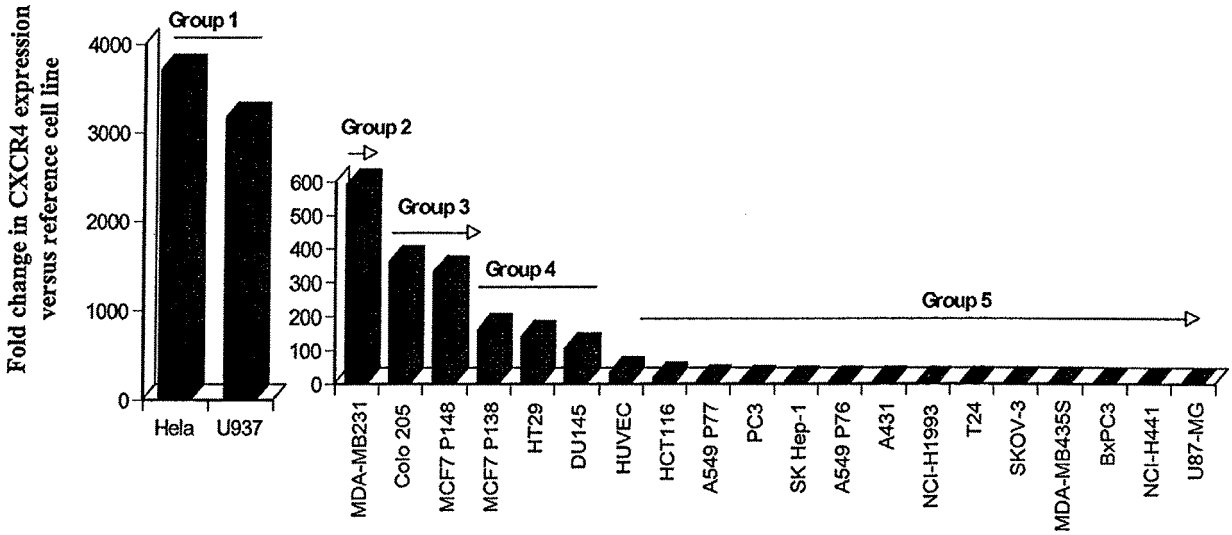



FIGURE 1A

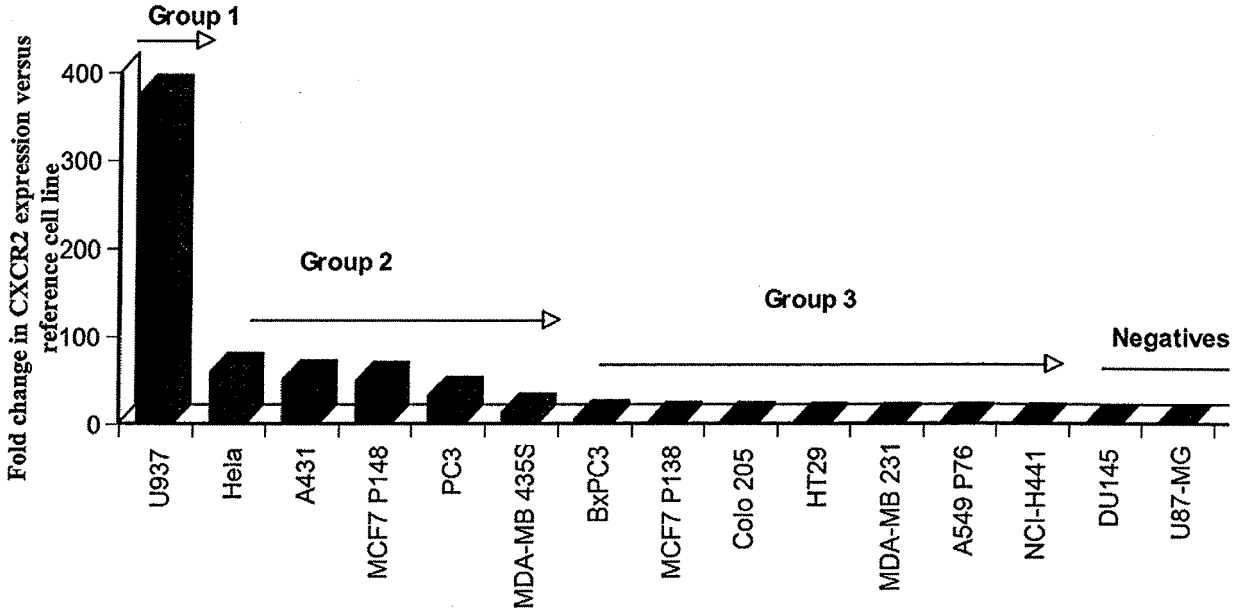



FIGURE 1B

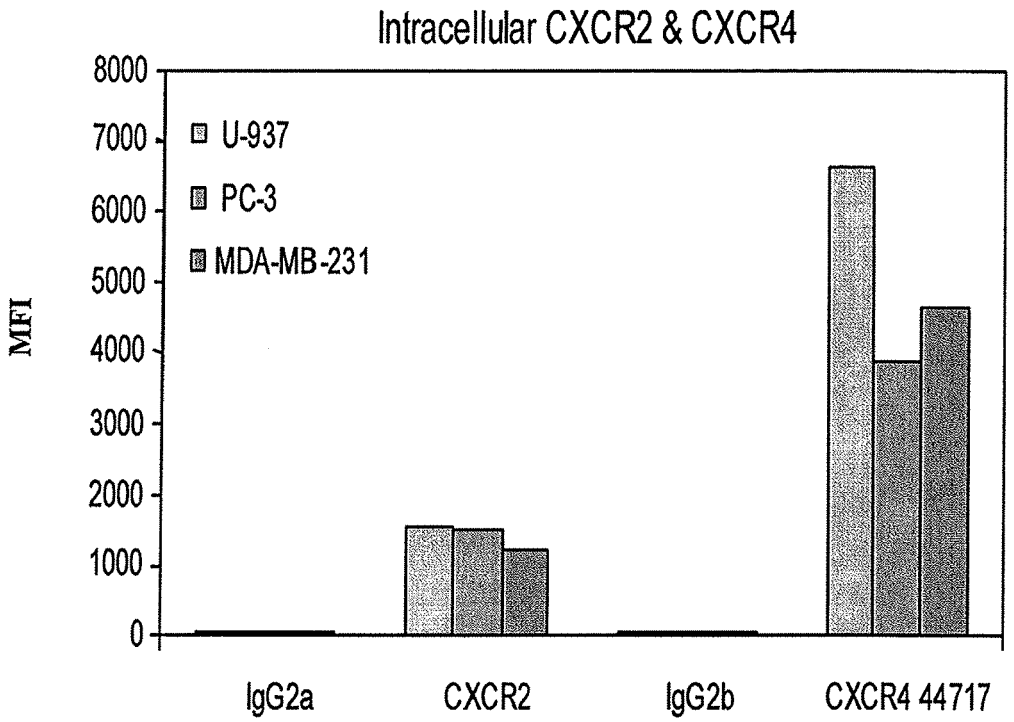

Intracellular CXCR2 & CXCR4
MFI
8000
7000
6000
5000
4000
3000
2000
1000
0
U-937
PC-3
MDA-MB-231
IgG2a
CXCR2
IgG2b
CXCR4 44717

**FIGURE 2**

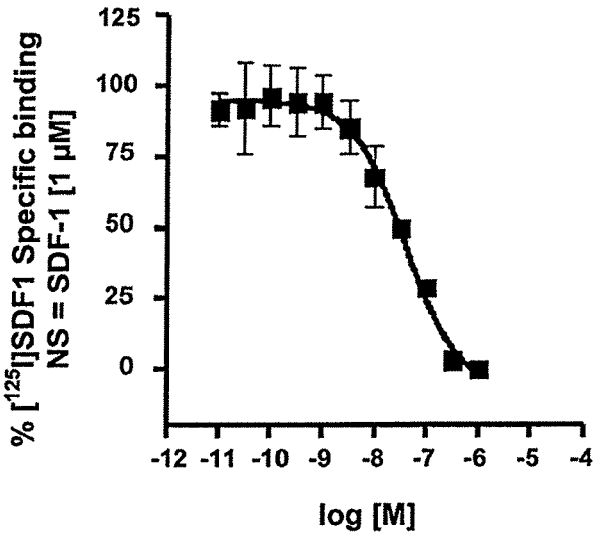



FIGURE 3A

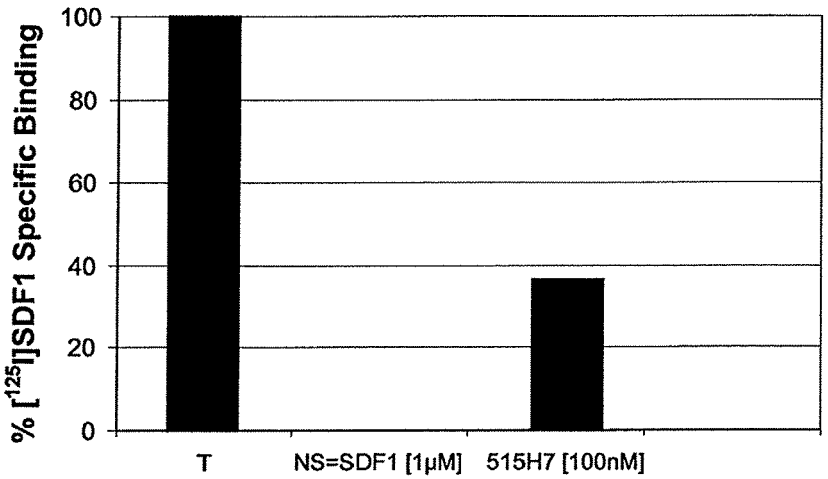



FIGURE 3B

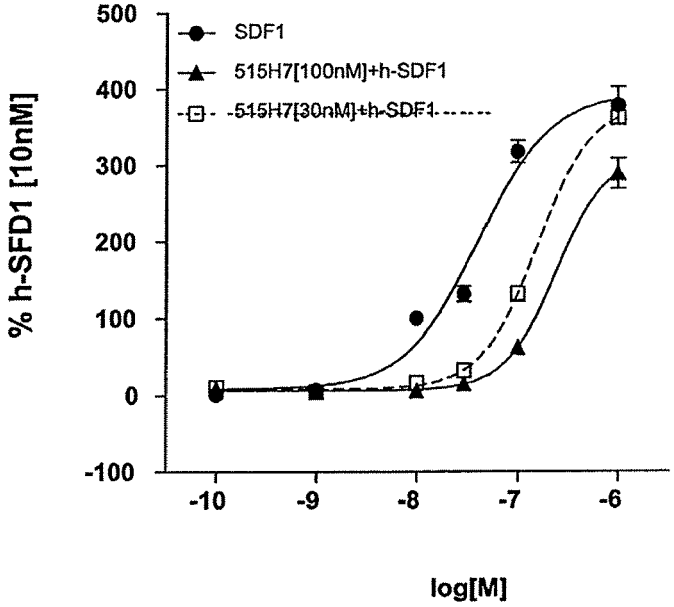



FIGURE 4

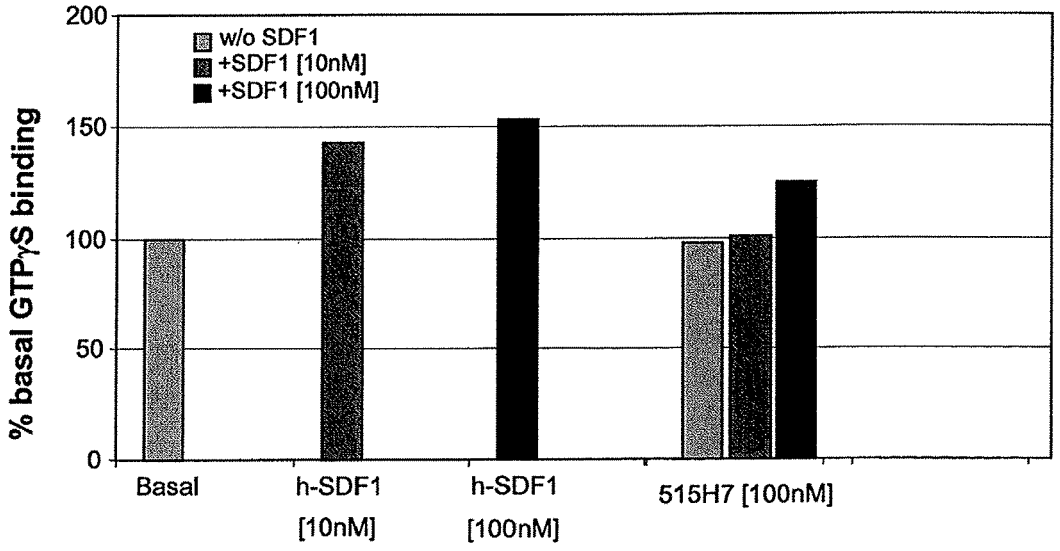



FIGURE 5

FIGURE 6A

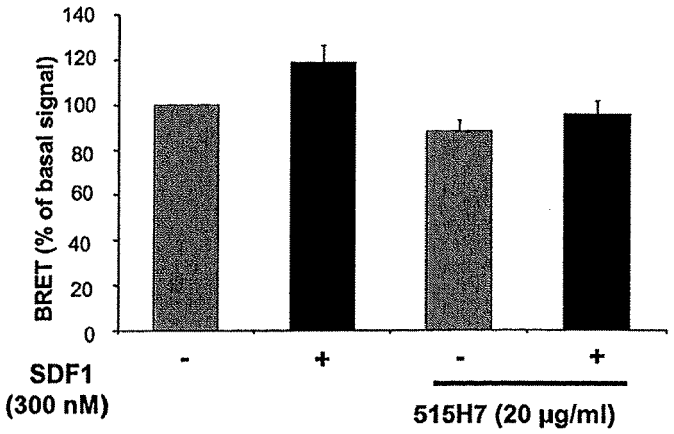



FIGURE 6B

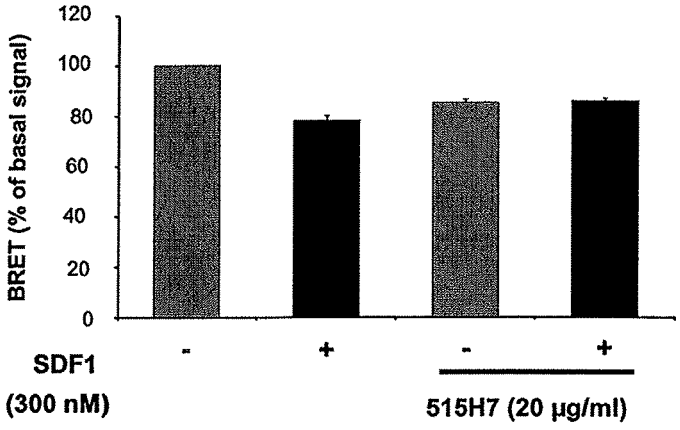
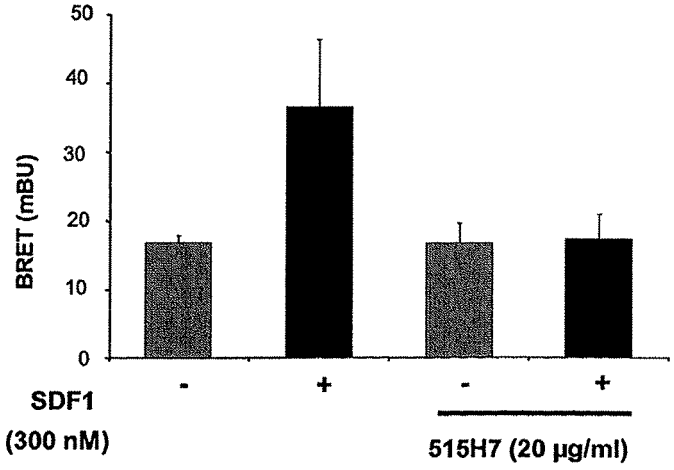



FIGURE 6C



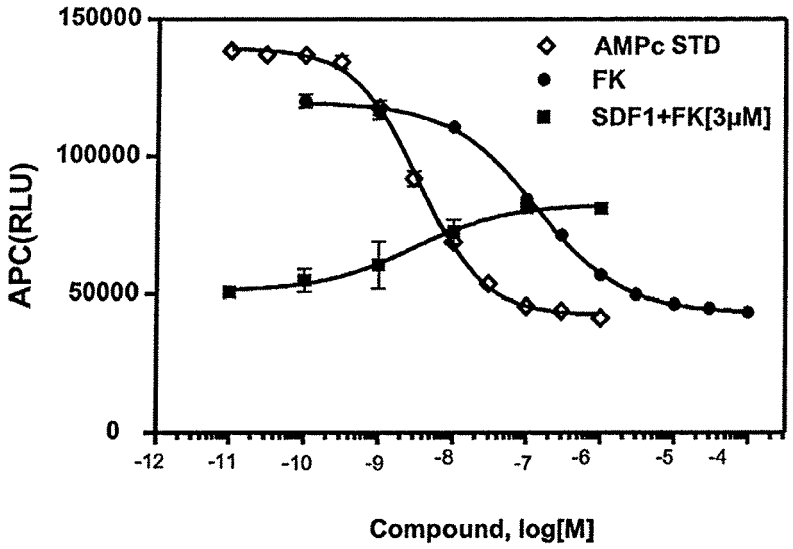



FIGURE 7A

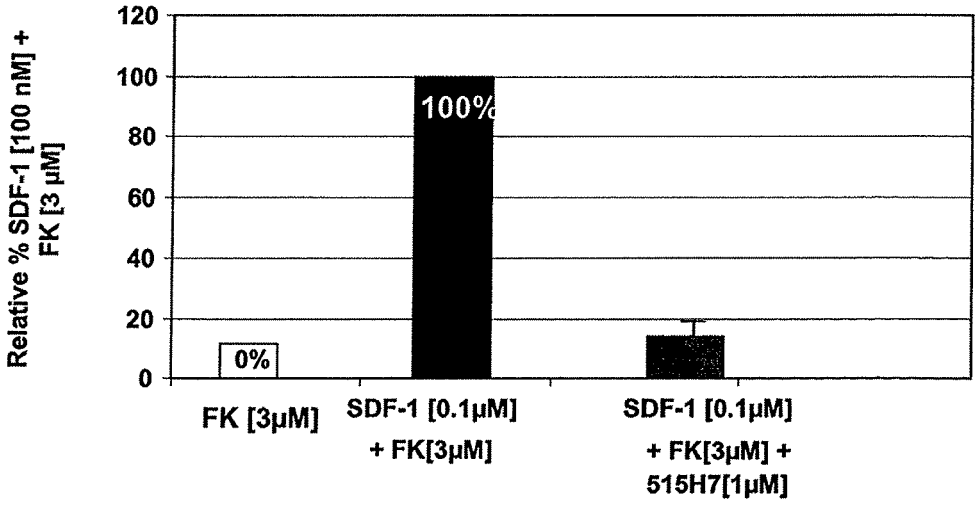



FIGURE 7B

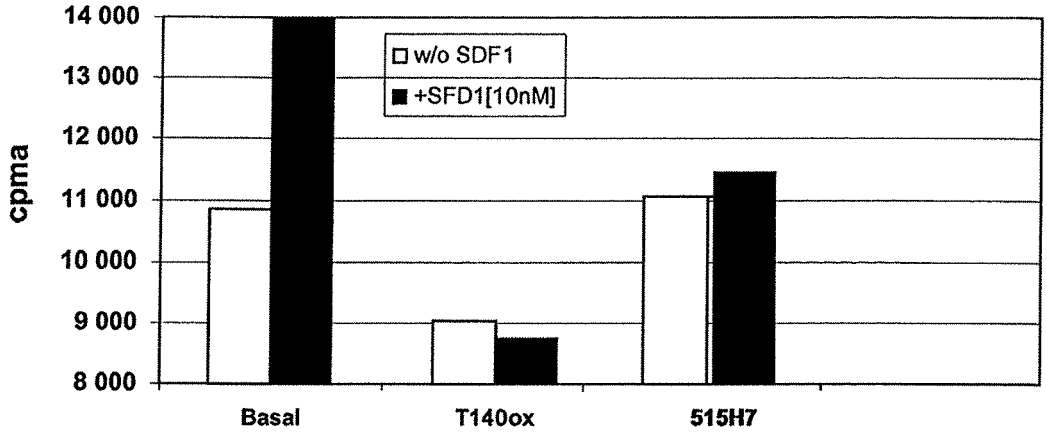



FIGURE 8

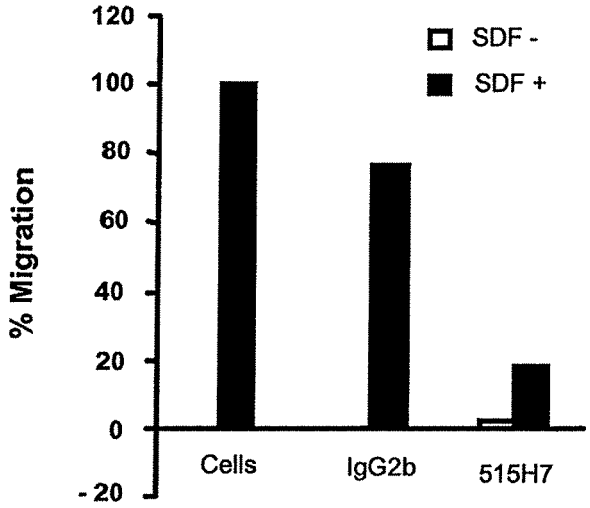



FIGURE 9

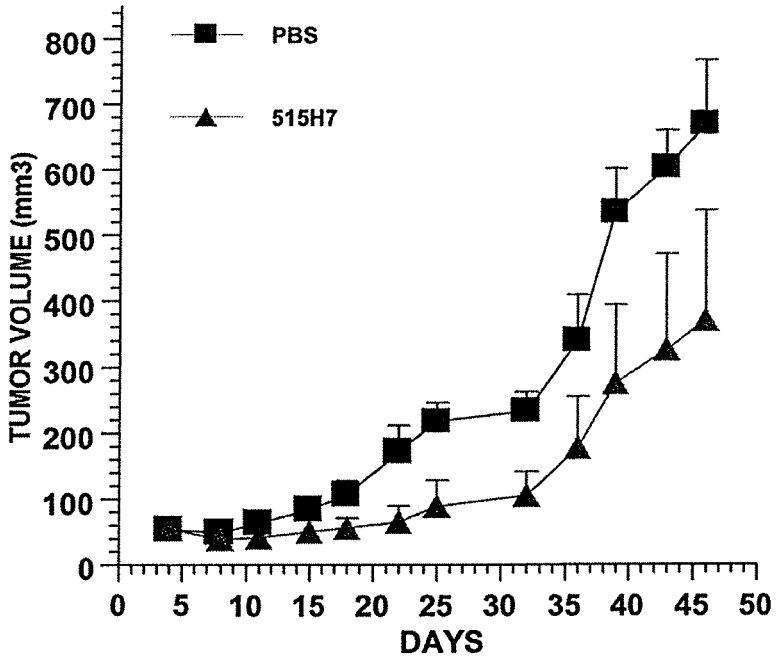



FIGURE 10

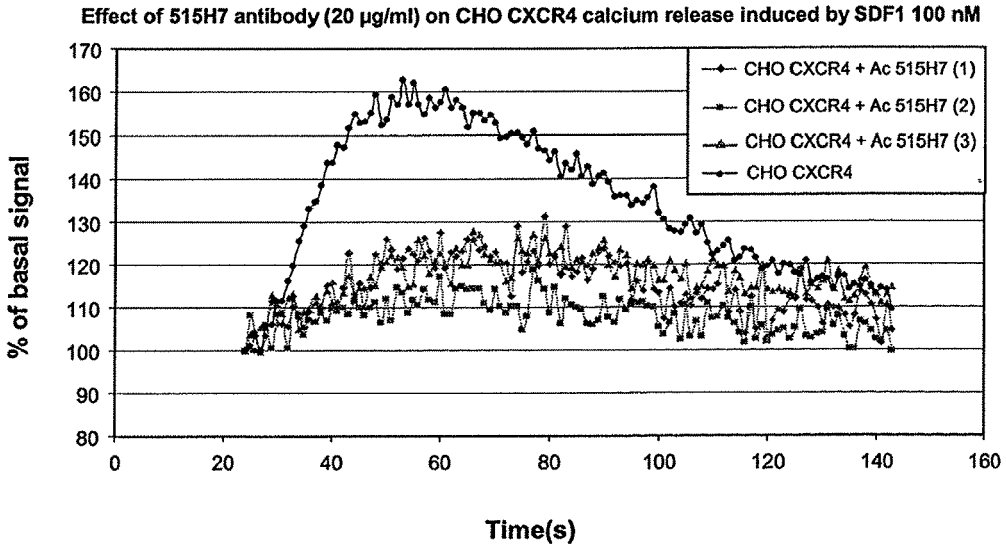



FIGURE 11A

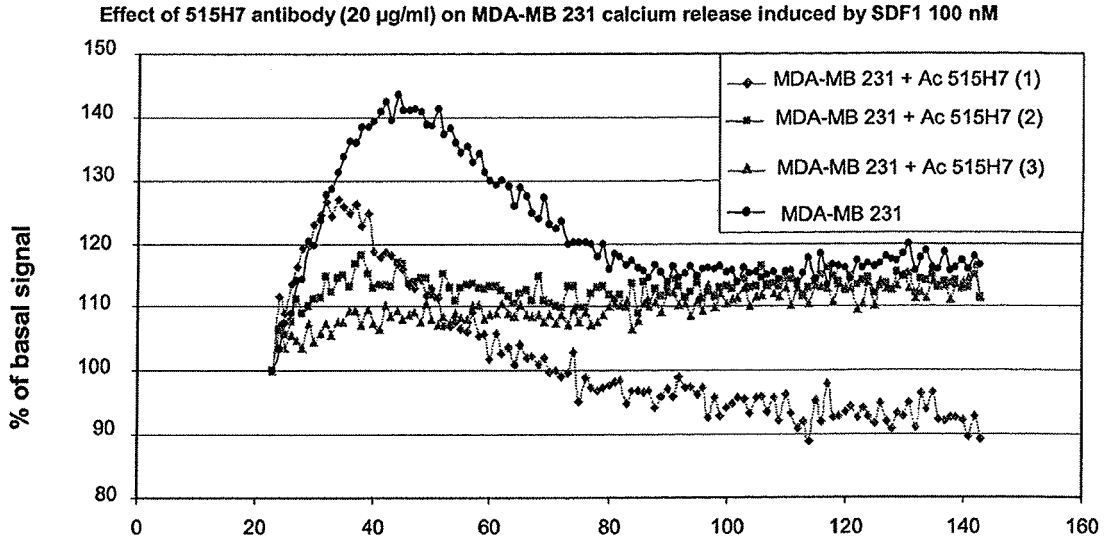



FIGURE 11B

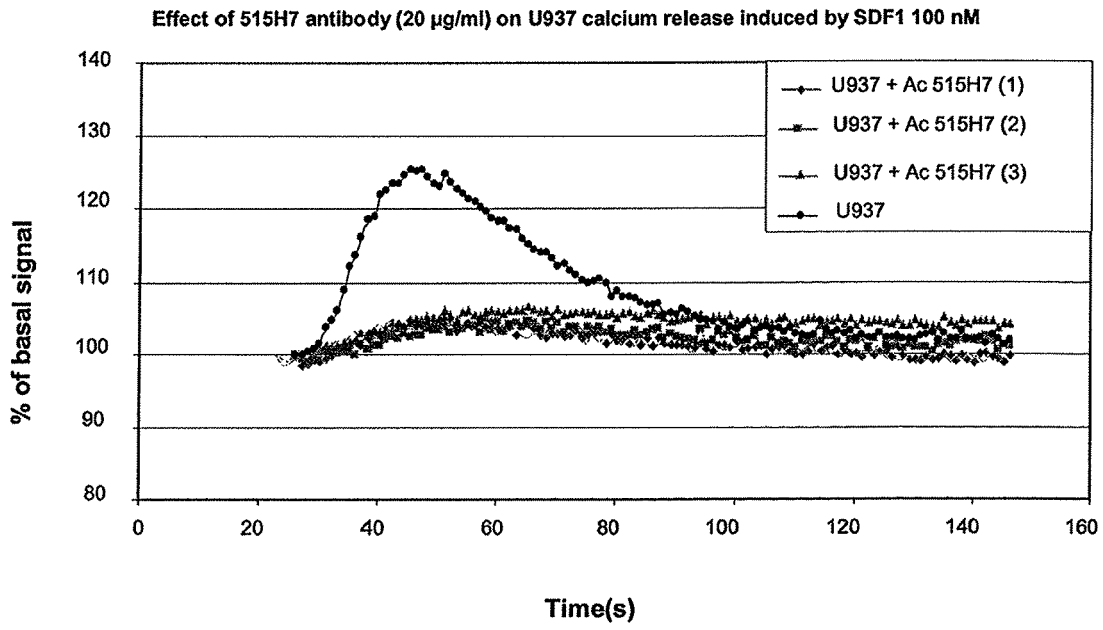



FIGURE 11C

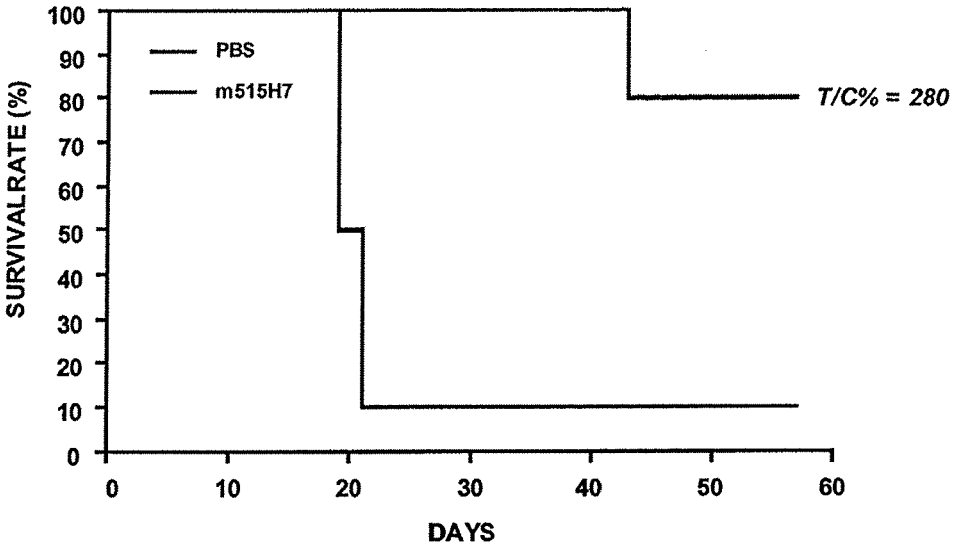



FIGURE 12

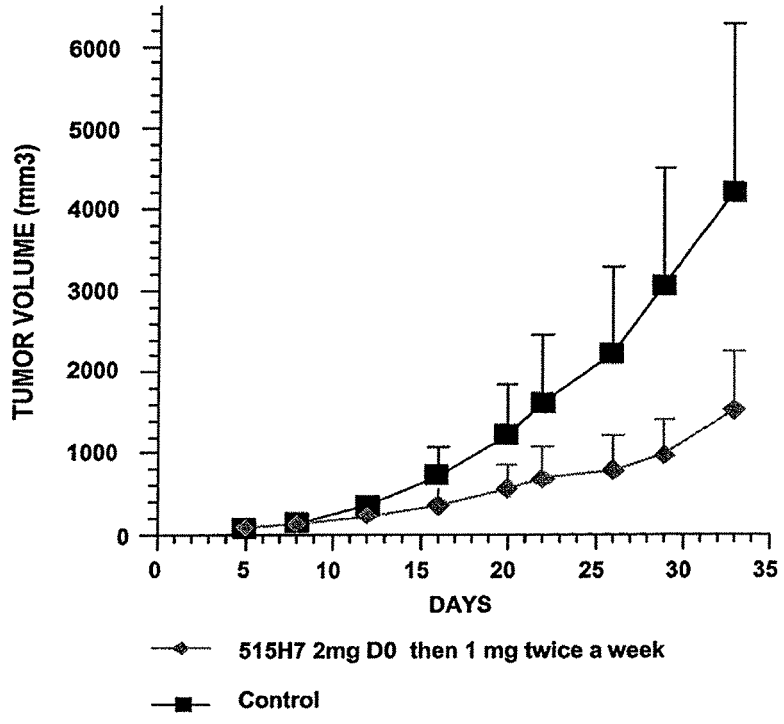



FIGURE 13

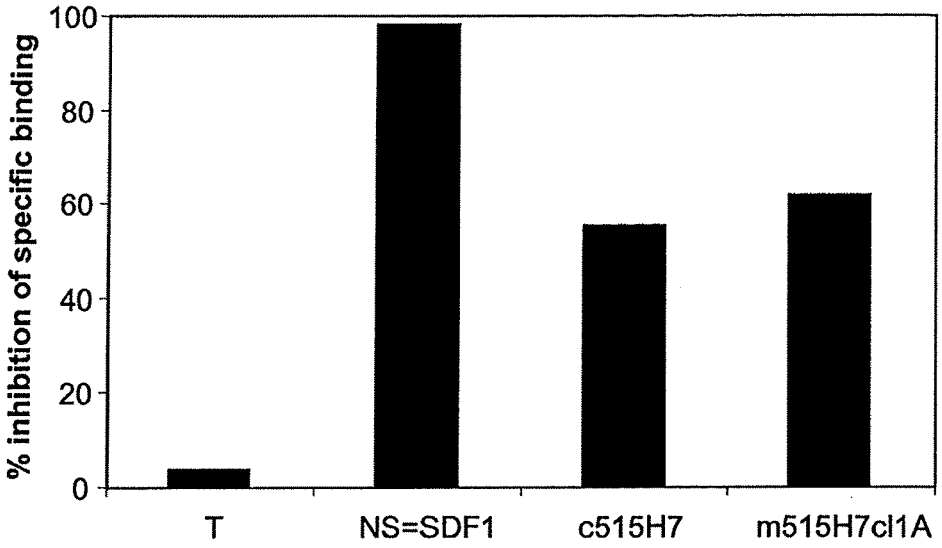



FIGURE 14

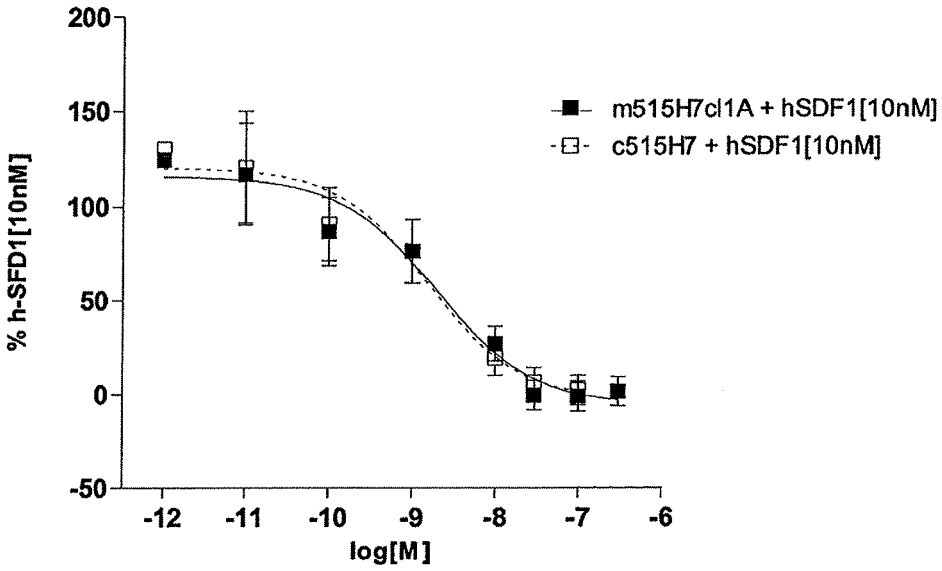



FIGURE 15

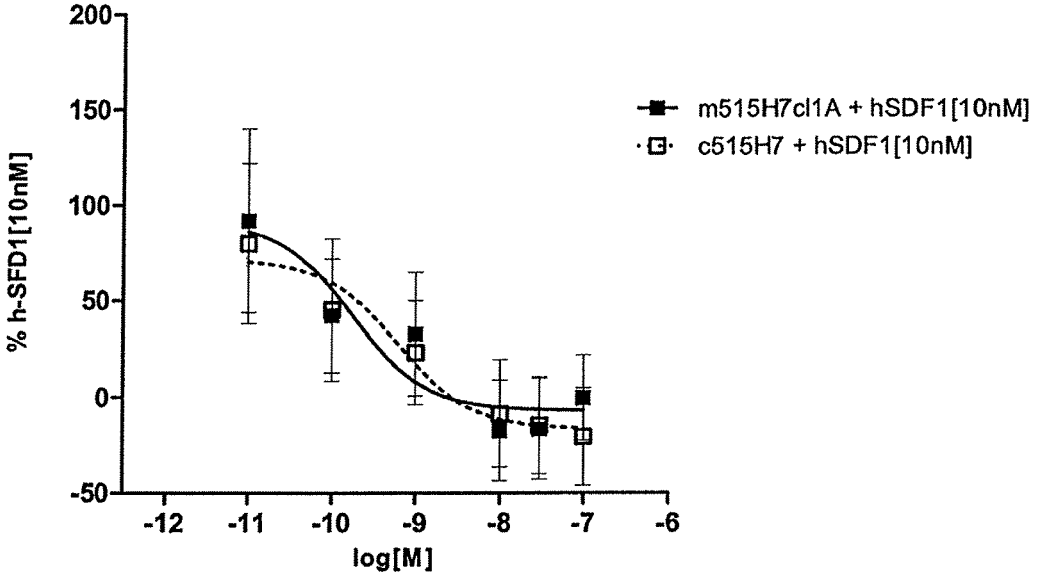



FIGURE 16

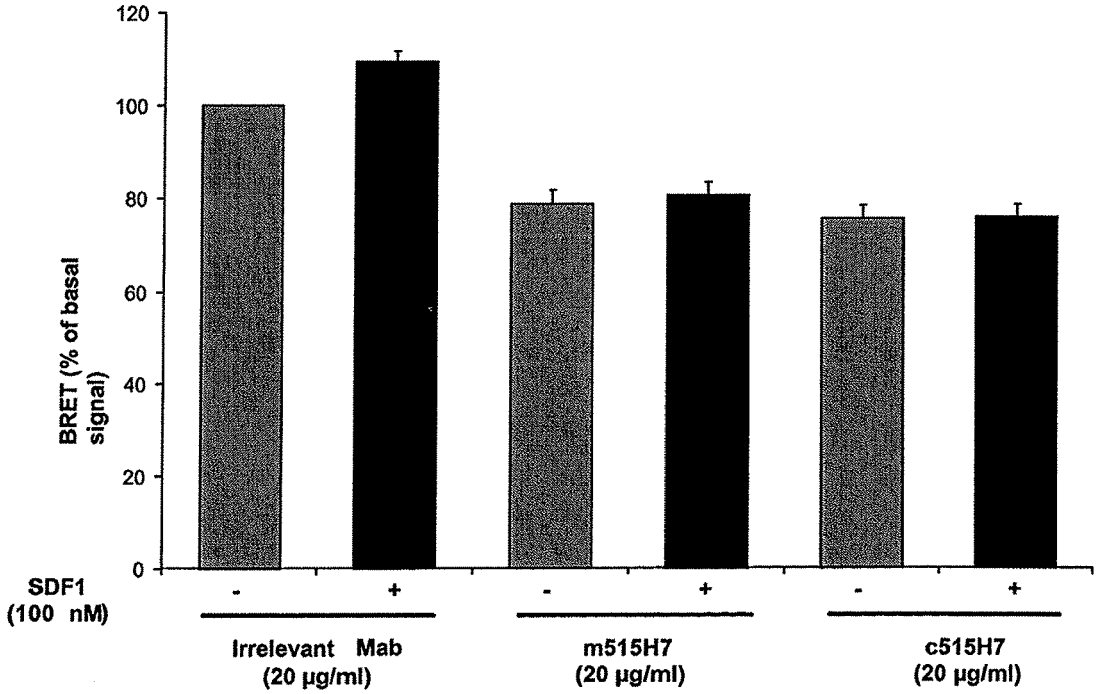



FIGURE 17A

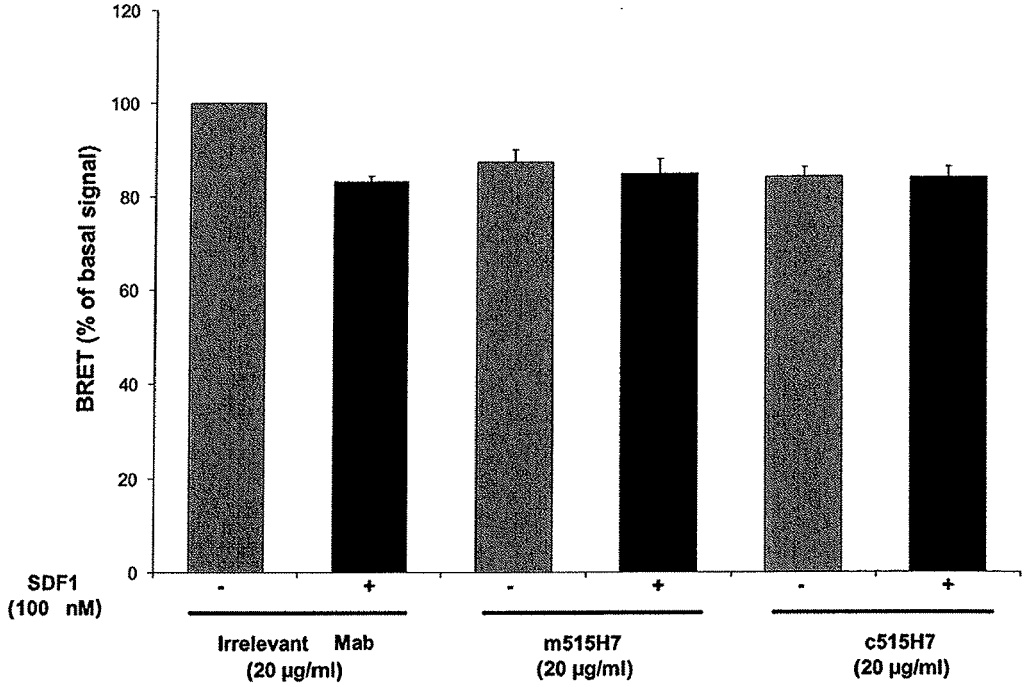



FIGURE 17B

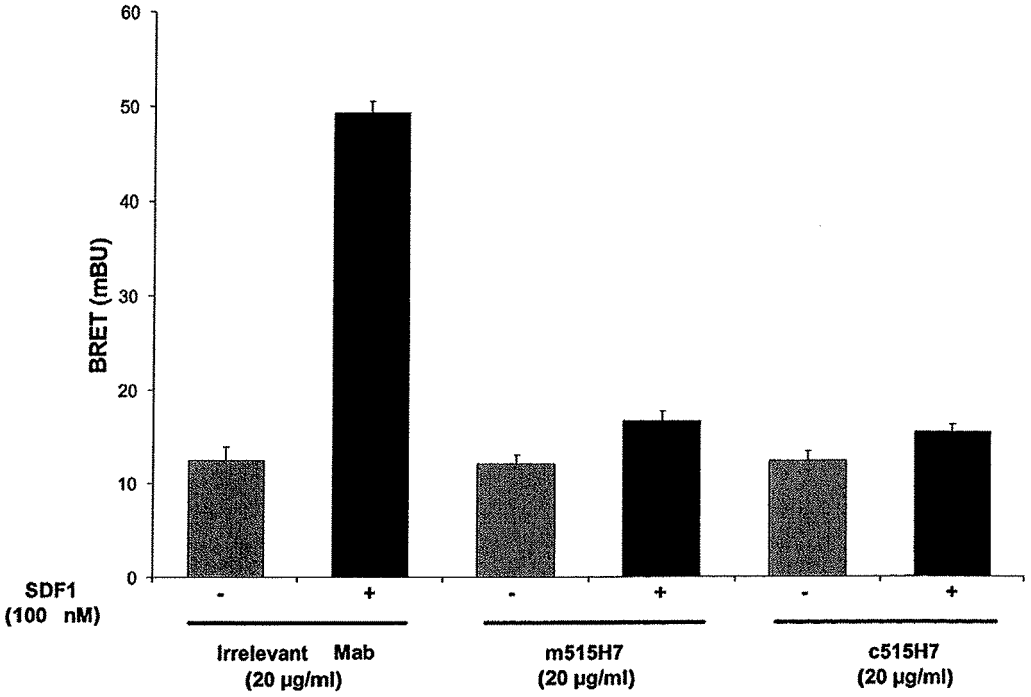



FIGURE 17C

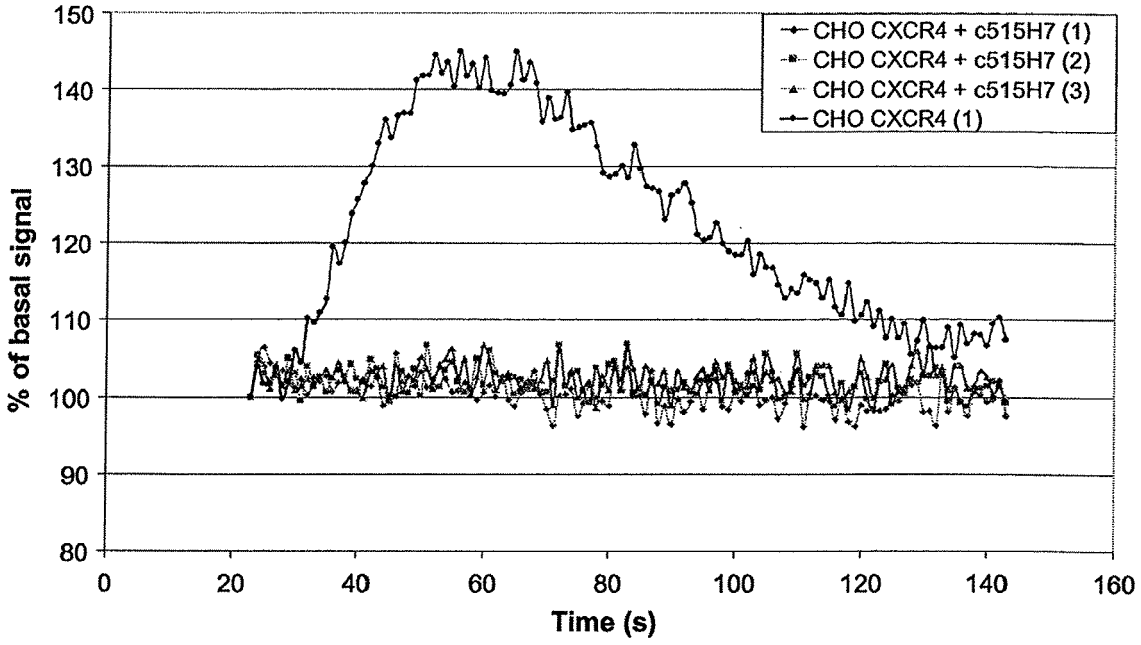



FIGURE 18A

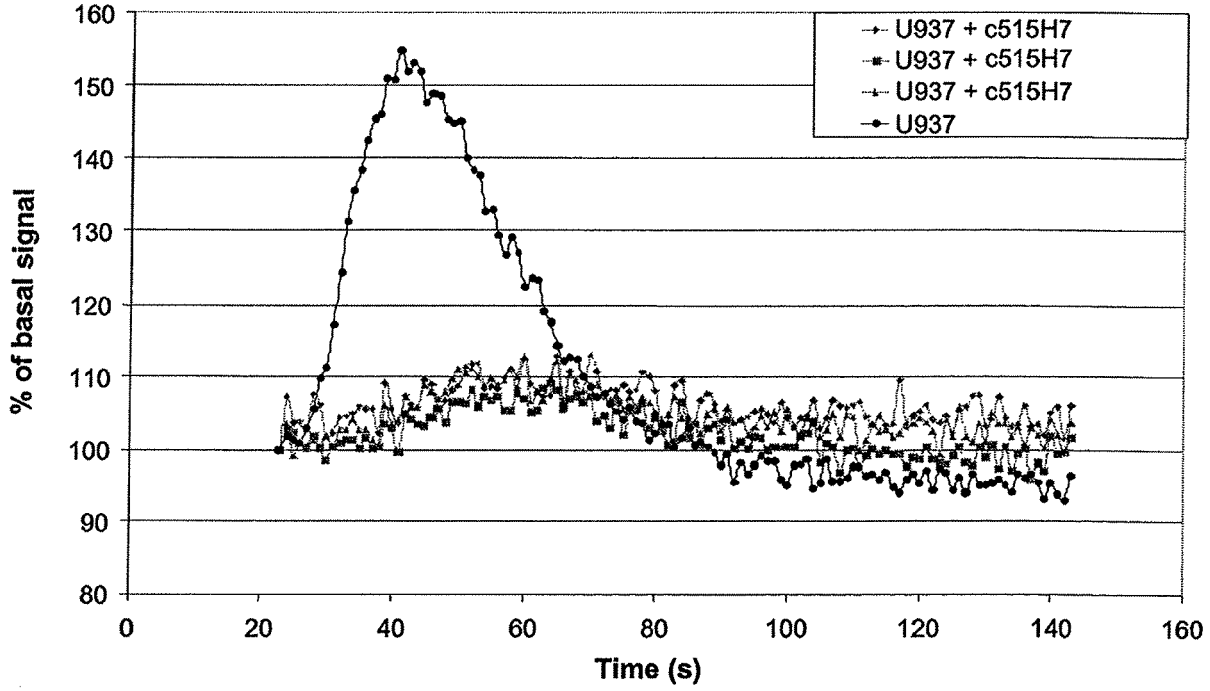



FIGURE 18B

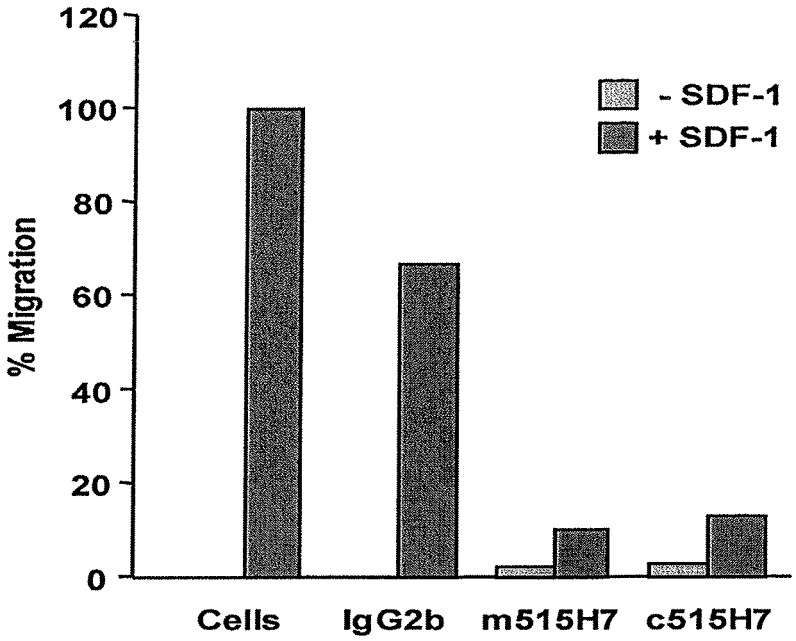



FIGURE 19

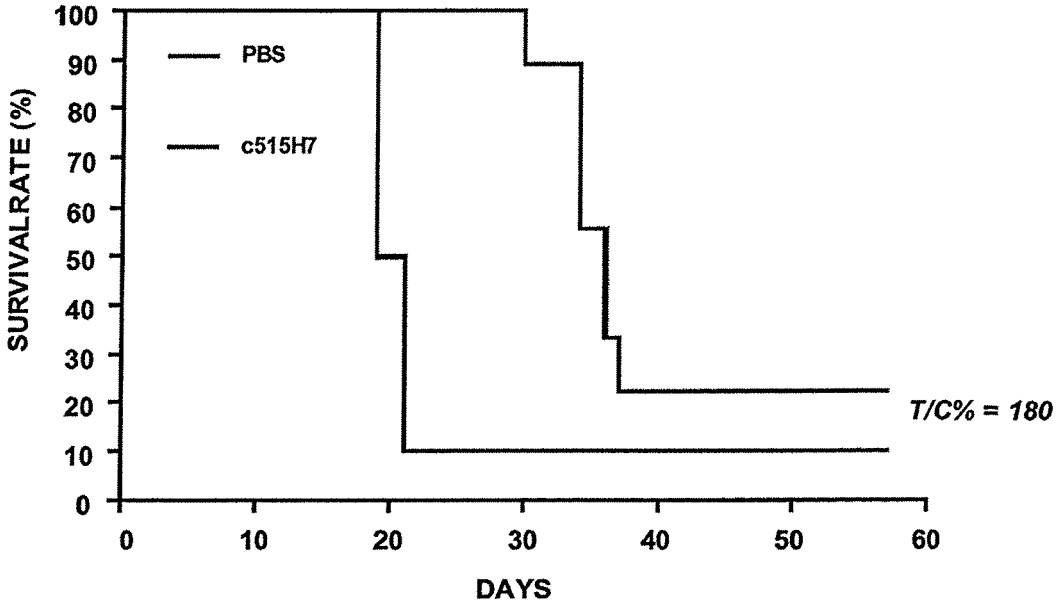



FIGURE 20

```
                          FR1-IMGT          CDR1-IMGT       FR2-IMGT        CDR2-IMGT
                          (1-26)            (27-38)         (39-55)         (56-65)
                  1       10        20      30          40        50        60
                  ........|.........|...... ...|........ .|.........|..... ....|.....
515H7 VH          EVNLVESGG.GLVQPGGSLRLSCATS GFTF....TDNY MSWVRQPPGKALEWLGF IRNKANGYTT
IGHV3-49*04       EVQLVESGG.GLVQPGRSLRLSCTAS GFTF....GDYA MSWVRQAPGKGLEWVGF IRSKAYGGTT
                    N             G     AT                      P   A   L
Priority            2             3     33                      3   3   1

VH1               EVQLVESGG.GLVQPGRSLRLSCTAS GFTF....TDNY MSWVRQAPGKGLEWVGF IRNKANGYTT
VH2               EVNLVESGG.GLVQPGRSLRLSCTAS GFTF....TDNY MSWVRQAPGKGLEWLGF IRNKANGYTT

                                FR3-IMGT                        CDR3-IMGT   FR4-IMGT
                                (66-104)                        (105-115)   (116-125)
                    70        80        90        100
                    ....|.....|.....|.....|.....|....
515H7 VH          DYSASVR.GRFTISRDNSQSILYLQMNALRAEDSATYYC ARDVGSNYFDYW GQGTTLTVSS
IGHV3-49*04       EYAASVK.GRFTISRDDSKSIAYLQMNSLKTEDTAVYYC TR
IGHJ4*01                                                  YFDYW GQGTLVTVSS
                  D S   R         N Q  L     A RA  S T                  T
Priority          1 3   1         1 3  1     2 23  3 3                  3

VH1               EYAASVK.GRFTISRDDSKSIAYLQMNSLKTEDTAVYYC ARDVGSNYFDYW GQGTLVTVSS
VH2               DYAASVR.GRFTISRDNSKSILYLQMNALRTEDTAVYYC ARDVGSNYFDYW GQGTLVTVSS
```

**FIGURE 21**

```
                          FR1-IMGT          CDR1-IMGT       FR2-IMGT        CDR2-IMGT
                          (1-26)            (27-38)         (39-55)         (56-65)
                  1       10        20      30          40        50        60
                  ........|.........|...... ...|........ .|.........|..... ....|.....
515H7 VL          DIVMSQSPSSLAVSAGEKVTMSCKSS QSLFNSRTRKNY LAWYQQKPGQSPKLLIY WA.......S
IGKV4-1*01        DIVMTQSPDSLAVSLGERATINCKSS QSVLYSSNNKNY LAWYQQKPGQPPKLLIY WA.......S
                    S   S     A  KV MS                        S
Priority            3   2     3  33 22                        2

VL1               DIVMTQSPDSLAVSLGERATINCKSS QSLFNSRTRKNY LAWYQQKPGQPPKLLIY WA.......S
VL3               DIVMTQSPDSLAVSLGERATINCKSS QSLFNSRTRKNY LAWYQQKPGQPPKLLIY WA.......S
VL2               DIVMTQSPSSLAVSLGERATMSCKSS QSLFNSRTRKNY LAWYQQKPGQSPKLLIY WA.......S

                                FR3-IMGT                        CDR3-IMGT  FR4-IMGT
                                (66-104)                        (106-113)  (114-123)
                    70        80        90        100
                    ....|.....|.....|.....|.....|....
515H7 VL          ARDSGVP.ARFTGSG..SETYFTLTISRVQAEDLAVYYC MQSFNLRT FGQGTKVEIK
IGKV4-1*01        TRESGVP.DRFSGSG..SGTDFTLTISSLQAEDVAVYYC
IGKJ1*01                                                  WT FGQGTKVEIK
                  A D     A  T      E Y      RV    L
Priority          1 1     2  1      1 1      22    2

VL1               TRESGVP.DRFSGSG..SGTDFTLTISSLQAEDVAVYYC MQSFNLRT FGQGTKVEIK
VL3               ARDSGVP.DRFTGSG..SETYFTLTISSLQAEDVAVYYC MQSFNLRT FGQGTKVEIK
VL2               ARDSGVP.ARFTGSG..SETYFTLTISRVQAEDLAVYYC MQSFNLRT FGQGTKVEIK
```

**FIGURE 22**

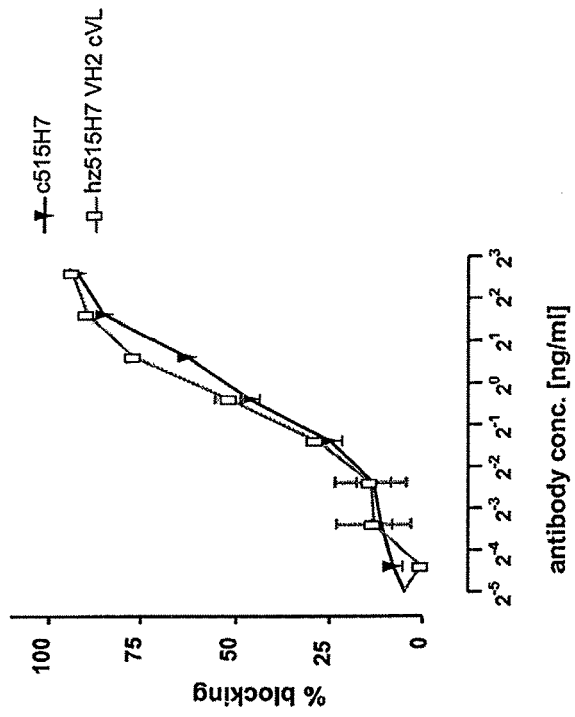



FIGURE 23B

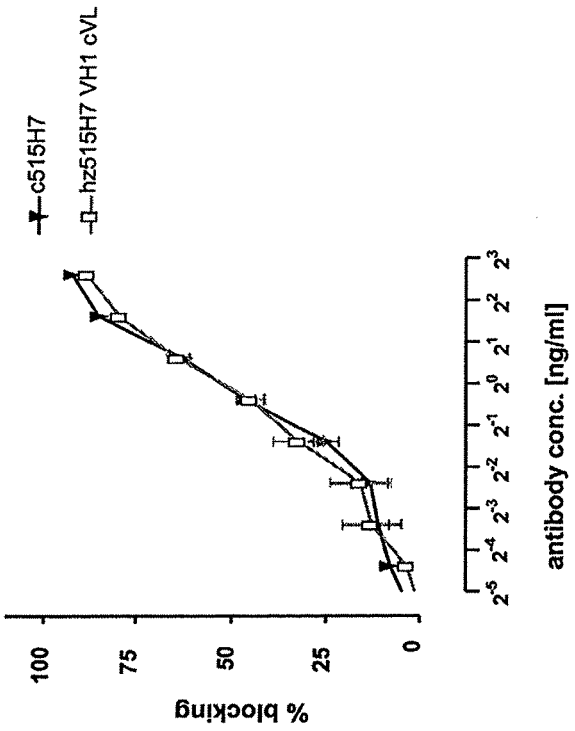



FIGURE 23A

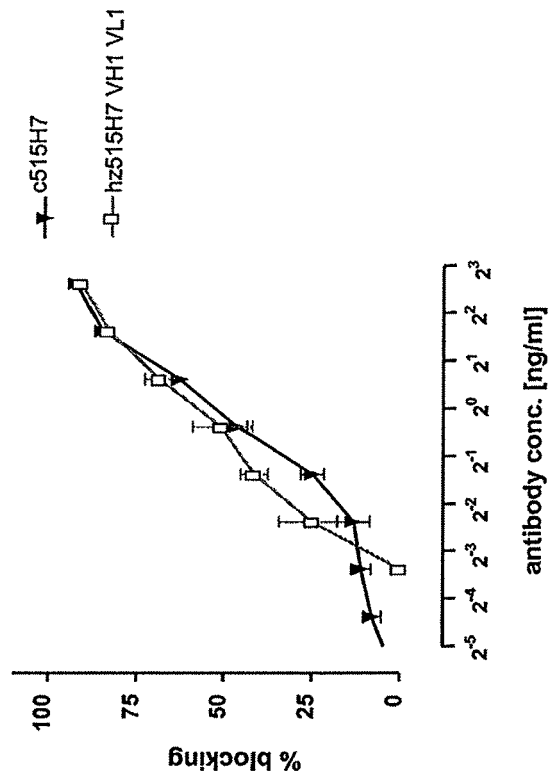



FIGURE 23D

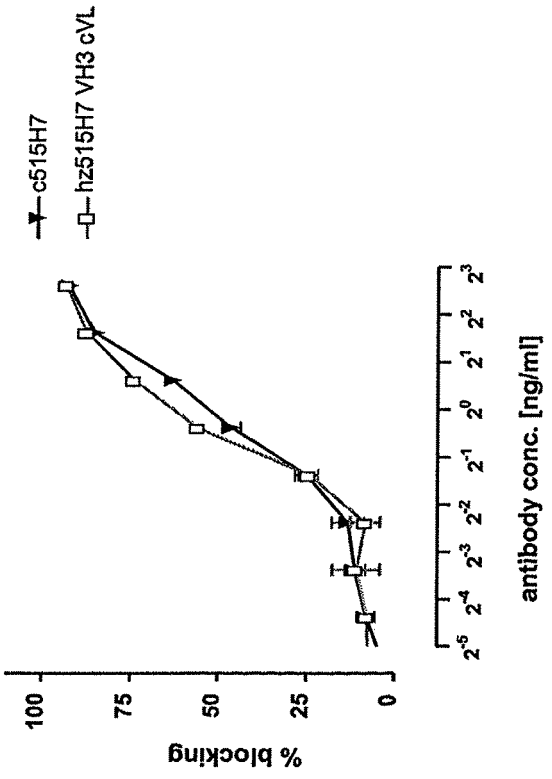



FIGURE 23C

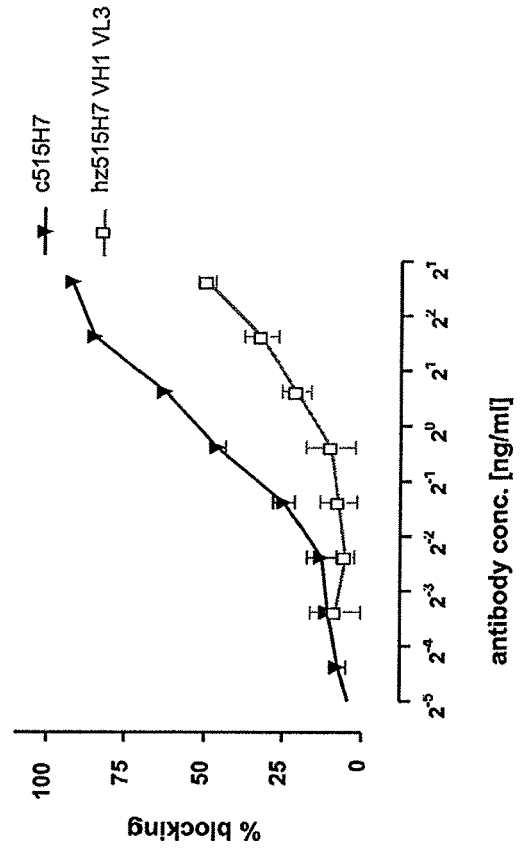



FIGURE 23F

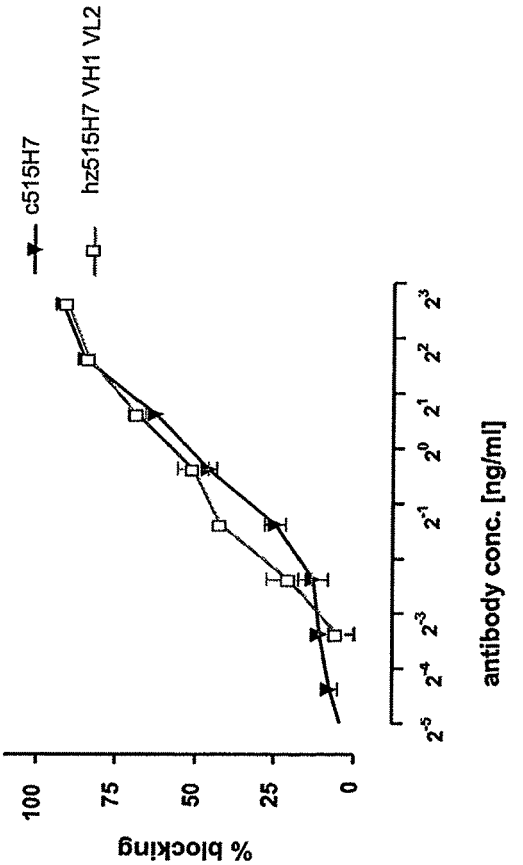



FIGURE 23E

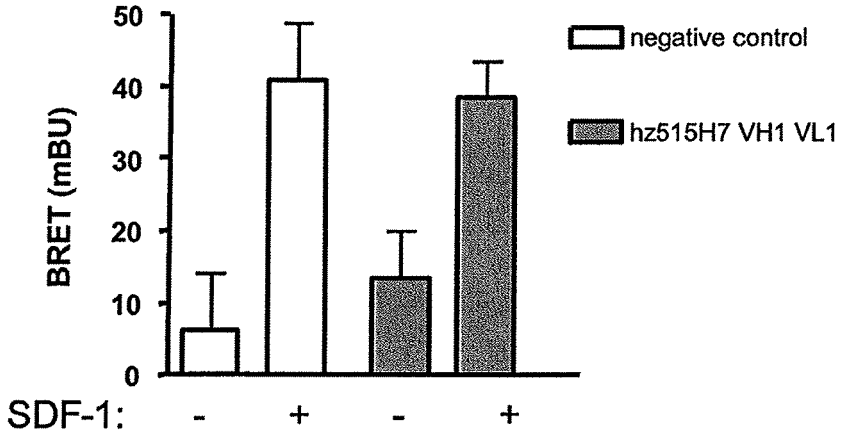

50
40
30
20
10
0
BRET (mBU)
negative control
hz515H7 VH1 VL1
SDF-1:
-
+
-
+

FIGURE 24

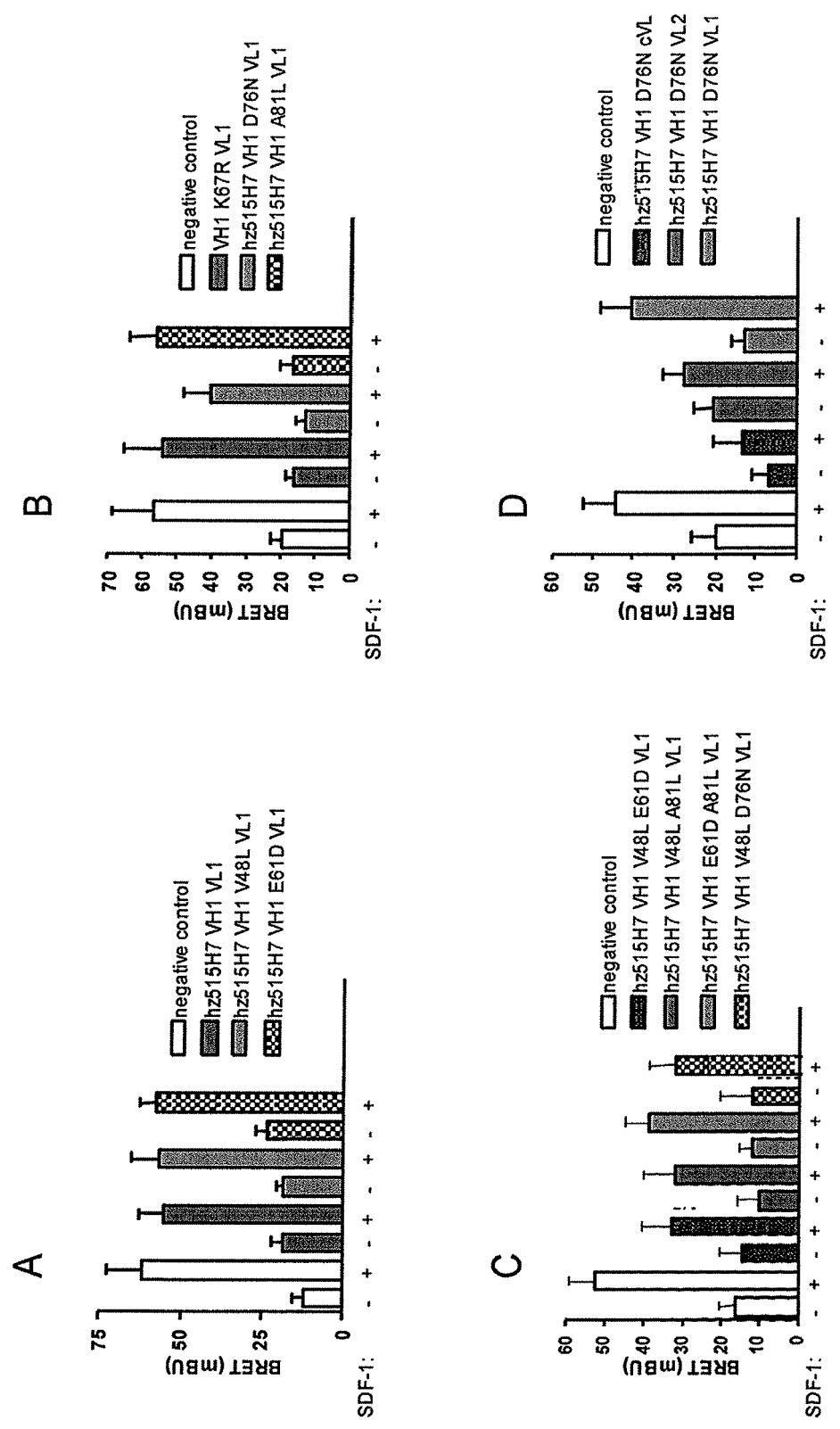



FIGURE 25A – FIGURE 25C

FIGURE 25B – FIGURE 25D

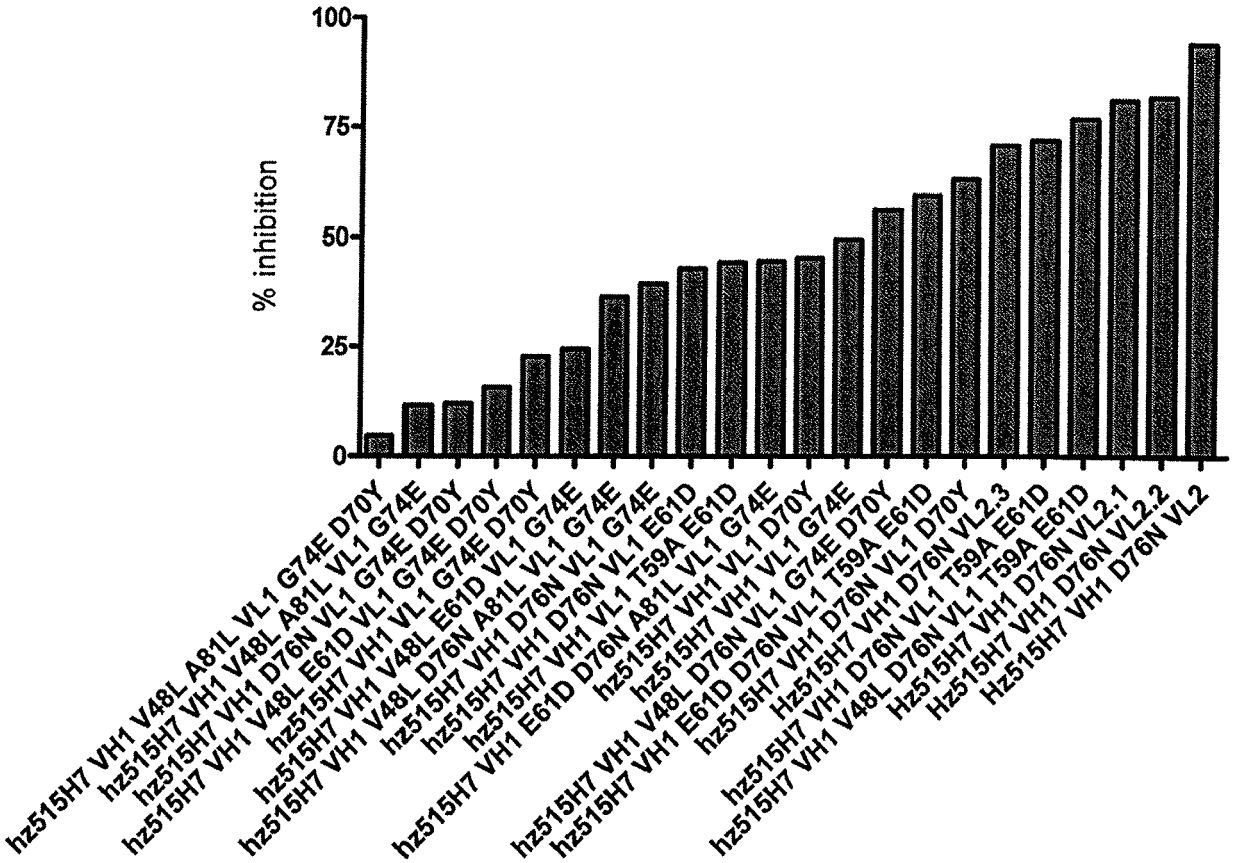

100
75
50
25
0
% inhibition
hz515H7 VH1 V48L A81L VL1 G74E D70Y
hz515H7 VH1 V48L A81L VL1 G74E
hz515H7 VH1 D76N VL1 G74E D70Y
hz515H7 VH1 V48L E61D VL1 G74E D70Y
hz515H7 VH1 V48L D76N A81L VL1 G74E
hz515H7 VH1 D76N VL1 E61D
hz515H7 VH1 E61D D76N A81L VL1 G74E
hz515H7 VH1 V48L D76N VL1 G74E D70Y
hz515H7 VH1 D76N VL1 T59A E61D
hz515H7 VH1 V48L D76N VL1 G74E
hz515H7 VH1 D76N VL1 D70Y
hz515H7 VH1 V48L D76N VL1 T59A E61D
hz515H7 VH1 D76N VL1 G74E D70Y
hz515H7 VH1 V48L D76N VL1 D70Y
Hz515H7 VH1 D76N VL1 T59A E61D
hz515H7 VH1 D76N VL2.3
Hz515H7 VH1 D76N VL1 T59A E61D
hz515H7 VH1 V48L D76N VL2.1
Hz515H7 VH1 D76N VL2.2
Hz515H7 VH1 D76N VL2

**FIGURE 26**

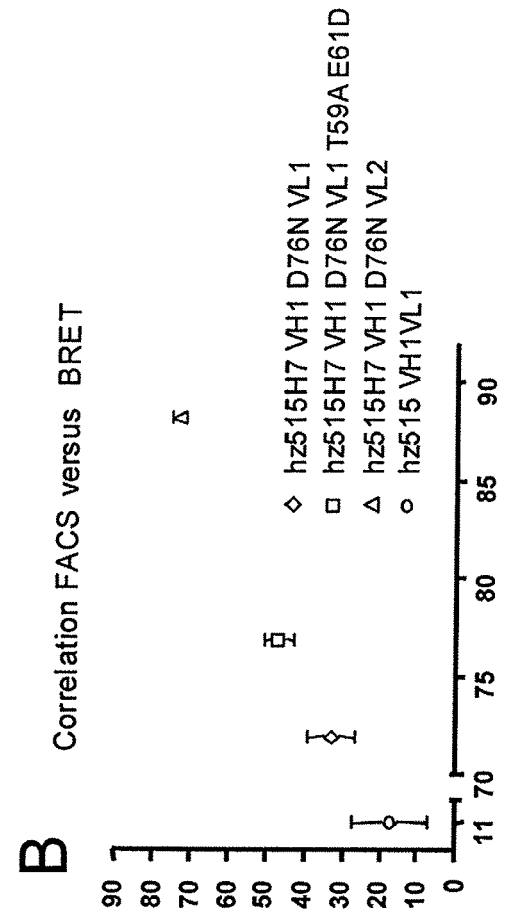



FIGURE 27B

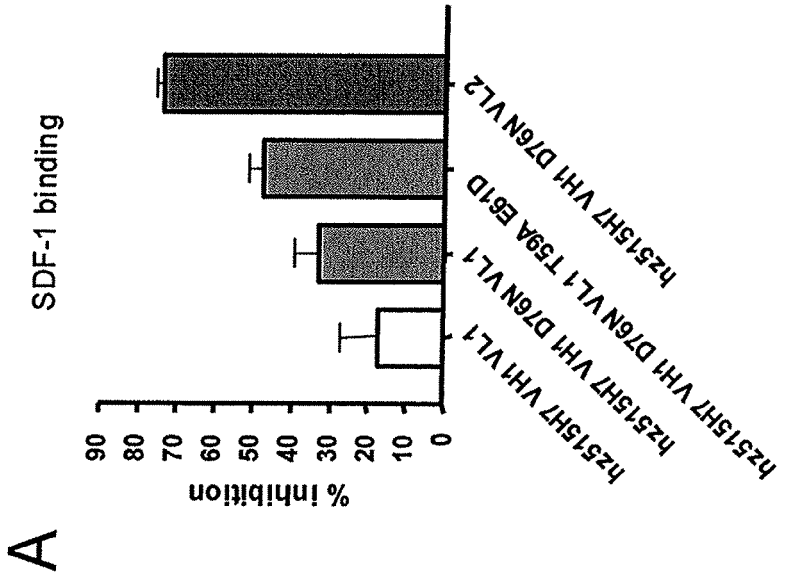



FIGURE 27A

| | FR1-IMGT (1-26) | | | CDR1-IMGT (27-38) | FR2-IMGT (39-55) | | | CDR2-IMGT (56-65) |
|---|---|---|---|---|---|---|---|---|
| | 1 | 10 | 20 | 30 | 40 | 50 | | 60 |
| 515H7 VL | DIVMSQSPSSLAVSAGEKVTMSCKSS | | | QSLFNSRTRKNY | LAWYQQKPGQSPKLLIY | | | WA.....S |
| IGKV4-1*01 | DIVMTQSPDSLAVSLGERATINCKSS | | | QSVLYSSNNKNY | LAWYQQKPGQPPKLLIY | | | WA.....S |
| VL2 | DIVMTQSPSSLAVSLGERATMSCKSS | | | QSLFNSRTRKNY | LAWYQQKPGQSPKLLIY | | | WA.....S |
| VL2.1 | DIVMTQSPDSLAVSLGERATMSCKSS | | | QSLFNSRTRKNY | LAWYQQKPGQPPKLLIY | | | WA S |
| VL2.2 | DIVMTQSPDSLAVSLGERATMSCKSS | | | QSLFNSRTRKNY | LAWYQQKPGQPPKLLIY | | | WA S |
| VL2.3 | DIVMTQSPDSLAVSLGERATMSCKSS | | | QSLFNSRTRKNY | LAWYQQKPGQPPKLLIY | | | WA S |

| | FR3-IMGT (66-104) | | | | CDR3-IMGT (106-113) | FR4-IMGT (114-123) |
|---|---|---|---|---|---|---|
| | 70 | 80 | 90 | 100 | | |
| 515H7 VL | ARDSGVP.ARFTGSG..SETYFTLTISRVQAEDLAVYYC | | | | MQSFNLRT | FGQGTKVEIK |
| IGKV4-1*01 | TRESGVP.DRFSGSG..SGTDFTLTISSLQAEDVAVYYC | | | | | |
| IGKJ1*01 | | | | | WT | FGQGTKVEIK |
| VL2 | ARDSGVP.ARFTGSG..SETYFTLTISRVQAEDLAVYYC | | | | MQSFNLRT | FGQGTKVEIK |
| VL2.1 | ARDSGVP DRFSGSG SETYFTLTISRVQAEDLAVYYC | | | | MQSFNLRT | FGQGTKVEIK |
| VL2.2 | ARDSGVP DRFTGSG SETYFTLTISRVQAEDVAVYYC | | | | MQSFNLRT | FGQGTKVEIK |
| VL2.3 | ARDSGVP DRFTGSG SETYFTLTISSLQAEDLAVYYC | | | | MQSFNLRT | FGQGTKVEIK |

FIGURE 28

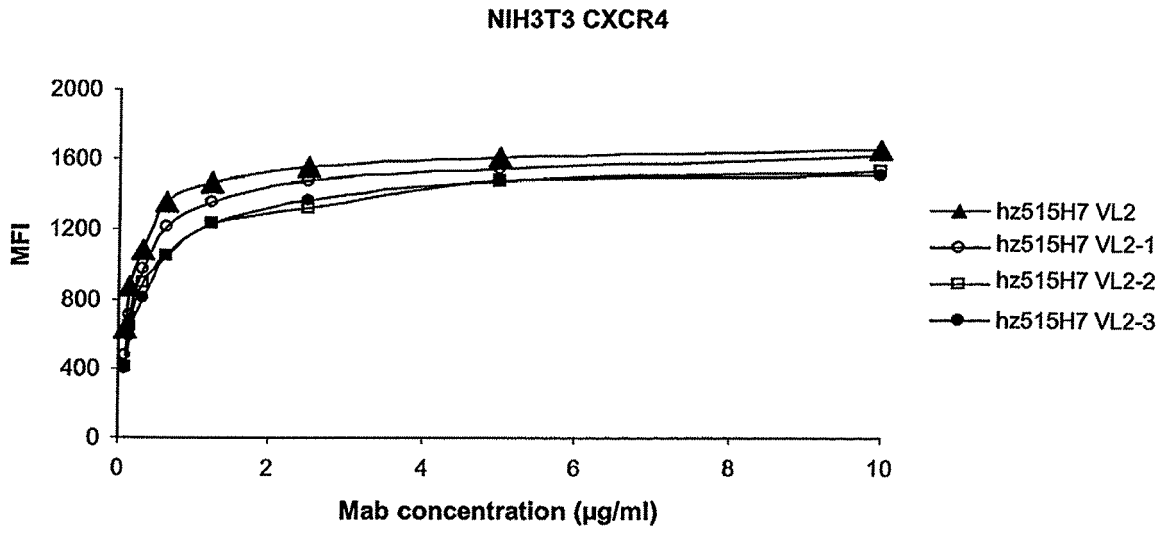



FIGURE 29A

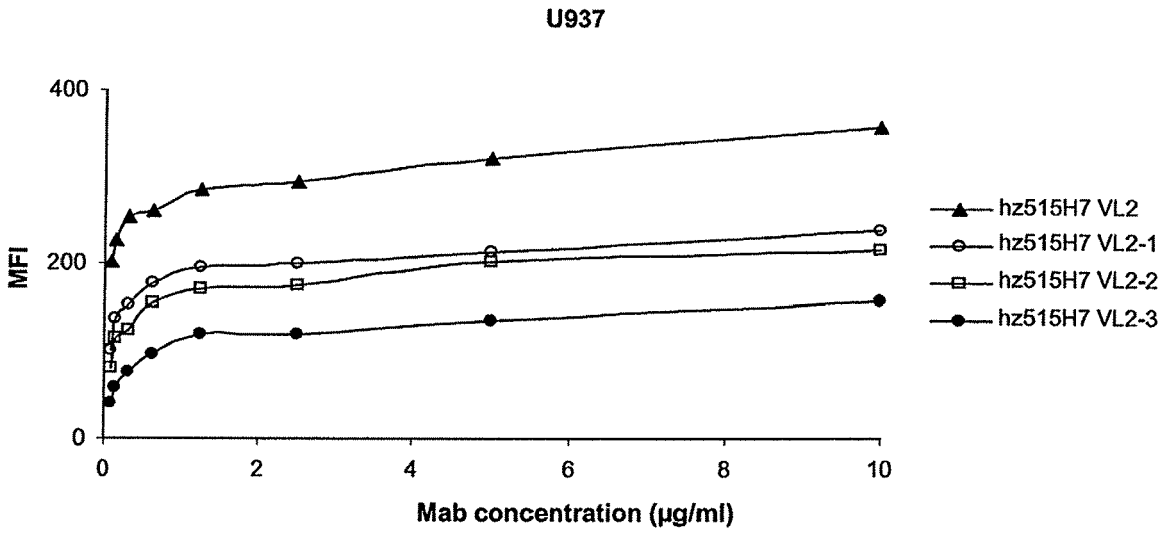



FIGURE 29B

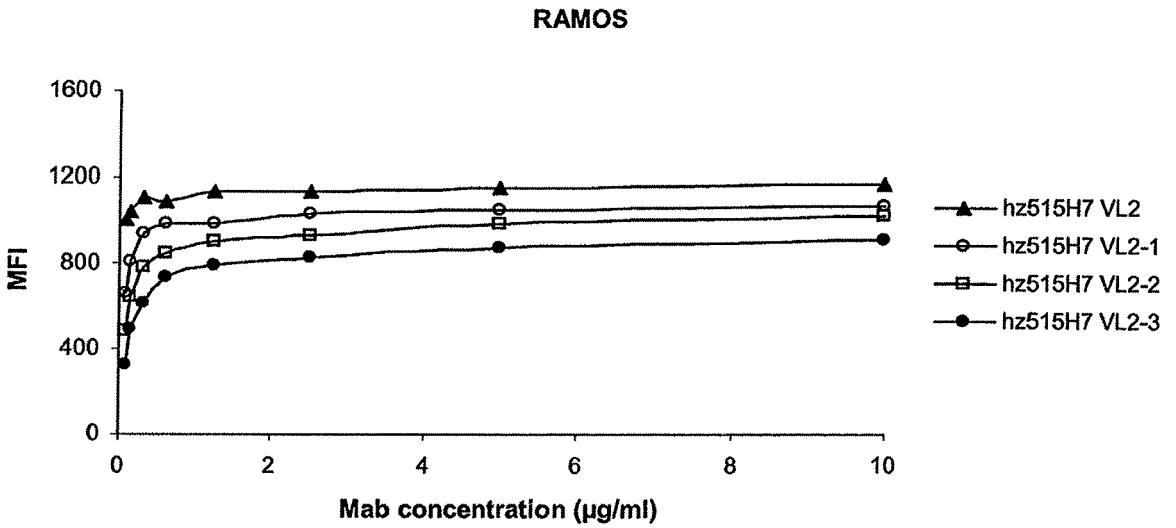



FIGURE 29C

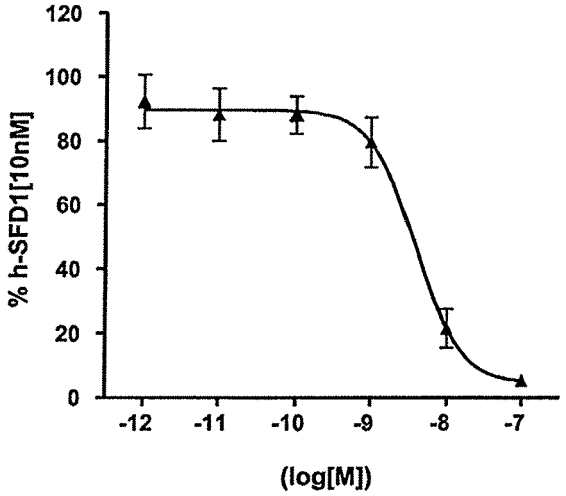



FIGURE 30A

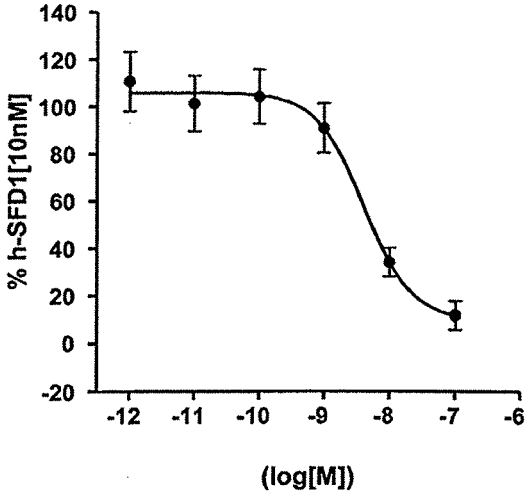



FIGURE 30B

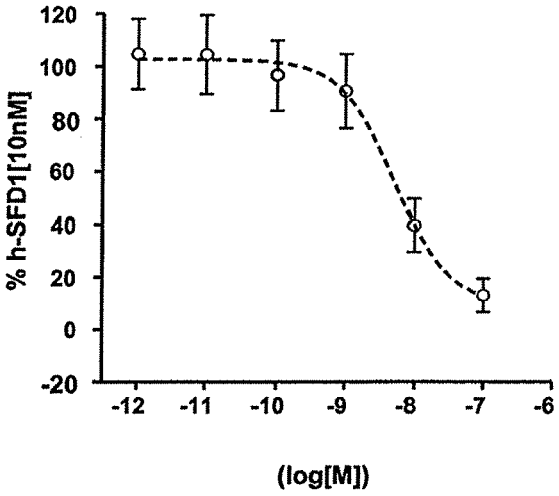



Figure 30C

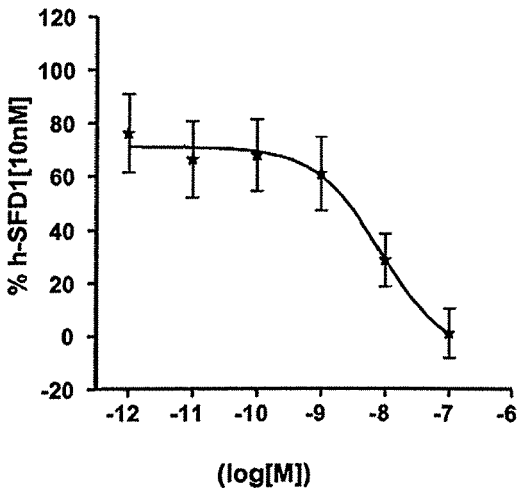



Figure 30D

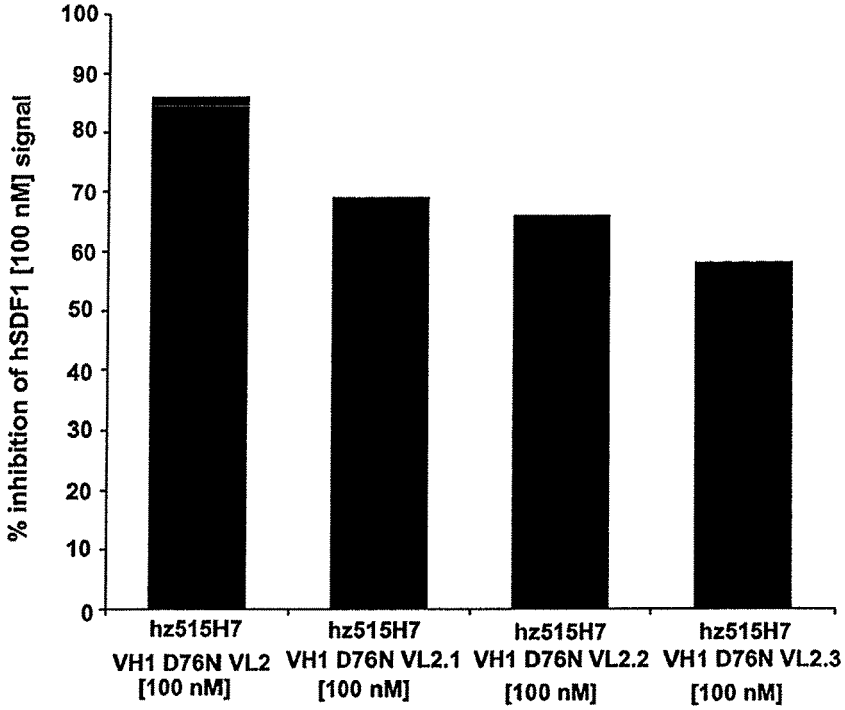



FIGURE 31

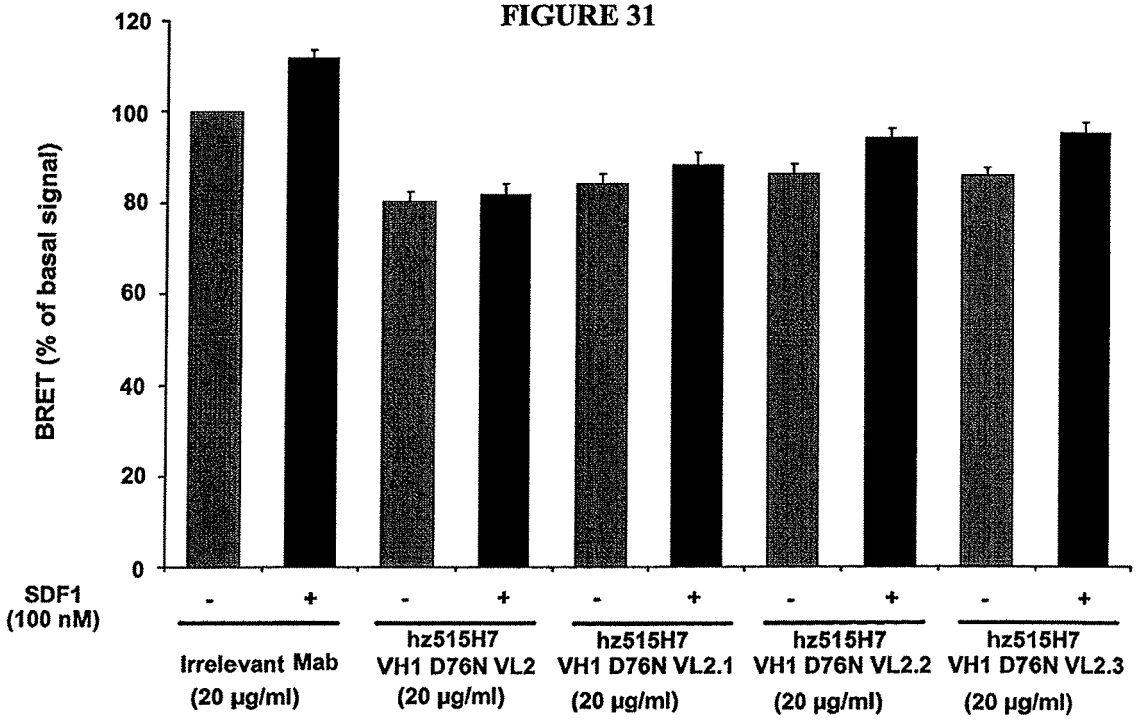



FIGURE 32A

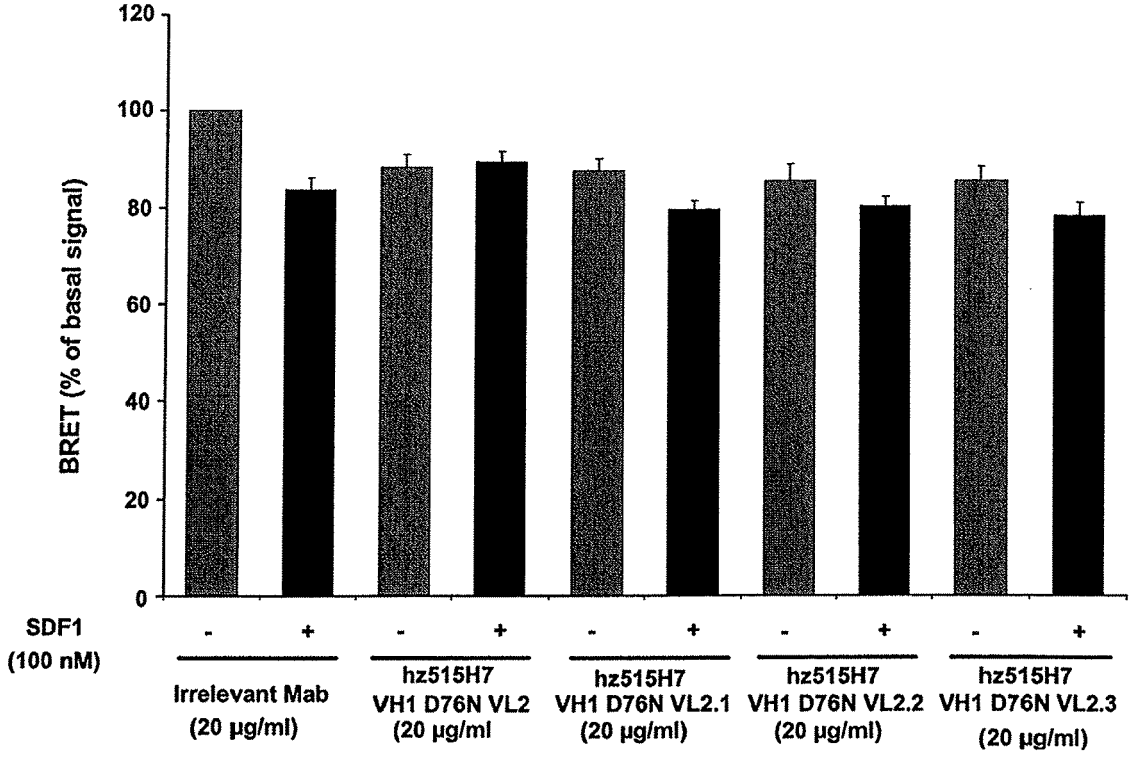



FIGURE 32B

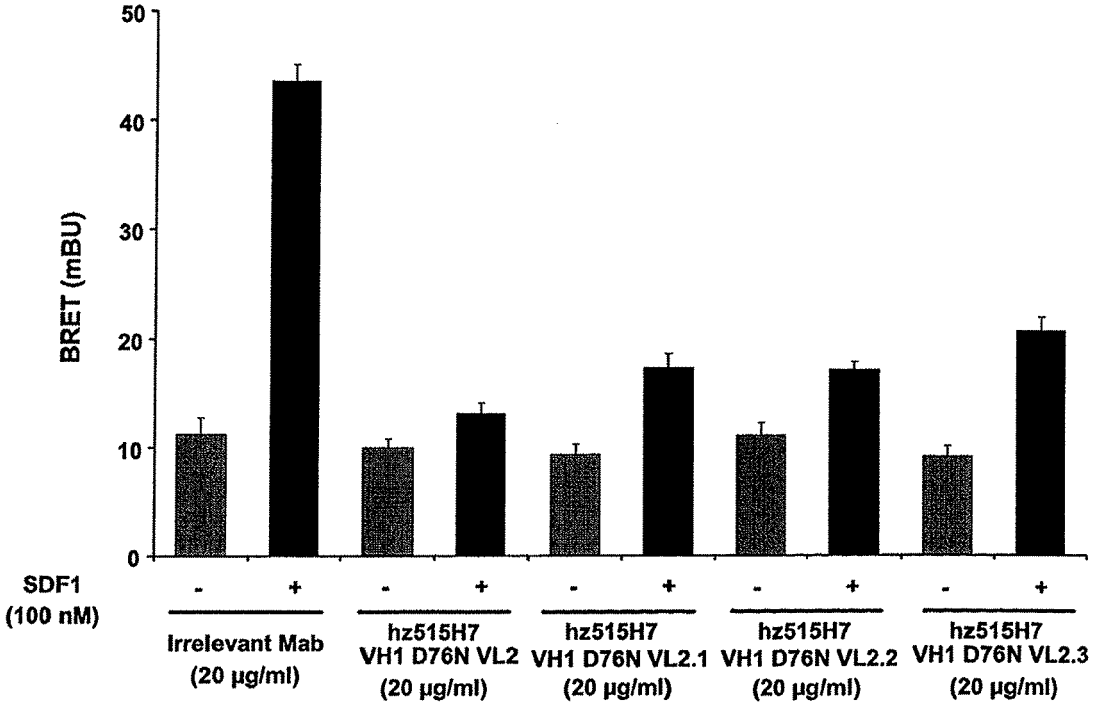



FIGURE 32C

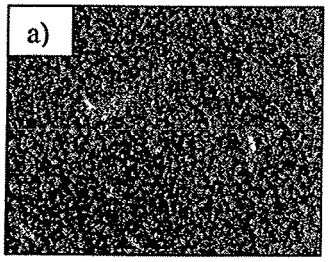



Figure 33A

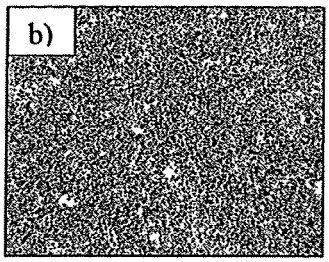



Figure 33B

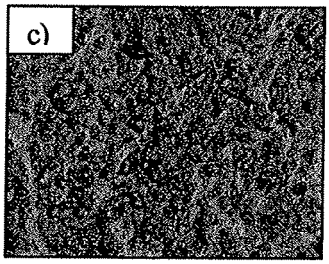



Figure 33C

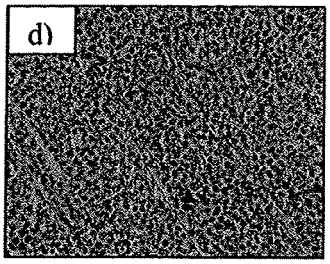



Figure 33D

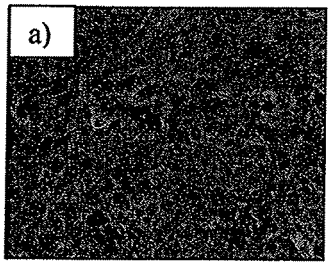



Figure 34A

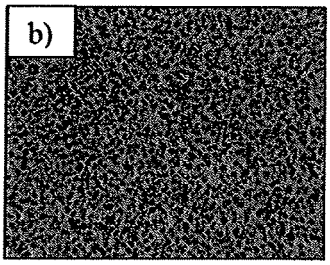



Figure 34B

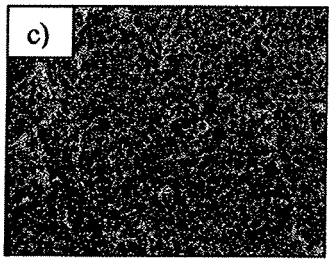



Figure 34C

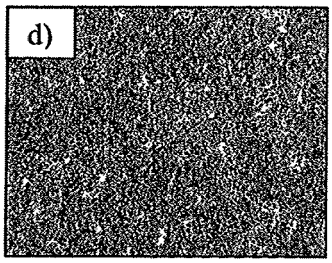



Figure 34D

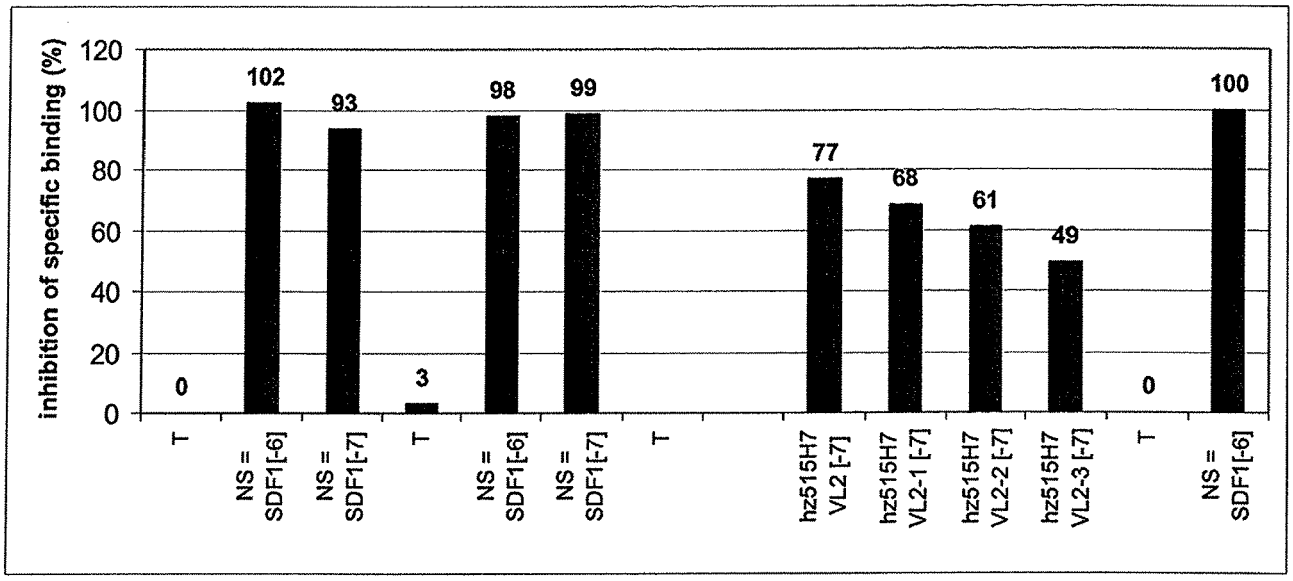



Figure 35A

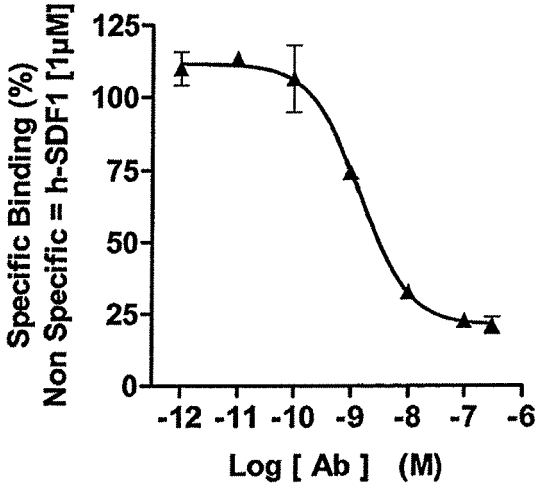



Figure 35B

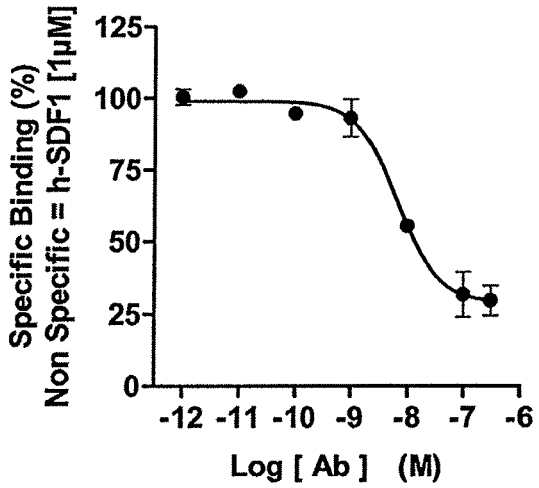



Figure 35C

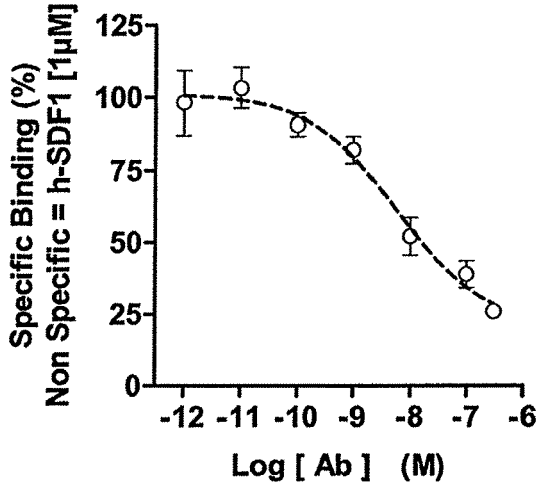



Figure 35D

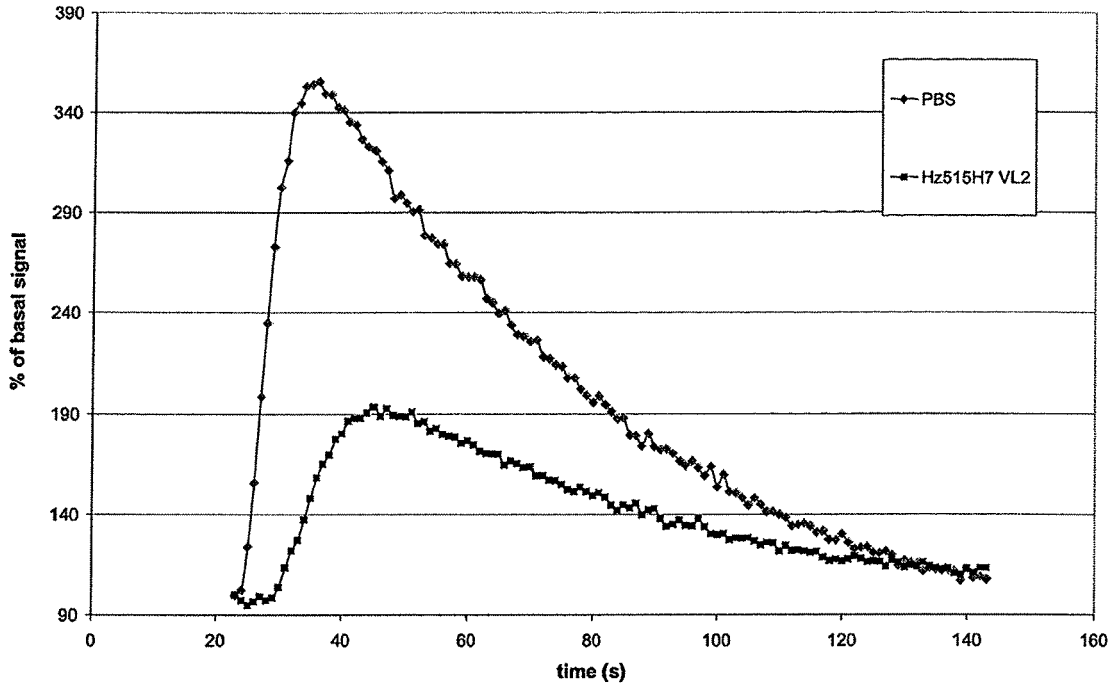



Figure 36

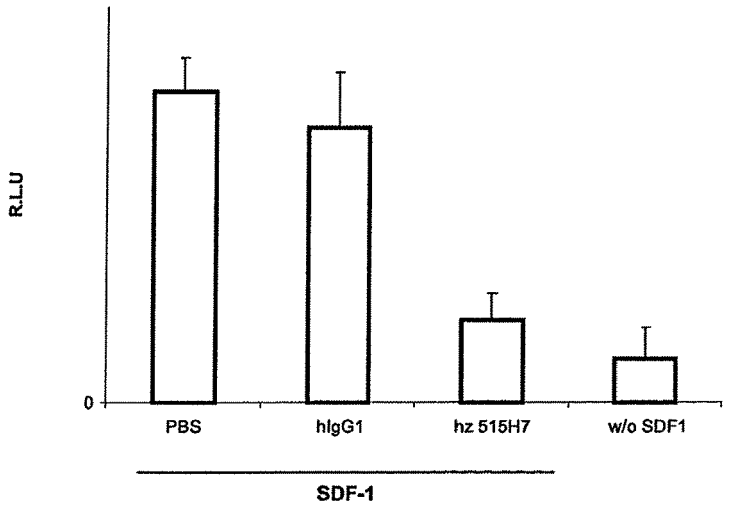



Figure 37A

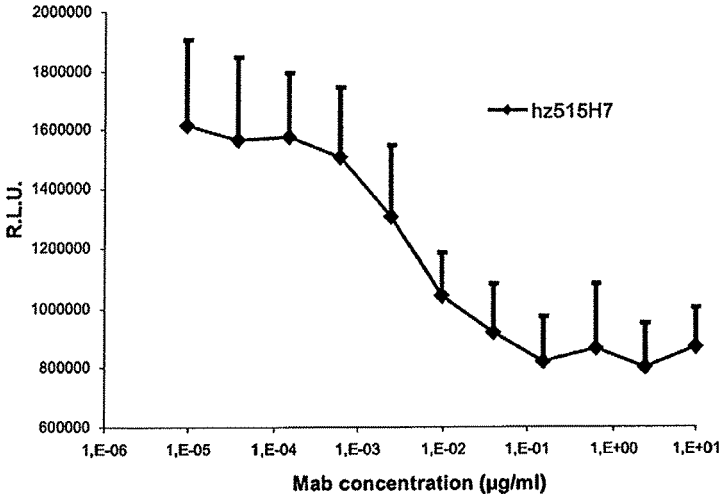



Figure 37B

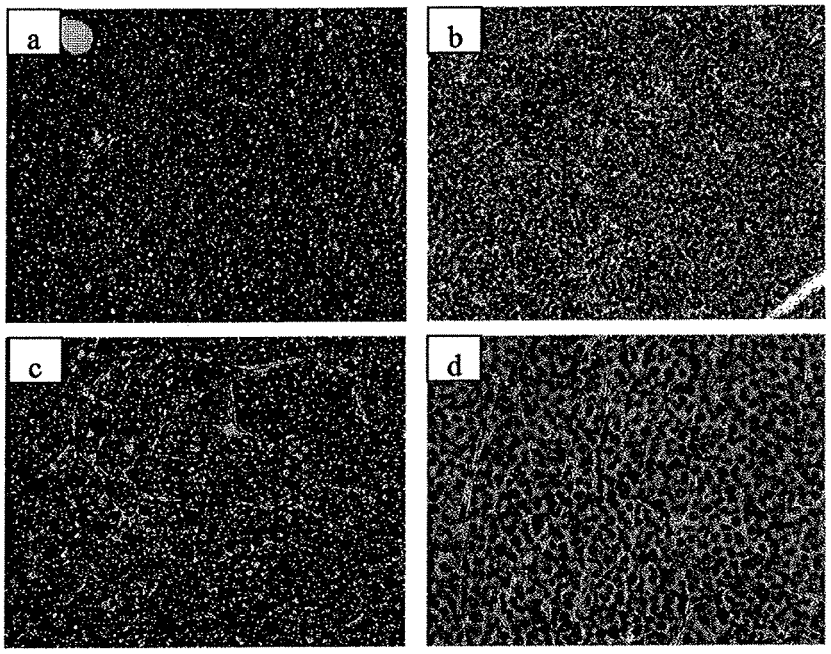



Figure 38

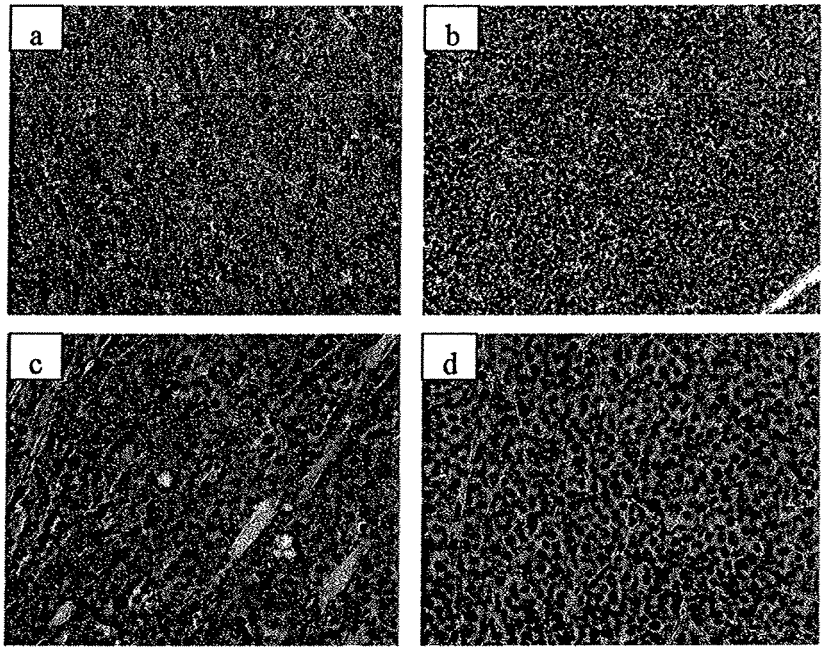



Figure 39

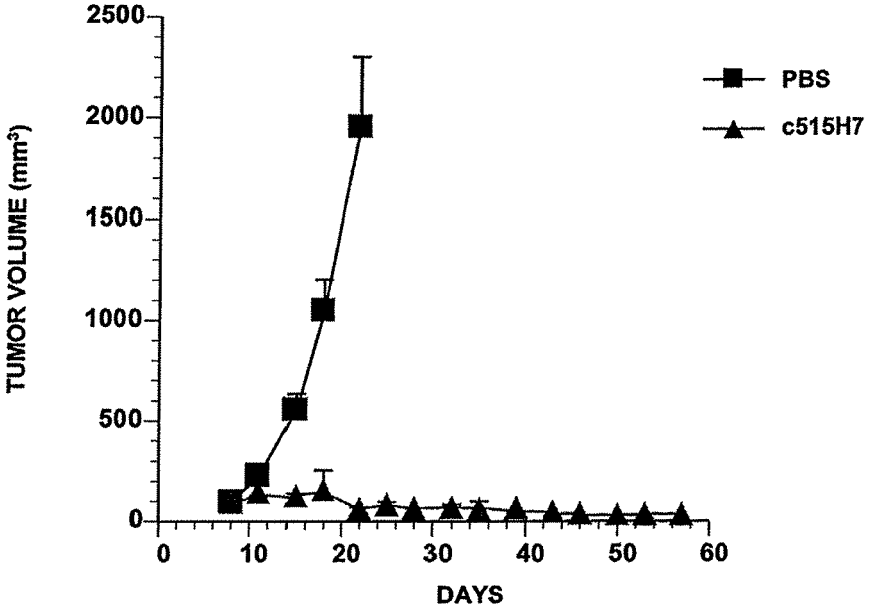



Figure 40

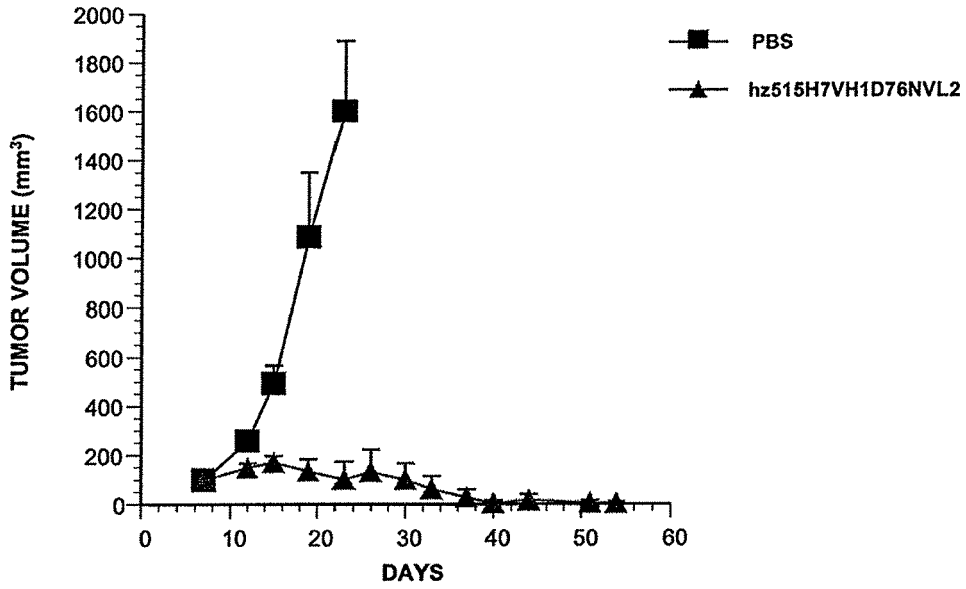



Figure 41

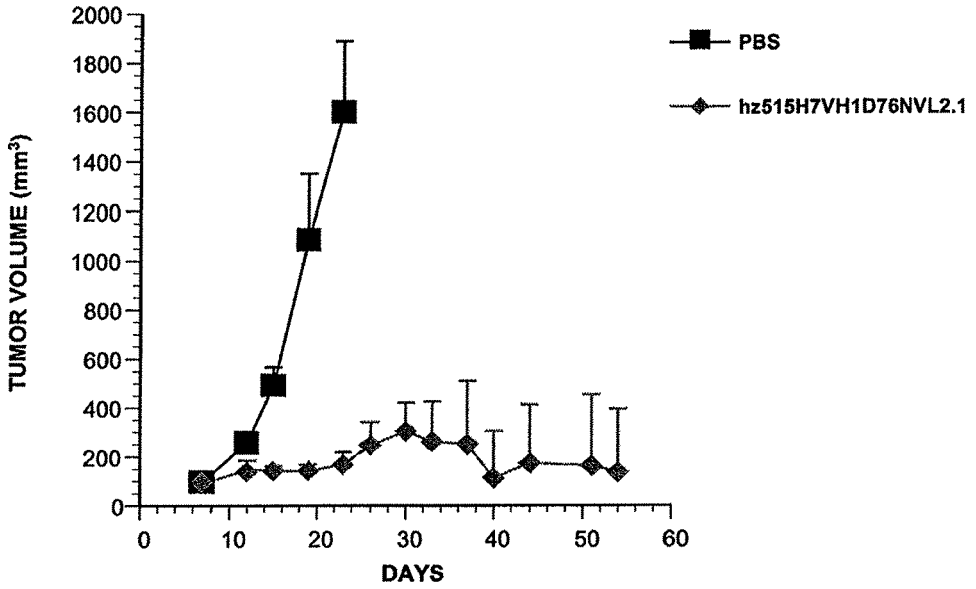



Figure 42