Figure 1

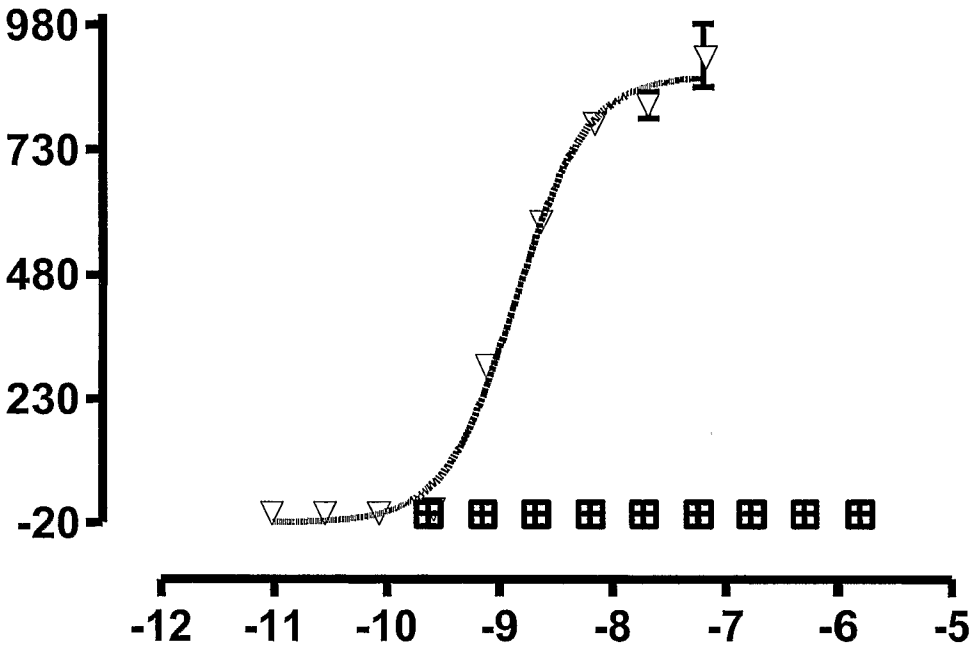

Figure 2

```
        10         20         30         40         50
ATGGGATGGAGTTGCATTATACTGTTTTTGGTTGCCACCGCTACTGGTGC
 M  G  W  S  C  I  I  L  F  L  V  A  T  A  T  G  A
        60         70         80         90        100
GCACTCTGCGGACCCCTGTGACTCTAATCCCAGGGGAGTGAGCGCATATC
  H  S  A  D  P  C  D  S  N  P  R  G  V  S  A  Y
       110        120        130        140        150
TCAGCAGGCCATCCCCTTTCGATCTTTTCATCAGCAAGAGCCCAACAATA
L  S  R  P  S  P  F  D  L  F  I  S  K  S  P  T  I
       160        170        180        190        200
ACTTGCCTGGTAGTCGATCTCGCACCATCCAAGGAAACCGTCAATCTTAC
 T  C  L  V  V  D  L  A  P  S  K  E  T  V  N  L  T
       210        220        230        240        250
ATGGAGCAGAGCATCAGGTAAGCCTGTTCCTCACATACCTGCAACTGAAA
  W  S  R  A  S  G  K  P  V  P  H  I  P  A  T  E
       260        270        280        290        300
AAAAACAGCAGAGGAACGGTACTCTCACGGTGACTAGTATCCTTCCGGTG
K  K  Q  Q  R  N  G  T  L  T  V  T  S  I  L  P  V
       310        320        330        340        350
GTCACCCAGGATTGGATTGAGGGAGAGACTTACCAGTGCCGGGTCACACA
 V  T  Q  D  W  I  E  G  E  T  Y  Q  C  R  V  T  H
       360        370        380        390        400
CCCTCACCTGCCGCGAGCACTGGTGCGCTCCATGACAAAGACGTCCGGGC
  P  H  L  P  R  A  L  V  R  S  M  T  K  T  S  G
       410        420        430        440        450
CACGCGCGGCTCCCGAGGTGTACGTTTTTGCCACCCCCGAGAAACTCGAG
P  R  A  A  P  E  V  Y  V  F  A  T  P  E  K  L  E
       460        470        480        490        500
AGCCGCGACAAGCGGACACTTGCCTGCCTGATCGAGAACTTTATGCCTGA
 S  R  D  K  R  T  L  A  C  L  I  E  N  F  M  P  E
       510        520        530        540        550
AGATATCTCTGTTCAGTGGCTGCACAGTGATGTGCAACTTCCCGATGCAC
  D  I  S  V  Q  W  L  H  S  D  V  Q  L  P  D  A
       560        570        580        590        600
GCCACAGTGTTACCCAGCCCAGGAAGACCAAAGGTAGTGGCTTCTTCGTG
R  H  S  V  T  Q  P  R  K  T  K  G  S  G  F  F  V
       610        620        630        640        650
TTTTCCCGCCTCGAGGTGACCAAGGCAGAATGGGAGCAAAAGGATGAATT
 F  S  R  L  E  V  T  K  A  E  W  E  Q  K  D  E  F
       660        670        680        690        700
TATCTGCAGAGCGGTGCATGAAGCCGCGTCCCCTTCCTGGATCGTACAGC
  I  C  R  A  V  H  E  A  A  S  P  S  W  I  V  Q
       710        720        730        740        750
AGGCCGTCAGTGTGAATCCTGGGAAGGACTATAAGGATGATGACGACAAG
Q  A  V  S  V  N  P  G  K  D  Y  K  D  D  D  D  K
       760        770        780
GCCGCACACCACCATCACCATCATCATCACCATCACTAG
 A  A  H  H  H  H  H  H  H  H  H  H  *
```

Figure 3

```
        10         20         30         40         50
ATGGGATGGAGCTGTATCATCCTCTTCTTGGTAGCAACAGCTACAGGCGC
 M  G  W  S  C  I  I  L  F  L  V  A  T  A  T  G  A

        60         70         80         90        100
GCACTCCGAGGTGCAGCTGGTGGAGTCTGGGGGAGGCTTGGTACAGCCTG
  H  S  E  V  Q  L  V  E  S  G  G  G  L  V  Q  P

       110        120        130        140        150
GGAGGTCCCTGAGACTCTCCTGTGCAGCCTCTGGAGTCACCTTTAGCAGC
G  R  S  L  R  L  S  C  A  A  S  G  V  T  F  S  S

       160        170        180        190        200
CATGCCATGACCTGGGTCCGCCAGGCTCCAGGGAAGGGGCTGGAATGGGT
 H  A  M  T  W  V  R  Q  A  P  G  K  G  L  E  W  V

       210        220        230        240        250
CTCAGGTATCAGTGGTAGTGGTGGTGACACATACCACGCAGACTCCGTGA
  S  G  I  S  G  S  G  G  D  T  Y  H  A  D  S  V

       260        270        280        290        300
AGGGCCGGTTCACCATCTCCAGGGACAATTCCAAGAACACGGTGTATCTG
K  G  R  F  T  I  S  R  D  N  S  K  N  T  V  Y  L

       310        320        330        340        350
CAAATGAACAGCCTGCGAGCCGAGGACACGGCCATATATTACTGTGCGAT
 Q  M  N  S  L  R  A  E  D  T  A  I  Y  Y  C  A  I

       360        370        380        390        400
TTTAGGAGTACTAAATGGTTTTGATATCTGGGGCCAAGGGACAATGGTCA
  L  G  V  L  N  G  F  D  I  W  G  Q  G  T  M  V

       410        420        430        440        450
CCGTCTCCTCAGCCTCCATACAGAGCCCCTTCGTCTTCCCCTTGATCCCC
T  V  S  S  A  S  I  Q  S  P  F  V  F  P  L  I  P

       460        470        480        490        500
TGCTGCAAACACATTGCCTCCAATGCCACCTCCGTGACCCTGGGCTGCCT
 C  C  K  H  I  A  S  N  A  T  S  V  T  L  G  C  L

       510        520        530        540        550
GGCCACGGGCTACTTCCCGGAGCCGGTGATGGTGACCTGGGACGCAGGCT
  A  T  G  Y  F  P  E  P  V  M  V  T  W  D  A  G

       560        570        580        590        600
CCCTCAACAGAAGCACTATGACCTTACCAGCCACCACCTTCACGCCCTCC
S  L  N  R  S  T  M  T  L  P  A  T  T  F  T  P  S

       610        620        630        640        650
GGTCACTATGCCACCATCAGCTTGCTGACCGTCTCGGGTGCGTGGGCCAA
 G  H  Y  A  T  I  S  L  L  T  V  S  G  A  W  A  K

       660        670        680        690        700
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GGAGACGTTCACCTGCCATGTGGTGCACACTCCATCGTCCGCAGACAAAG
  E  T  F  T  C  H  V  V  H  T  P  S  S  A  D  K

       710        720        730        740        750
AGGTCAACAAAACCTTTGGCGTCTGCTCCAGGAACTTCACCCCACCTACC
E  V  N  K  T  F  G  V  C  S  R  N  F  T  P  P  T

       760        770        780        790        800
GTGAAGATCTTACAGTCATCCTGCGATGACGACGGGCACTTTCCCCCGAC
 V  K  I  L  Q  S  S  C  D  D  D  G  H  F  P  P  T

       810        820        830        840        850
CATCCAGCTCCTGTGCCTCATCTCCGGGTACACCCCAGGGGCCATCAATG
  I  Q  L  L  C  L  I  S  G  Y  T  P  G  A  I  N

       860        870        880        890        900
TCACCTGGCTGGAGAACGGGCAGGTCATGAAAGTGAACTCGCCCACCCCT
V  T  W  L  E  N  G  Q  V  M  K  V  N  S  P  T  P

       910        920        930        940        950
CCTGCCACGCAGGAGGGTGAGCTGGCCTCCACACAAAGTGAGTTCACCCT
 P  A  T  Q  E  G  E  L  A  S  T  Q  S  E  F  T  L

       960        970        980        990       1000
CGCCCAGAAGCACTGGCTGTCGGACCGCACTTACACCTGCCAGGTCACCT
  A  Q  K  H  W  L  S  D  R  T  Y  T  C  Q  V  T

      1010       1020       1030       1040       1050
ATCAAGGTACCACCTATAACGACAGCACCAAGAAGTGTGCAGATTCCAAC
Y  Q  G  T  T  Y  N  D  S  T  K  K  C  A  D  S  N

      1060       1070       1080       1090       1100
CCGAGAGGGGTGAGTGCCTACCTAAGCCGGCCCAGCCCGTTTGACCTGTT
 P  R  G  V  S  A  Y  L  S  R  P  S  P  F  D  L  F

      1110       1120       1130       1140       1150
CATCAGCAAGTCGCCCACGATCACCTGTCTGGTGGTGGACCTGGCACCCA
  I  S  K  S  P  T  I  T  C  L  V  V  D  L  A  P

      1160       1170       1180       1190       1200
GCAAGGAGACCGTGAACCTGACCTGGTCCCGGGCCAGTGGGAAGCCTGTG
S  K  E  T  V  N  L  T  W  S  R  A  S  G  K  P  V

      1210       1220       1230       1240       1250
CCCCACATCCCCGCAACGGAGAAGAAGCAGCAGCGCAATGGCACGTTAAC
 P  H  I  P  A  T  E  K  K  Q  Q  R  N  G  T  L  T

      1260       1270       1280       1290       1300
CGTTACGTCCATCCTGCCGGTGGTCACCCAAGACTGGATCGAGGGGGAGA
  V  T  S  I  L  P  V  V  T  Q  D  W  I  E  G  E

      1310       1320       1330       1340       1350
CCTACCAGTGCAGGGTGACCCACCCCCACCTCCCCAGGGCCCTCGTGCGG
T  Y  Q  C  R  V  T  H  P  H  L  P  R  A  L  V  R

      1360       1370       1380       1390       1400
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TCCATGACCAAGACCAGCGGCCCGCGTGCTGCCCCGGAAGTCTATGTGTT
 S  M  T  K  T  S  G  P  R  A  A  P  E  V  Y  V  F

      1410       1420       1430       1440       1450
TGCAACGCCAGAGAAGCTAGAGAGCCGGGACAAGCGCACCCTCGCCTGCC
  A  T  P  E  K  L  E  S  R  D  K  R  T  L  A  C

      1460       1470       1480       1490       1500
TGATCCAGAACTTCATGCCTGAGGACATATCGGTGCAGTGGCTGCACAGC
L  I  Q  N  F  M  P  E  D  I  S  V  Q  W  L  H  S

      1510       1520       1530       1540       1550
GACGTGCAGCTCCCGGACGCCCGGCACAGCGTGACGCAGCCCCGCAAGAC
 D  V  Q  L  P  D  A  R  H  S  V  T  Q  P  R  K  T

      1560       1570       1580       1590       1600
CAAGGGCTCCGGCTTCTTCGTCTTCAGCCGCCTGGAGGTGACCAAGGCCG
  K  G  S  G  F  F  V  F  S  R  L  E  V  T  K  A

      1610       1620       1630       1640       1650
AATGGGAGCAGAAAGACGAGTTCATCTGCCGTGCAGTCCATGAGGCAGCG
E  W  E  Q  K  D  E  F  I  C  R  A  V  H  E  A  A

      1660       1670       1680       1690       1700
AGCCCCTCATGGATCGTCCAGCAAGCGGTGTCTGTAAATCCCGGTAAATGA
 S  P  S  W  I  V  Q  Q  A  V  S  V  N  P  G  K  *
```

Figure 4

```
        10         20         30         40         50
ATGGGATGGAGCTGTATCATCCTCTTCTTGGTAGCAACAGCTACAGGCGC
 M  G  W  S  C  I  I  L  F  L  V  A  T  A  T  G  A

        60         70         80         90        100
GCACTCCGAGGTGCAGCTGGTGGAGTCTGGGGGAGGCTTGGTACAGCCTG
  H  S  E  V  Q  L  V  E  S  G  G  G  L  V  Q  P

       110        120        130        140        150
GGAGGTCCCTGAGACTCTCCTGTGCAGCCTCTGGAGTCACCTTTAGCAGC
G  R  S  L  R  L  S  C  A  A  S  G  V  T  F  S  S

       160        170        180        190        200
CATGCCATGACCTGGGTCCGCCAGGCTCCAGGGAAGGGGCTGGAATGGGT
 H  A  M  T  W  V  R  Q  A  P  G  K  G  L  E  W  V

       210        220        230        240        250
CTGAGGTATCAGTGGTAGTGGTGGTGACACATACCACGCAGACTCCGTGA
  S  G  I  S  G  S  G  G  D  T  Y  H  A  D  S  V

       260        270        280        290        300
AGGGCCGGTTCACCATCTCCAGGGACAATTCCAAGAACACGGTGTATCTG
K  G  R  F  T  I  S  R  D  N  S  K  N  T  V  Y  L

       310        320        330        340        350
CAAATGAACAGCCTGCGAGCCGAGGACACGGCCATATATTACTGTGCGAT
 Q  M  N  S  L  R  A  E  D  T  A  I  Y  Y  C  A  I

       360        370        380        390        400
TTTAGGAGTACTAAATGGTTTTGATATCTGGGGCCAAGGGACAATGGTCA
  L  G  V  L  N  G  F  D  I  W  G  Q  G  T  M  V

       410        420        430        440        450
CCGTCTCCTCAGCCTCCATACAGAGCCCCTTCGTCTTCCCCTTGATCCCC
T  V  S  S  A  S  I  Q  S  P  F  V  F  P  L  I  P

       460        470        480        490        500
TGCTGCAAACACATTGCCTCCAATGCCACCTCCGTGACCCTGGGCTGCCT
 C  C  K  H  I  A  S  N  A  T  S  V  T  L  G  C  L

       510        520        530        540        550
GGCCACGGGCTACTTCCCGGAGCCGGTGATGGTGACCTGGGACGCAGGCT
  A  T  G  Y  F  P  E  P  V  M  V  T  W  D  A  G

       560        570        580        590        600
CCCTCAACAGAAGCACTATGACCTTACCAGCCACCACCTTCACGCCCTCC
S  L  N  R  S  T  M  T  L  P  A  T  T  F  T  P  S

       610        620        630        640        650
GGTCACTATGCCACCATCAGCTTGCTGACCGTCTCGGGTGCGTGGGCCAA
 G  H  Y  A  T  I  S  L  L  T  V  S  G  A  W  A  K
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```
       660        670        680        690        700
GGAGATGTTCACCTGCCATGTGGTGCACACTCCATCGTCCGCAGACAAAG
  E  M  F  T  C  H  V  V  H  T  P  S  S  A  D  K

       710        720        730        740        750
AGGTCAACAAAACCTTTGGCGTCTGCTCCAGGAACTTCACCCCACCTACC
E  V  N  K  T  F  G  V  C  S  R  N  F  T  P  P  T

       760        770        780        790        800
GTGAAGATCTTACAGTCATCCTGCGATGACGACGGGCACTTTCCCCCGAC
 V  K  I  L  Q  S  S  C  D  D  D  G  H  F  P  P  T

       810        820        830        840        850
CATCCAGCTCCTGTGCCTCATCTCCGGGTACACCCCAGGGGCCATCAATG
  I  Q  L  L  C  L  I  S  G  Y  T  P  G  A  I  N

       860        870        880        890        900
TCACCTGGCTGGAGAACGGGCAGGTCATGAAAGTGAACTCGCCCACCCCT
V  T  W  L  E  N  G  Q  V  M  K  V  N  S  P  T  P

       910        920        930        940        950
CCTGCCACGCAGGAGGGTGAGCTGGCCTCCACACAAAGTGAGTTCACCCT
 P  A  T  Q  E  G  E  L  A  S  T  Q  S  E  F  T  L

       960        970        980        990       1000
CGCCCAGAAGCACTGGCTGTCGGACCGCACTTACACCTGCCAGGTCACCT
  A  Q  K  H  W  L  S  D  R  T  Y  T  C  Q  V  T

      1010       1020       1030       1040       1050
ATCAAGGTACCACCTATAACGACAGCACCAAGAAGTGTGCAGATTCCAAC
Y  Q  G  T  T  Y  N  D  S  T  K  K  C  A  D  S  N

      1060       1070       1080       1090       1100
CCGAGAGGGGTGAGTGCCTACCTAAGCCGGCCCAGCCCGTTTGACCTGTT
 P  R  G  V  S  A  Y  L  S  R  P  S  P  F  D  L  F

      1110       1120       1130       1140       1150
CATCAGCAAGTCGCCCACGATCACCTGTCTGGTGGTGGACCTGGCACCCA
  I  S  K  S  P  T  I  T  C  L  V  V  D  L  A  P

      1160       1170       1180       1190       1200
GCAAGGAGACCGTGAACCTGACCTGGTCCCGGGCCAGTGGGAAGCCTGTG
S  K  E  T  V  N  L  T  W  S  R  A  S  G  K  P  V

      1210       1220       1230       1240       1250
CCCCACATCCCCGCAACGGAGAAGAAGCAGCAGCGCAATGGCACGTTAAC
 P  H  I  P  A  T  E  K  K  Q  Q  R  N  G  T  L  T

      1260       1270       1280       1290       1300
CGTTACGTCCATCCTGCCGGTGGTCACCCAAGACTGGATCGAGGGGGAGA
  V  T  S  I  L  P  V  V  T  Q  D  W  I  E  G  E

      1310       1320       1330       1340       1350
CCTACCAGTGCAGGGTGACCCACCCCCACCTCCCCAGGGCCCTCGTGCGG
T  Y  Q  C  R  V  T  H  P  H  L  P  R  A  L  V  R
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      1360       1370       1380       1390       1400
TCCATGACCAAGACCAGCGGCCCGCGTGCTGCCCCGGAAGTCTATGTGTT
 S  M  T  K  T  S  G  P  R  A  A  P  E  V  Y  V  F

      1410       1420       1430       1440       1450
TGCAACGCCAGAGAAGCTAGAGAGCCGGGACAAGCGCACCCTCGCCTGCC
  A  T  P  E  K  L  E  S  R  D  K  R  T  L  A  C

      1460       1470       1480       1490       1500
TGATCGAGAACTTCATGCCTGAGGACATATCGGTGCAGTGGCTGCACAGC
L  I  E  N  F  M  P  E  D  I  S  V  Q  W  L  H  S

      1510       1520       1530       1540       1550
GACGTGCAGCTCCCGGACGCCCGGCACAGCGTGACGCAGCCCCGCAAGAC
 D  V  Q  L  P  D  A  R  H  S  V  T  Q  P  R  K  T

      1560       1570       1580       1590       1600
CAAGGGCTCCGGCTTCTTCGTCTTCAGCCGCCTGGAGGTGACCAAGGCCG
  K  G  S  G  F  F  V  F  S  R  L  E  V  T  K  A

      1610       1620       1630       1640       1650
AATGGGAGCAGAAAGACGAGTTCATCTGCCGTGCAGTCCATGAGGCAGCG
E  W  E  Q  K  D  E  F  I  C  R  A  V  H  E  A  A

      1660       1670       1680       1690       1700
AGCCCCTCATGGATCGTCCAGCAAGCGGTGTCTGTAAATCCCGGTAAATG A
 S  P  S  W  I  V  Q  Q  A  V  S  V  N  P  G  K  *
_____________________________________________________a_
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Figure 5

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        10         20         30         40         50
ATGGGTTGGAGTTGTATAATTCTCTTTCTGGTGGCTACCGCTACCGGTGT
 M  G  W  S  C  I  I  L  F  L  V  A  T  A  T  G  V

        60         70         80         90        100
GCACTCCCAGTCAGCTCTGACGCAACCAGCTTCCGTTTCAGGGAGCCCAG
  H  S  Q  S  A  L  T  Q  P  A  S  V  S  G  S  P

       110        120        130        140        150
GGCAGAGTATAACCATCAGTTGCACTGGCACTAGCTCCGACGTTGGCGGA
G  Q  S  I  T  I  S  C  T  G  T  S  S  D  V  G  G

       160        170        180        190        200
TACAAGTACGTATCTTGGTATCAACAGCACCCCGGAAAAGCTCCTAAGCT
 Y  K  Y  V  S  W  Y  Q  Q  H  P  G  K  A  P  K  L

       210        220        230        240        250
GATGATTTTCGAGGTTTCCAACAGACCCAGCGGTGTACCTAATCGGTTCT
  M  I  F  E  V  S  N  R  P  S  G  V  P  N  R  F

       260        270        280        290        300
CTGGCTCTAAATCCGGGAACACTGCCTCACTCACCATCAGCGGACTGCAG
S  G  S  K  S  G  N  T  A  S  L  T  I  S  G  L  Q

       310        320        330        340        350
GTGGAAGACGAGGCGGACTATTATTGCAGCTCTCTCACCAGACGCGTTAC
 V  E  D  E  A  D  Y  Y  C  S  S  L  T  R  R  V  T

       360        370        380        390        400
CGTCATTTTTGGCGGAGGCACTAAGCTGACCGTTCTCGGCCAACCTAAAG
  V  I  F  G  G  G  T  K  L  T  V  L  G  Q  P  K

       410        420        430        440        450
CCGCCCCATCTGTGACCCTTTTTCCTCCCAGCAGCGAGGAACTGCAGGCC
A  A  P  S  V  T  L  F  P  P  S  S  E  E  L  Q  A

       460        470        480        490        500
AATAAGGCCACTCTCGTGTGCCTCATGTCAGACTTTTACCCAGGGATCCT
 N  K  A  T  L  V  C  L  M  S  D  F  Y  P  G  I  L

       510        520        530        540        550
GACCGTGACCTGGAAGGCCGACGGAACCCCCATCACACAGGGCGTGGAAA
  T  V  T  W  K  A  D  G  T  P  I  T  Q  G  V  E

       560        570        580        590        600
TGACCACGCCAAGTAAGCAGTCTAACAACAAATACGCCGCATCTAGCTAC
M  T  T  P  S  K  Q  S  N  N  K  Y  A  A  S  S  Y

       610        620        630        640        650
TTGAGCCTGACCCCAGAGCAGTGGCGGAGTCACAATAGCTACAGCTGCCA
 L  S  L  T  P  E  Q  W  R  S  H  N  S  Y  S  C  Q
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       660        670        680        690        700
AGTGATGCACGAGGGATCAATCGTGGAGAAGACTGTTGCTCCAGCCGAGT
  V   M   H   E   G   S   I   V   E   K   T   V   A   P   A   E

GCTCCTAA
C   S   *
```

Figure 6

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        10         20         30         40         50
ATGGGTTGGAGTTGTATAATTCTCTTTCTGGTGGCTACCGCTACCGGTGT
 M  G  W  S  C  I  I  L  F  L  V  A  T  A  T  G  V

        60         70         80         90        100
GCACTCCCAGTCAGCTCTGACGCAACCAGCTTCCGTTTCAGGGAGCCCAG
  H  S  Q  S  A  L  T  Q  P  A  S  V  S  G  S  P

       110        120        130        140        150
GGCAGAGTATAACCATCAGTTGCACTGGCACTAGCTCCGACGTTGGCGGA
G  Q  S  I  T  I  S  C  T  G  T  S  S  D  V  G  G

       160        170        180        190        200
TACAAGTACGTATCTTGGTATCAACAGCACCCCGGAAAAGCTCCTAAGCT
 Y  K  Y  V  S  W  Y  Q  Q  H  P  G  K  A  P  K  L

       210        220        230        240        250
GATGATTTTCGAGGTTTCCAACAGACCCAGCGGTGTACCTAATCGGTTCT
  M  I  F  E  V  S  N  R  P  S  G  V  P  N  R  F

       260        270        280        290        300
CTGGCTCTAAATCCGGGAACACTGCCTCACTCACCATCAGCGGACTGCAG
S  G  S  K  S  G  N  T  A  S  L  T  I  S  G  L  Q

       310        320        330        340        350
GTGGAAGACGAGGCGGACTATTATTGCAGCTCTCTCACCAGACGCGTTAC
 V  E  D  E  A  D  Y  Y  C  S  S  L  T  R  R  V  T

       360        370        380        390        400
CGTCATTTTTGGCGGGGGGACTAAGCTGACCGTTCTCGGCCAACCTAAAG
  V  I  F  G  G  G  T  K  L  T  V  L  G  Q  P  K

       410        420        430        440        450
CCGCCCCCTCTGTGACCCTTTTTCCCCCTAGCAGCGAGGAACTGCAGGCC
A  A  P  S  V  T  L  F  P  P  S  S  E  E  L  Q  A

       460        470        480        490        500
AATAAGGCCACTCTCGTGTGCCTCATCTCAGACTTTTACCCAGGGGCCGT
 N  K  A  T  L  V  C  L  I  S  D  F  Y  P  G  A  V

       510        520        530        540        550
GGAGGTGGCCTGGAAGGCCGACGGAAGCGCCGTCAACGCGGGCGTGGAAA
  E  V  A  W  K  A  D  G  S  A  V  N  A  G  V  E

       560        570        580        590        600
CGACCAAGCCAAGTAAGCAGTCTAACAACAAATACGCCGCATCTAGCTAC
T  T  K  P  S  K  Q  S  N  N  K  Y  A  A  S  S  Y

       610        620        630        640        650
TTGAGCCTGACCTCAGACCAGTGGAAGAGTCACAAGAGCTACAGCTGCCA
 L  S  L  T  S  D  Q  W  K  S  H  K  S  Y  S  C  Q
```

```
      660        670        680        690        700
AGTGACACACGAGGGATCAACCGTGGAGAAGACTGTTGCTCCAACCGAGT
  V   T   H   E   G   S   T   V   E   K   T   V   A   P   T   E

GCTCCTAA
C   S   *
```

Figure 7

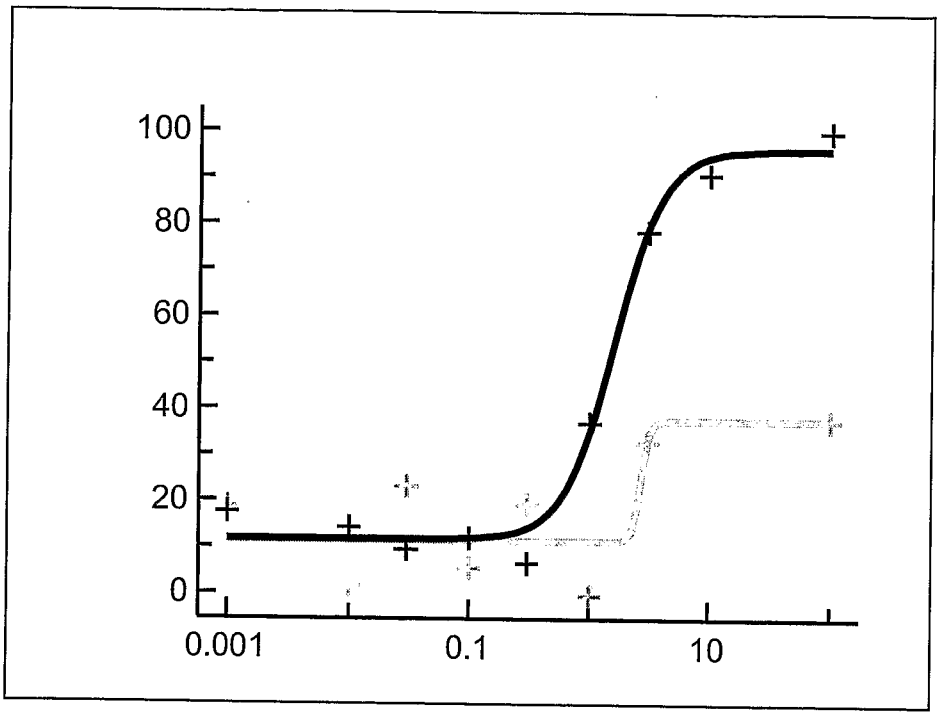


Figure 8

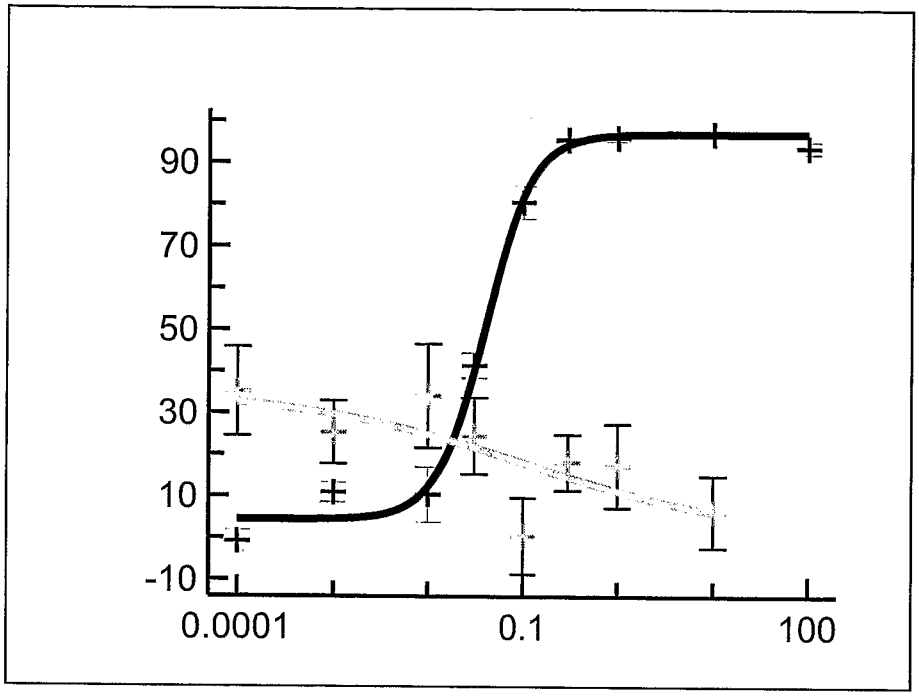


Figure 9

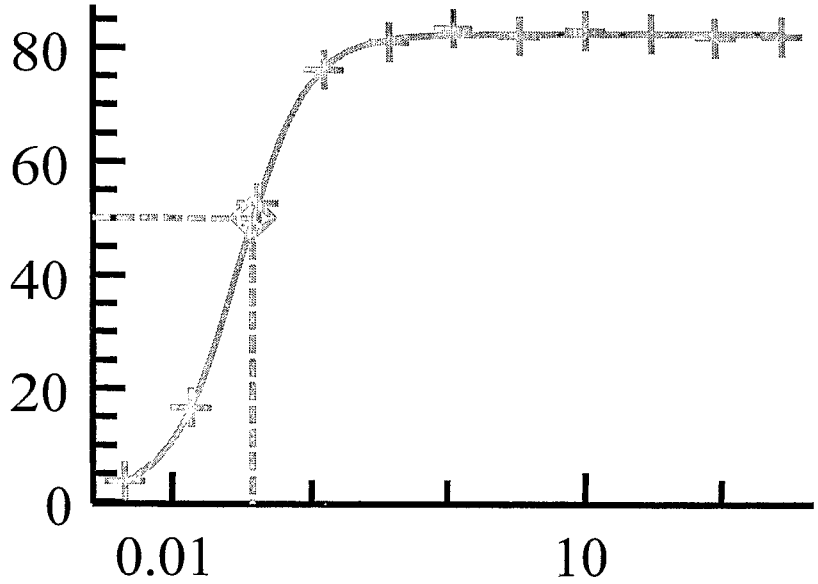
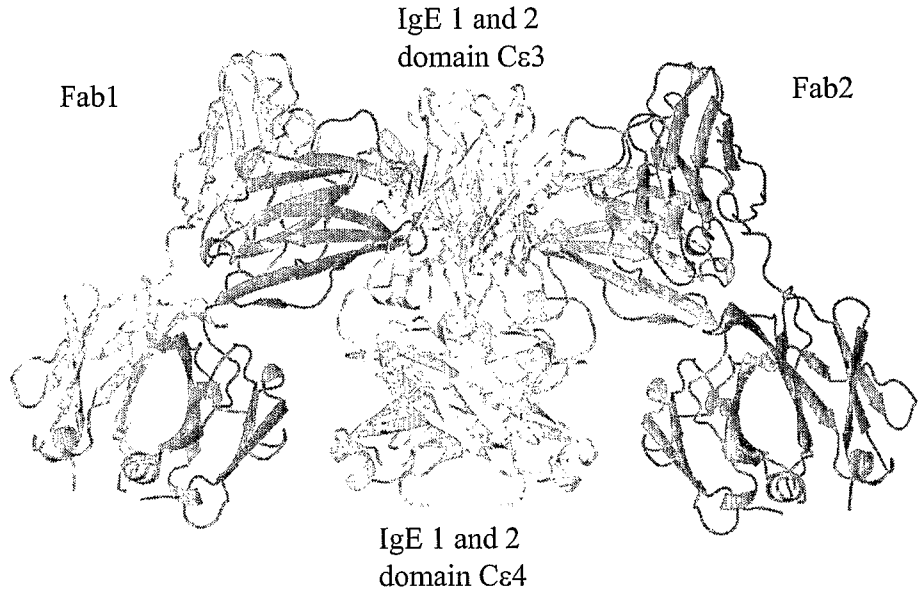


Figure 10

a)


IgE 1 and 2
domain Cε3
Fab1
Fab2
IgE 1 and 2
domain Cε4

b)

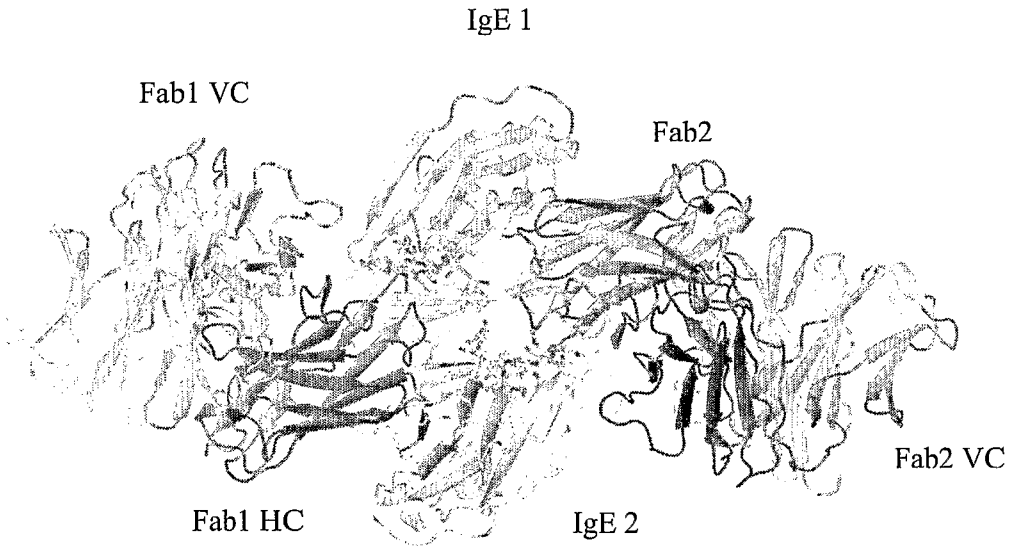

IgE 1
Fab1 VC
Fab2
Fab2 VC
Fab1 HC
IgE 2

Figure 11

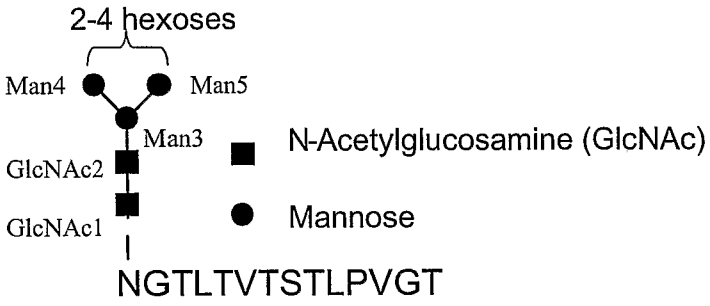

2-4 hexoses
Man4
Man5
Man3
GlcNAc2
GlcNAc1
N-Acetylglucosamine (GlcNAc)
Mannose
NGTLTVTSTLPVGT

Figure 12

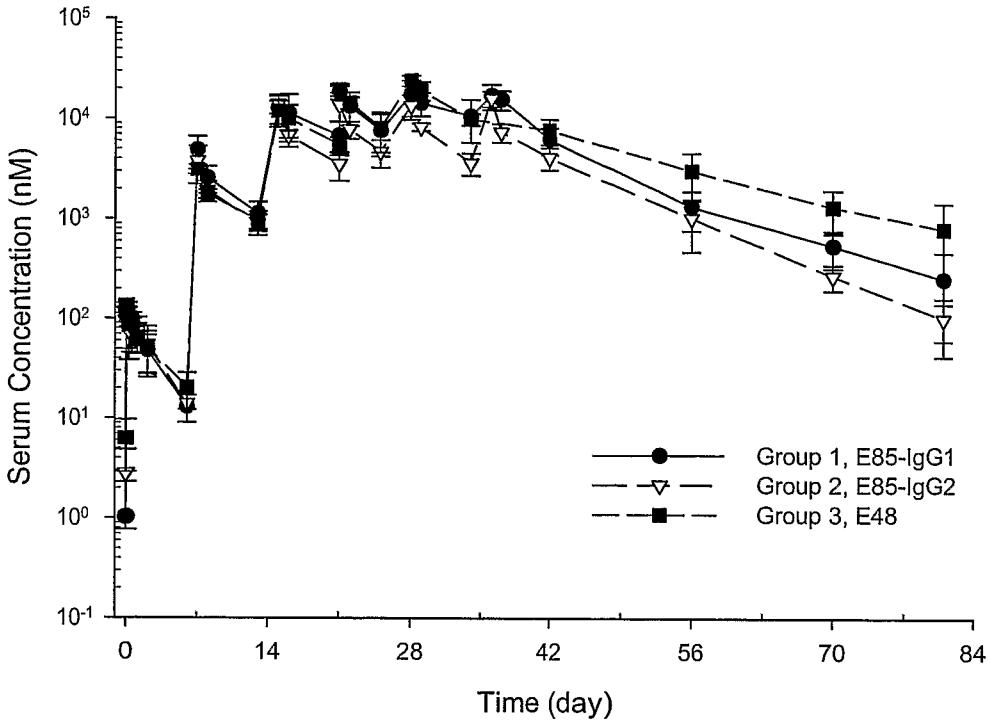

Serum Concentration (nM)
10^5
10^4
10^3
10^2
10^1
10^0
10^-1
0
14
28
42
56
70
84
Time (day)
Group 1, E85-IgG1
Group 2, E85-IgG2
Group 3, E48

Figure 13

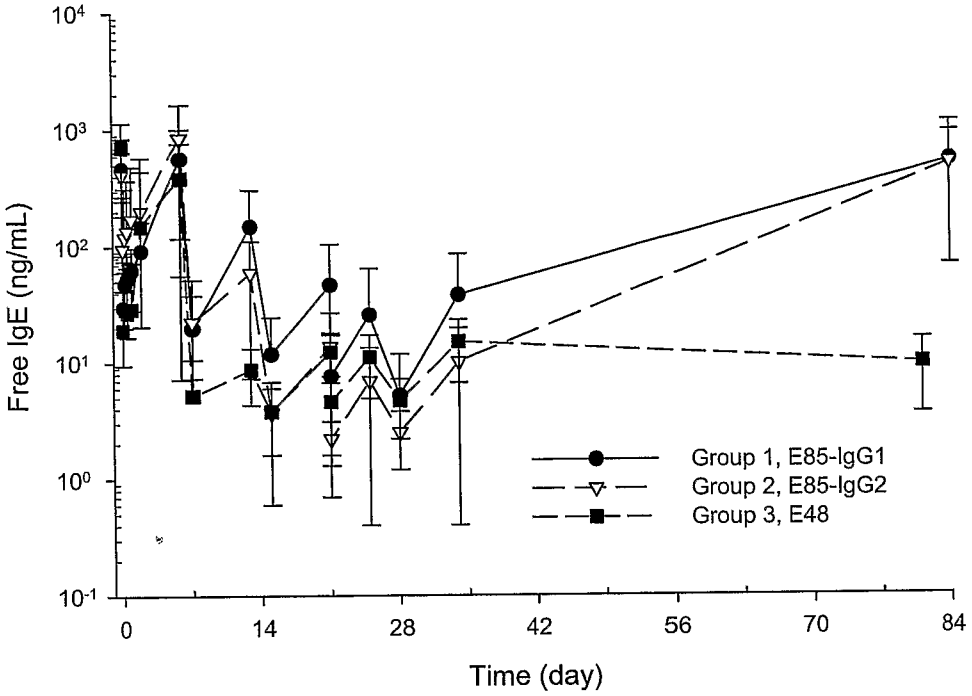

Free IgE (ng/mL)
10^4
10^3
10^2
10^1
10^0
10^{-1}
0
14
28
42
56
70
84
Time (day)
Group 1, E85-IgG1
Group 2, E85-IgG2
Group 3, E48

Figure 14

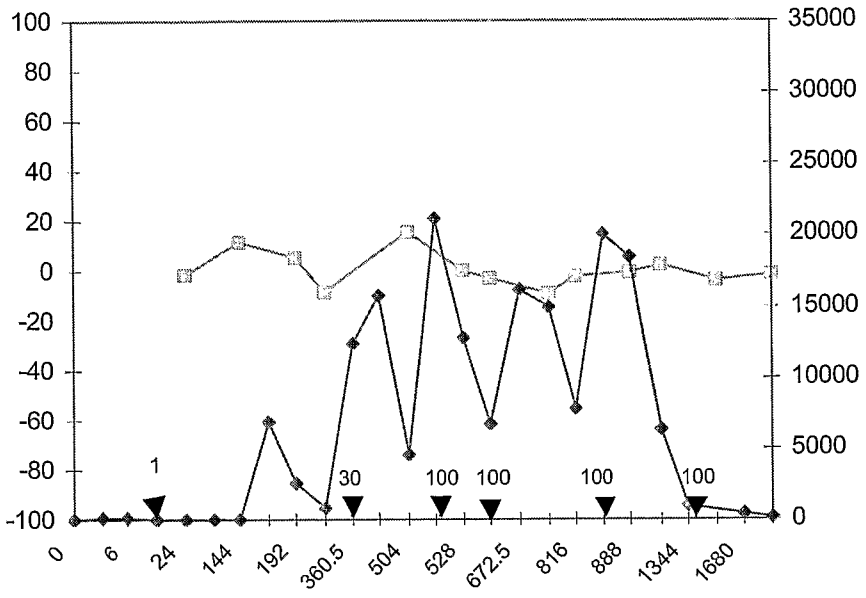

100
80
60
40
20
0
-20
-40
-60
-80
-100
35000
30000
25000
20000
15000
10000
5000
0
1
30
100
100
100
100
0
6
24
144
192
360.5
504
528
672.5
816
888
1344
1680

Figure 15

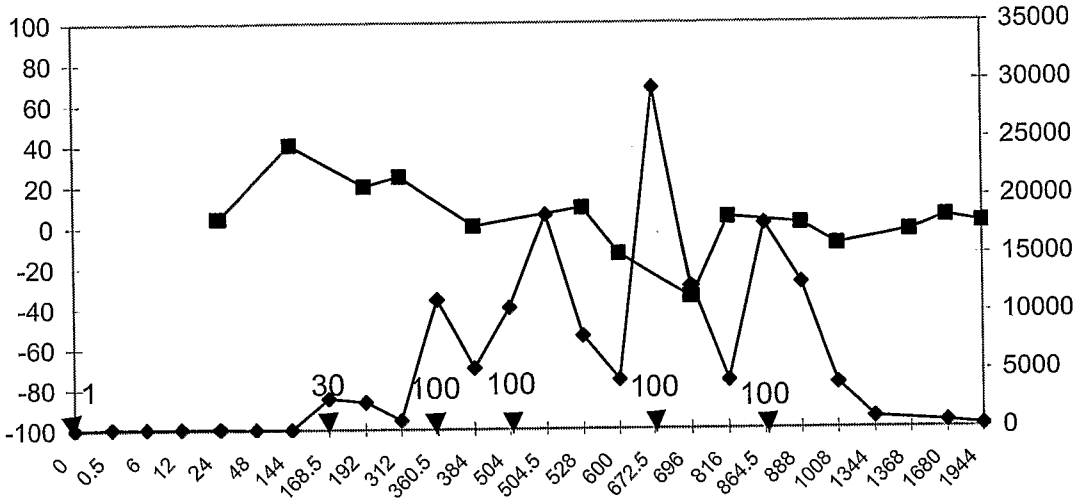

100
80
60
40
20
0
-20
-40
-60
-80
-100
35000
30000
25000
20000
15000
10000
5000
0
1
30
100
100
100
100
0
0.5
6
12
24
48
144
168.5
192
312
360.5
384
504
504.5
528
600
672.5
696
816
864.5
888
1008
1344
1368
1680
1944

Figure 16

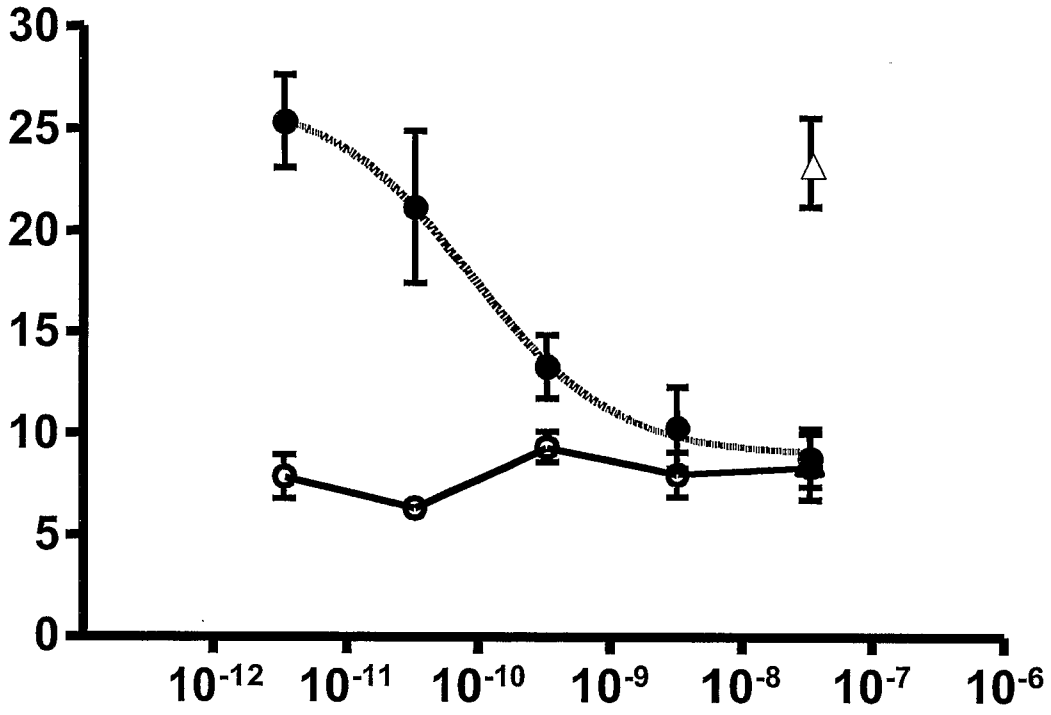


Figure 17

