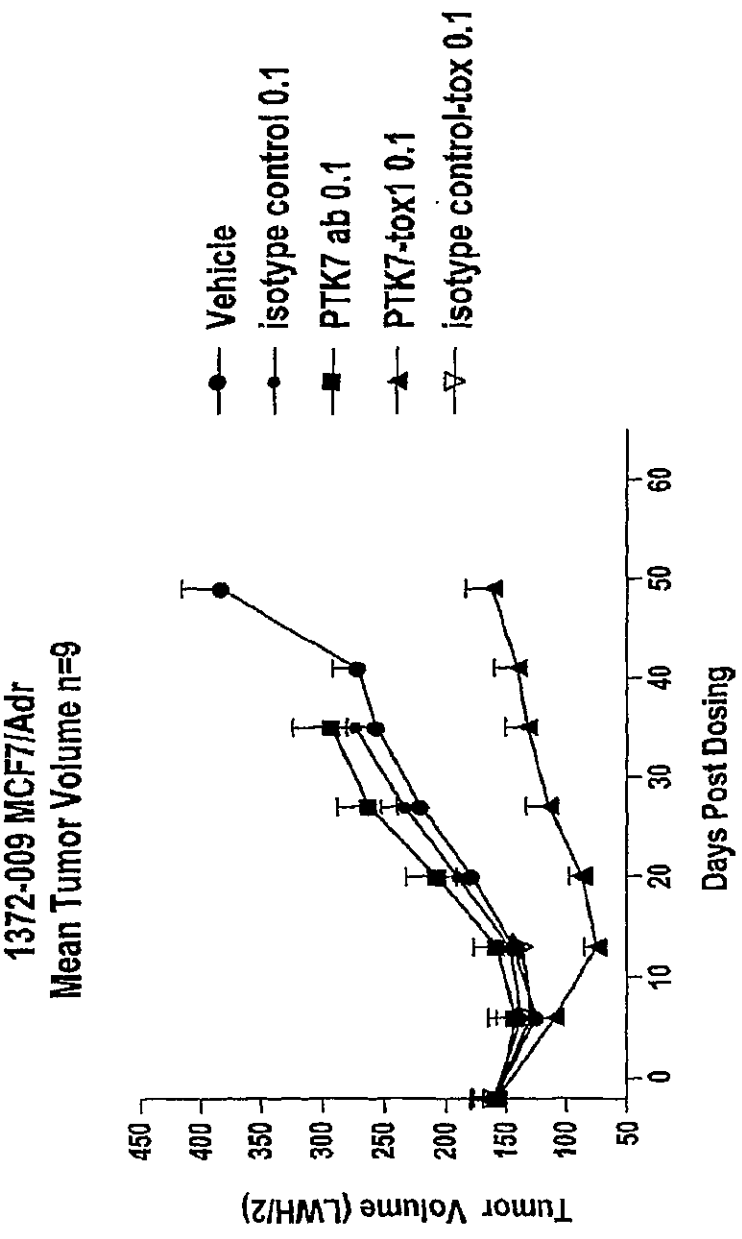

1372-009 MCF7/Adr
Mean Tumor Volume n=9
Vehicle
isotype control 0.1
PTK7 ab 0.1
PTK7-tox1 0.1
isotype control-tox 0.1
Tumor Volume (LWH/2)
Days Post Dosing
450
400
350
300
250
200
150
100
50
0
10
20
30
40
50
60

Fig. 25