

Figure 1a

```

FG129_29H      -19 .M. .L. .L. .G.
                  atg ctg ttg ggg

                  LEADER
FG129_29H      .L. .K. .W. .V. .F. .F. .V. .V. .F. .Y. .Q. .G. .V. .H. .C.
                  ctg aag tgg gtt ttc ttt gtt gtt ttt tat caa ggt gtg cat tgt

                  <----- FR1 - IMGT ----->
FG129_29H      1  E  V  Q  L  V  E  S  G  G      G  L  V  Q  P
                  gag gtg cag ctt gtt gag tct ggt gga ... gga ttg gtg cag cct

                  ----- FR1 - IMGT -----> CDR1 - IMGT
FG129_29H      16  K  G  S  L  K  L  S  C  A  A  S  G  F  T  F
                  aaa ggg tca ttg aaa ctc tca tgt gca gcc tct gga ttc acc ttc

                  CDR1 - IMGT
FG129_29H      31  ---
                  ... .. . . . aat acc tac gcc atg aac tgg gtc cgc cag gct

                  <----- FR2 - IMGT ----->
FG129_29H      46  P  G  K  G  L  E  W  V  A  R  I  R  S  K  S
                  cca gga aag ggt ttg gaa tgg gtt gct cgc ata aga agt aaa agt

                  CDR2 - IMGT <-----> FR3 - IMGT
FG129_29H      61  N  N  Y  A  T  Y  Y  A  D  S  V  K  D  R
                  aat aat tat gca aca tat tat gcc gat tca gtg aaa ... gac agg

                  ----- FR3 - IMGT -----

```

Figure 1a continued

```

76 F T I S R D D S Q S M L Y L Q
   ttc acc ata tcc aga gat gat tca caa agc atg etc tat ctg caa
FG129_29H

----- FR3 - IMGT ----->
91 M N N L K K E D T A M Y Y C V
   atg aac aac ttg aaa aag gag gac aca gcc atg tat tac tgt gta
FG129_29H

----- CDR3 - IMGT -----
106 G Y G S G G N Y W G Q G
   ggg tac ggt agt ggg gga aac tac tgg ggt caa gga ... ..
FG129_29H

121 T S V .T. .V. .S. .S. A K T T P P S V
   acc tca gtc acc gtc tcc tcc tca gcc aaa acg aca ccc cca tct gtc
FG129_29H

136 Y P L A P G C S A A Q T N S M V
   tat cca ctg gcc cct gga tct gct gcc caa act aac tcc atg gtg
FG129_29H

151 T L G C L V K G Y F P E P V T
   acc ctg gga tgc ctg gtc aag ggc tat ttc cct gag cca gtg aca
FG129_29H

166 V T W N S G S L S S C V H T F
   gtg acc tgg aac tot gga tcc ctg tcc agc ggt gtg cac acc ttc
FG129_29H

181 P A V L E S D L Y T L S S S V
   cca gct gtc ctg gag tct gac ctc tac act ctg agc agc tca gtg
FG129_29H

196 T V P S S P R P S E T V T C N
   act gtc ccc tcc agc cct cgg ccc agc gag acc gtc acc tgc aac
FG129_29H

211 V A H P A S S T K V D K K I V
   gtt gcc cac ccg gcc agc agc acc aag gtg gac aag aaa att gtg
FG129_29H

226 P R D C G C K P C I C T V P E

```

Figure 1a continued

```

FG129_29H      ccc agg gat tgt ggt tgt aag cct tgc ata tgt aca gtc cca gaa
241 V S S V F I F P P K P K D V L
FG129_29H      gta tca tct gtc ttc atc ttc ccc cca aag ccc aag gat gtg ctc
256 T I T L T P K V T C V V D I
FG129_29H      acc att act ctg act cct aag gtc acg tgt gtt gtg gta gac atc
271 S K D D P E V Q F S W F V D D
FG129_29H      agc aag gat gat ccc gag gtc cag ttc agc tgg ttt gta gat gat
286 V E V H T A Q T Q P R E E Q F
FG129_29H      gtg gag gtg cac aca gct cag acg caa ccc cgg gag gag cag ttc
301 N S T F R S V S E L P I M H Q
FG129_29H      aac agc act ttc cgc tca gtc agt gaa ctt ccc atc atg cac cag
316 D W L N G K E F K C R V N S A
FG129_29H      gac tgg ctc aat ggc aag gag ttc aaa tgc agg gtc aac agt gca
331 A F P A P I E K T I S K T K G
FG129_29H      gct ttc cct gcc ccc atc gag aaa acc atc tcc aaa acc aaa ggc
346 R P K A P Q V Y T I P P K E
FG129_29H      aga ccg aag gct cca cag gtg tac acc att cca cct ccc aag gag
361 Q M A K D K V S L T C M I T D
FG129_29H      cag atg gcc aag gat aaa gtc agt ctg acc tgc atg ata aca gac
376 F F P E D I T V E W Q W N G Q
FG129_29H      ttc ttc cct gaa gac att act gtg gag tgg cag tgg aat ggg cag
391 P A E N Y K N T Q P I M N T N

```

Figure 1a continued

```

FG129_29H      cca gcg gag aac tac aag aac act cag ccc atc atg aac acg aat
406 G S Y F V Y S K L N V Q K S N
FG129_29H      gcc tct tac ttc gtc tac agc aag ctc aat gtg cag aag agc aac
421 W E A G N T F T C S V L H E G
FG129_29H      tgg gag gca gga aat act ttc acc tgc tct gtg tta cat gag ggc
436 L H N H H T E K S L S H S P G
FG129_29H      ctg cac aac cac cat act gag aag agc ctc tcc cac tct cct ggt
451 K
FG129_29H      aaa

```

Figure 1b

```

-20 M E S Q T
    atg gaa tca cag act

-15 Q V L M S L L F W V S G T C G
    cag gtc ctc atg tcc ctg ctg ttc tgg gta tct ggt acc tgt ggg
    FG129_29K

    LEADER
    <----- FR1 - IMGT ----->
    1 D I V M T Q S P S S L T V T A
      gac att gtg atg aca cag tct cca tcc tcc ctg act gtg aca gca
    FG129_29K

    ----- FR1 - IMGT -----> CDR1 - IMGT -----
    16 G E K V T M S C K S S Q S L L
      gga gag aag gtc act atg agc tgc aag tcc agt cag agt ctg tta
    FG129_29K

    CDR1 - IMGT -----> FR2 - IMGT -----
    31 N S G N Q K N Y L T W Y Q Q K
      aac agt gga aat caa aag aac tac ttg acc tgg tac cag cag aaa
    FG129_29K

    ----- FR2 - IMGT -----> CDR2 - IMGT -----
    46 P G Q P P K V L I Y W A
      cca ggg cag cct cct aaa gtg ttg atc tac tgg gca ... ..
    FG129_29K

    CDR2 - IMGT -----> FR3 - IMGT -----
    61 S T R E S G V P D R
      ... .. tcc act agg gaa tct ggg gtc cct ... gat cgc
    FG129_29K

    ----- FR3 - IMGT -----
    76 F T G S G S G T D F T L T
      ttc aca ggc agt gga ... .. tct gga aca gat ttc act etc acc
    FG129_29K

```

Figure 1b continued

```

----- FR3 - IMGT ----->
91 I S S V Q A E D L A V Y Y C Q
FG129_29K atc agc agt gtg cag gct gaa gac ctg gca gtt tat tac tgt cag

----- CDR3 - IMGT -----
106 N D Y S S P F T F G S G T K L
FG129_29K aat gat tat agt tct cca ttc acg ttc ggc tcg ggg aca aag ttg

121 E I K R A D A A P T V S I F P
FG129_29K gaa ata aaa cgg gct gat gct gca cca act gta tcc atc ttc cca

136 P S S E Q L T S G G A S V V C
FG129_29K cca tcc agt gag cag tta aca tct gga ggt gcc tca gtc gtg tgc

151 F L N N F Y P K D I N V K W K
FG129_29K ttc ttg aac aac ttc tac occ aaa gac atc aat gtc aag tgg aag

166 I D G S E R Q N G V L N S W T
FG129_29K att gat ggc agt gaa cga cca aat ggc gtc ctg aac agt tgg act

181 D Q D S K D S T Y S M S S T L
FG129_29K gat cag gac agc aaa gac agc acc tac agc atg agc agc acc etc

196 T L T K D E Y E R H N S Y T C
FG129_29K acg ttg acc aag gac gag tat gaa cga cat aac agc tat acc tgt

211 E A T H K T S T S P I V K S F
FG129_29K gag gcc act cac aag aca tca act tca occ att gtc aag agc ttc

226 N R N E C
FG129_29K aac agg aat gag tgt

```

Figure 2a

```

Ch129_29H      -19 M L L C
                  atg ctg ttg ggg

Ch129_29H      LEADER
                  L K W V F V V F Y Q G V H C
                  ctg aag tgg gtt ttc ttt gtt gtt tat caa ggt gtg cat tgt

Ch129_29H      <----- FR1 - IMGT ----->
                  1 E V Q L V E S G G G L V Q P
                  gag gtg cag ctt gtt gag tct ggt gga ... gga ttg gtg cag cct

Ch129_29H      ----- FR1 - IMGT -----> CDR1 - IMGT
                  16 K G S L K L S C A A S G F T F
                  aaa ggg tca ttg aaa ctc tca tgt gca gcc tct gga ttc acc ttc

Ch129_29H      ----- CDR1 - IMGT -----> FR2 - IMGT --
                  31 N T Y A M N W V R Q A
                  ... .. aat acc tac gcc atg aac tgg gtc cgc cag gct

Ch129_29H      ----- FR2 - IMGT -----> CDR2 - IMGT
                  46 P G K G L E W V A R I R S K S
                  cca gga aag ggt ttg gaa tgg gtt gct cgc ata aga agt aaa agt

Ch129_29H      ----- CDR2 - IMGT -----> FR3 - IMGT -----
                  61 N N Y A T Y Y A D S V K D R
                  aat aat tat gca aca tat tat gcc gat tca gtg aaa ... gac agg

Ch129_29H      ----- FR3 - IMGT -----

```

Figure 2a continued

```

76 F T I S R D S Q S M L Y L Q
Ch129_29H ttc acc ata tcc aga gat gat tca caa agc atg ctc tat ctg caa

----- FR3 ~ IMGT ----->
91 M N N L K K E D T A M Y Y C V
Ch129_29H atg aac aac ttg aaa aag gag gac aca gcc atg tat tac tgt gta

----- CDR3 ~ IMGT -----
106 G Y G S G G N Y W G Q G
Ch129_29H ggg tac ggt agt ggg gga aac tac tgg ggt caa gga ... ..

121 T S V T V S S A S T K G P S V
Ch129_29H acc tca gtc acc gtc tcc agc gct tcc acc aag ggc cca tcg gtc

136 F P L A P S S K S T S G G T A
Ch129_29H ttc ccc ctg gca ccc tcc tcc aag agc acc tct ggg ggc aca gcg

151 A L G C L V K D Y F P E P V T
Ch129_29H gcc ctg ggc tgc ctg gtc aag gac tac ttc ccc gaa ccg gtg acg

166 V S W N S G A L T S G V H T F
Ch129_29H gtg tcg tgg aac tca ggc gcc ctg acc agc ggc gtg cac acc ttc

181 P A V L Q S S G L Y S L S S V
Ch129_29H ccg gct gtc cta cag tcc tca gga ctc tac tcc ctc agc agc gtg

196 V T V P S S S L G T Q T Y I C
Ch129_29H gtg acc gtg ccc tcc agc agc ttg ggc acc cag acc tac atc tgc

211 N V N H K P S N T K V D K K V
Ch129_29H aac gtg aat cac aag ccc agc aac acc aag gtg gac aag aaa gtt

226 E P K S C D K T H T C P C P

```

Figure 2a continued

Ch129_29H gag ccc aaa tct tgt gac aaa act cac aca tgc cca cgg tgc cca
 241 A P E L L G G P S V F L F P P
 Ch129_29H gca cct gaa ctc ctg ggg gga cgg tca gtc ttc ctc ttc ccc cca
 256 K P K D T L M I S R T P E V T
 Ch129_29H aaa ccc aag gac acc ctc atg atc tcc cgg acc cct gag gtc aca
 271 C V V V D V S H E D P E V K F
 Ch129_29H tgc gtg gtg gtg gac gtg agc cac gaa gac cct gag gtc aag ttc
 286 N W Y V D G V E V H N A K T K
 Ch129_29H aac tgg tac gtg gac ggc gtg gag gtg cat aat gcc aag aca aag
 301 P R E E Q Y N S T Y R V V S V
 Ch129_29H ccg cgg gag gag cag tac aac agc acg tac cgt gtg gtc agc gtc
 316 L T V L H Q D W L N G K E Y K
 Ch129_29H ctc acc gtc ctg cac cag gac tgg ctg aat ggc aag gag tac aag
 331 C K V S N K A L P A P I E K T
 Ch129_29H tgc aag gtc tcc aac aaa gcc ctc cca gcc ccc atc gag aaa acc
 346 I S K A K G Q P R E P Q V Y T
 Ch129_29H atc tcc aaa gcc aaa ggg cag ccc cga gaa cca cag gtg tac acc
 361 L P P S R D E L T K N Q V S L
 Ch129_29H ctg ccc cca tcc cgg gat gag ctg acc aag aac cag gtc agc ctg
 376 T C L V K G F Y P S D I A V E
 Ch129_29H acc tgc ctg gtc aaa ggc ttc tat ccc agc gac atc gcc gtg gag
 391 W E S N G Q P E N N Y K T T P

Figure 2a continued

```

Ch129_29H      tgg gag agc aat ggg cag ccg gag aac aac tac aag acc acg cct
                406 P   V   L   D   S   D   G   S   F   F   L   Y   S   K   L
Ch129_29H      ccc gtg ctg gac tcc gac ggc tcc ttc ttc ctc tac agc aag ctc
                421 T   V   D   K   S   R   W   Q   Q   G   N   V   F   S   C
Ch129_29H      acc gtg gac aag agc agg tgg cag cag ggg aac gtc ttc tca tgc
                436 S   V   M   H   E   A   L   H   N   H   Y   T   Q   K   S
Ch129_29H      tcc gtg atg cat gag gct ctg cac aac cac tac acg cag aag agc
                451 L   S   L   S   P   G   K
Ch129_29H      ctc tcc ctg tct ccg ggt aaa

```

Figure 2b

```

-20 M E S Q T
    atg gaa tca cag act

Ch129_29K
-15 Q V L M S L L F W V S G T C G
    cag gtc ctc atg tcc ctg ctg ttc tgg gta tct ggt acc tgt ggg

Ch129_29K
<----- FR1 - IMGT ----->
  1 D I V M T Q S P S S L T V T A
    gac att gtg atg aca cag tct cca tcc tcc ctg act gtg aca gca

Ch129_29K
----- FR1 - IMGT -----> CDR1 - IMGT
 16 G E K V T M S C K S S Q S L L
    gga gag aag gtc act atg agc tgc aag tcc agt cag agt ctg tta

Ch129_29K
    CDR1 - IMGT <----- FR2 - IMGT ----->
 31 N S G N Q K N Y L T W Y Q Q K
    aac agt gga aat caa aag aac tac ttg acc tgg tac cag cag aaa

Ch129_29K
----- FR2 - IMGT -----> CDR2 - IMGT
 46 P G Q P P K V L I Y W A
    cca ggg cag cct cct aaa gtg ttg atc tac tgg gca ... ..

Ch129_29K
    CDR2 - IMGT <----- FR3 - IMGT ----->
 61 S T R E S G V P D R
    ... .. tcc act agg gaa tct ggg gtc cct ... gat cgc

Ch129_29K
----- FR3 - IMGT ----->

```

Figure 2b continued

```

76 F T G S G S G T D F T L T
Ch129_29K ttc aca ggc agt gga ... tct gga aca gat ttc act ctc acc

----- FR3 - INGT ----->
91 I S S V Q A E D L A V Y Y C Q
Ch129_29K atc agc agt gtg cag gct gaa gac ctg gca gtt tat tac tgt cag

          CDR3 - INGT
106 N D Y S S P F T F G S G T K L
Ch129_29K aat gat tat agt tct cca ttc acg ttc ggc tcg ggg aca aag ttg

121 E I K R T V A A P S V F I F P
Ch129_29K gaa ata aaa cgt acg gta gcg gcc cca tct gtc ttc atc ttc ccg

136 P S D E Q L K S G T A S V V C
Ch129_29K cca tct gat gag cag ttg aaa tct gga act gcc tct gtt gtg tgc

151 L L N N F Y P R E A K V Q W K
Ch129_29K ctg ctg aat aac ttc tat ccc aga gag gcc aaa gta cag tgg aag

166 V D N A L Q S G N S Q E S V T
Ch129_29K gtg gat aac gcc ctc caa tcg ggt aac tcc cag gag agt gtc aca

181 E Q D S K D S T Y S L S S T L
Ch129_29K gag cag gac agc aag gac agc acc tac agc ctc agc agc acc ctg

196 T L S K A D Y E K H K V Y A C
Ch129_29K acg ctg agc aaa gca gac tac gag aaa cac aaa gtc tac gcc tgc

211 E V T H Q G L S S P V T K S F
Ch129_29K gaa gtc acc cat cag ggc ctg agc tcg ccc gtc aca aag agc ttc

226 N R G E C

```

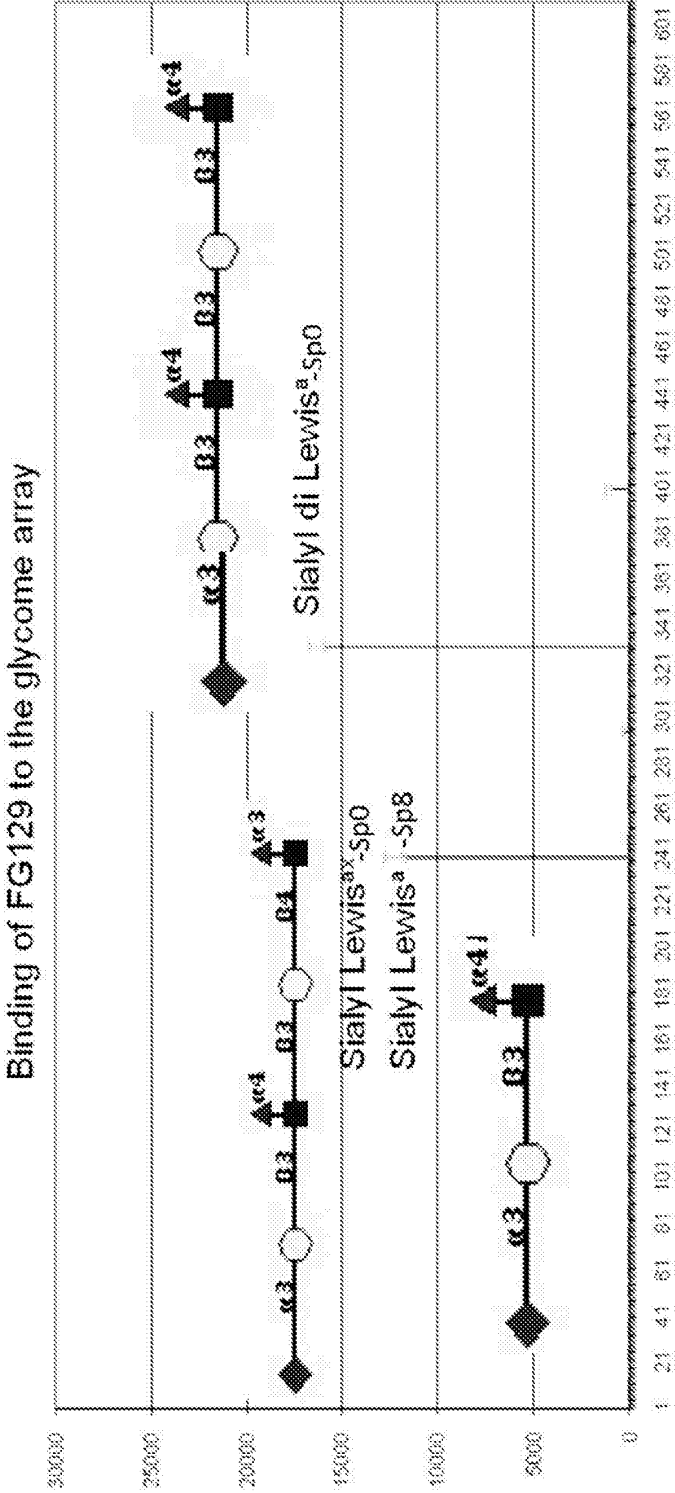


Figure 3a

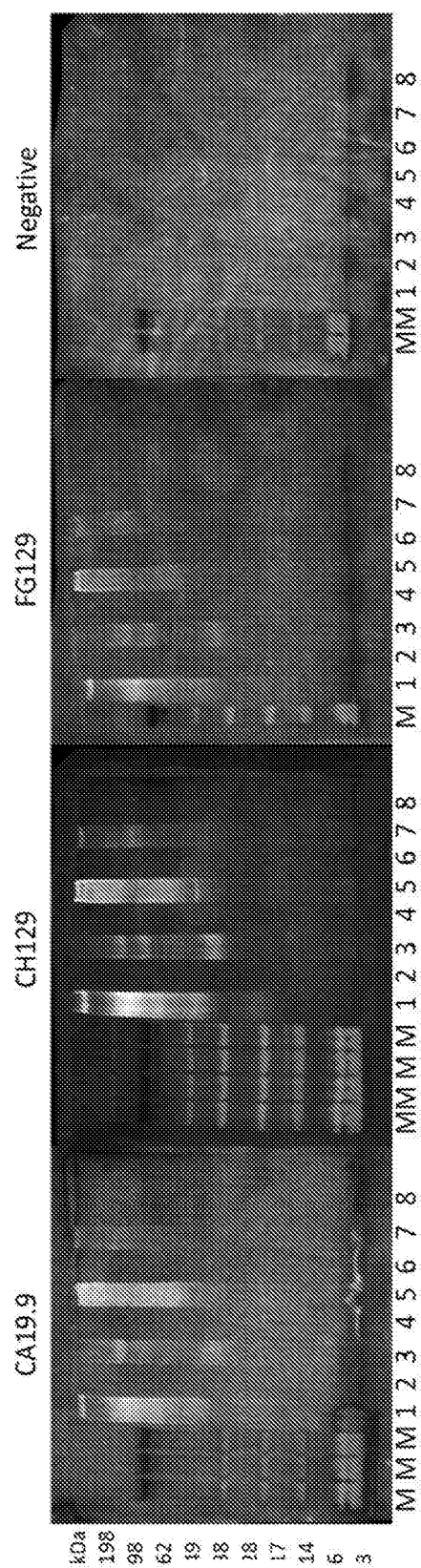


Figure 3b

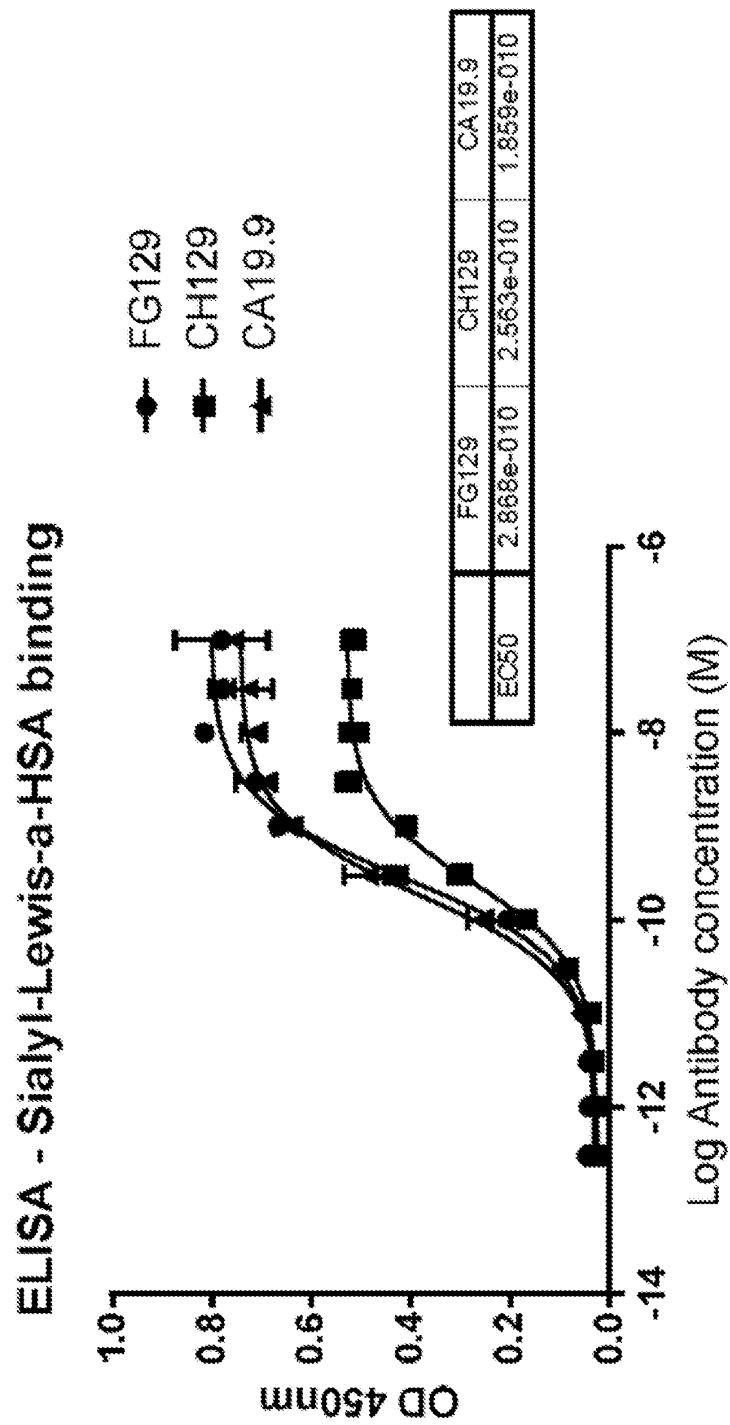


Figure 4

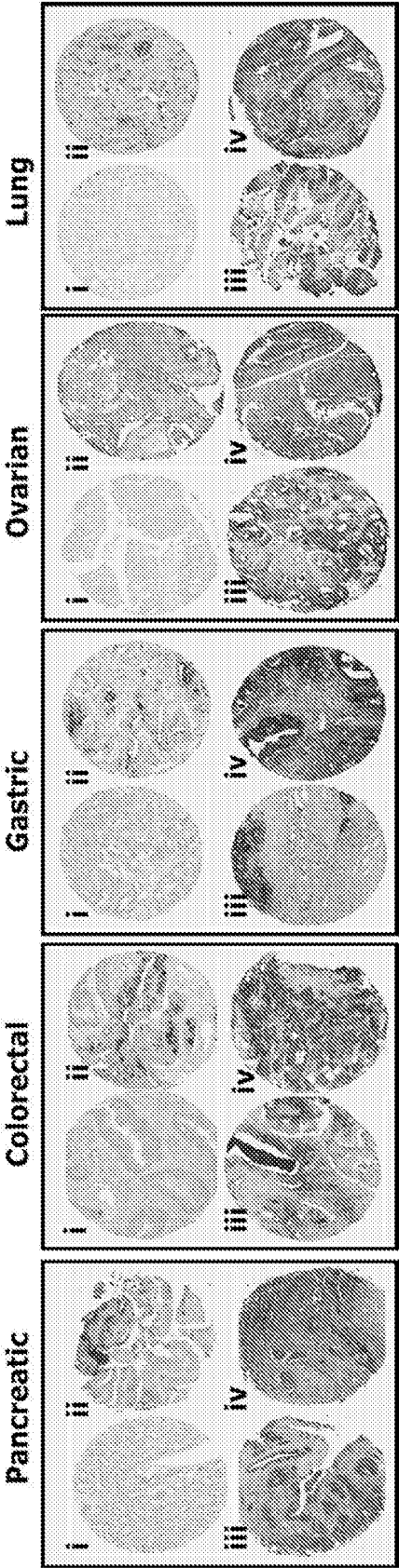


Figure 5a

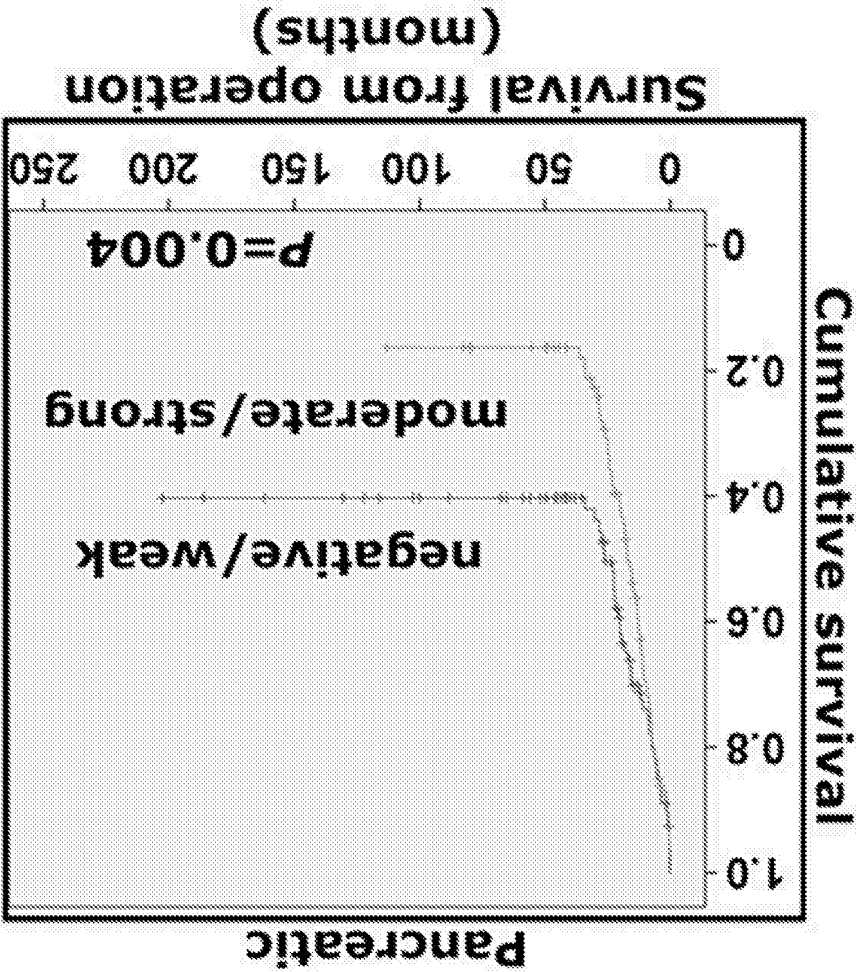


Figure 5b

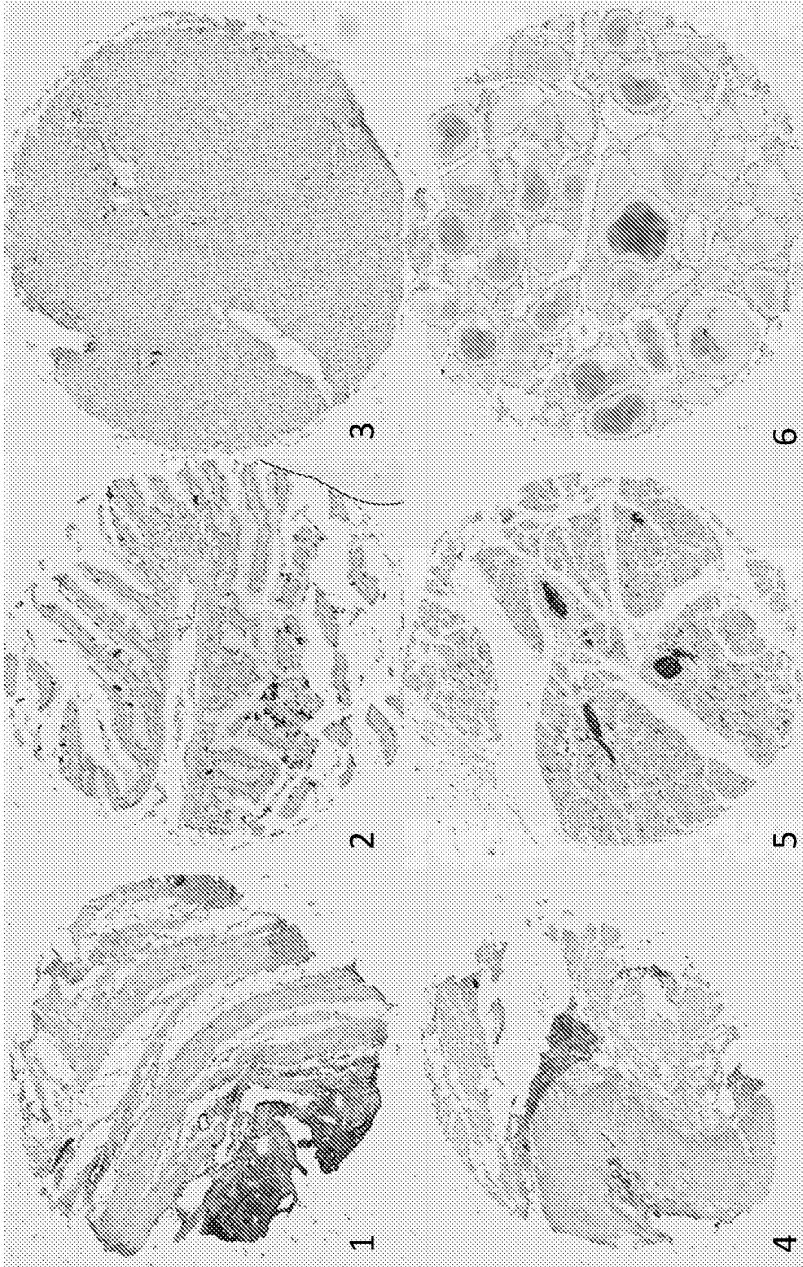


Figure 5c

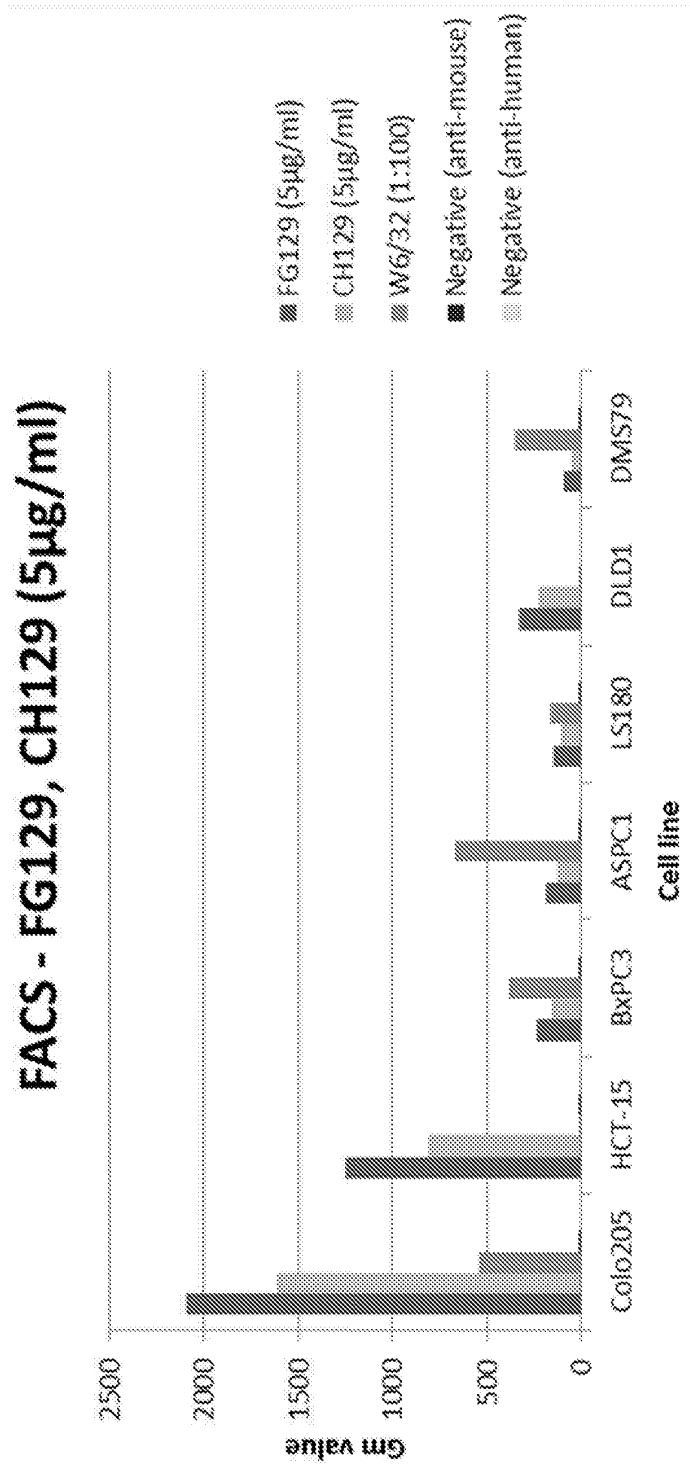


Figure 6a

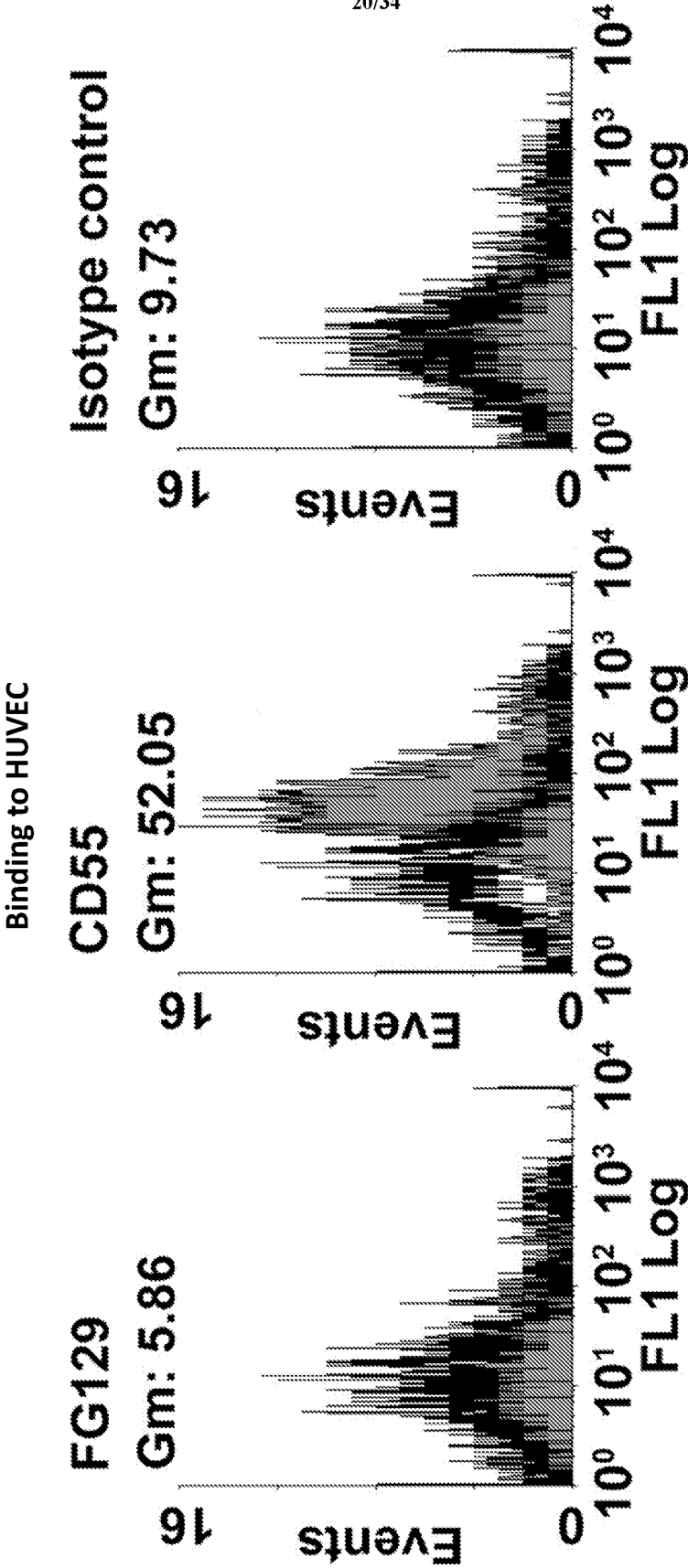


Figure 6b

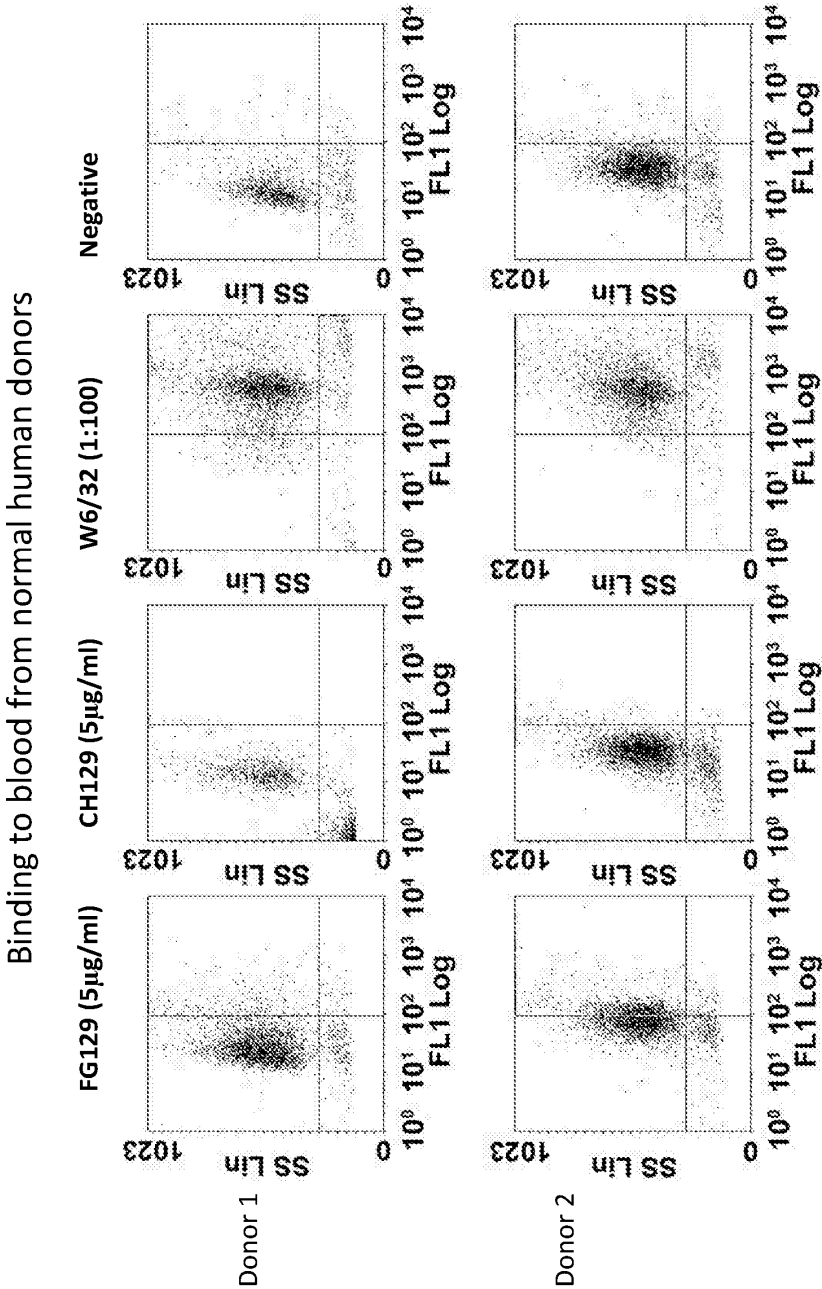


Figure 6c

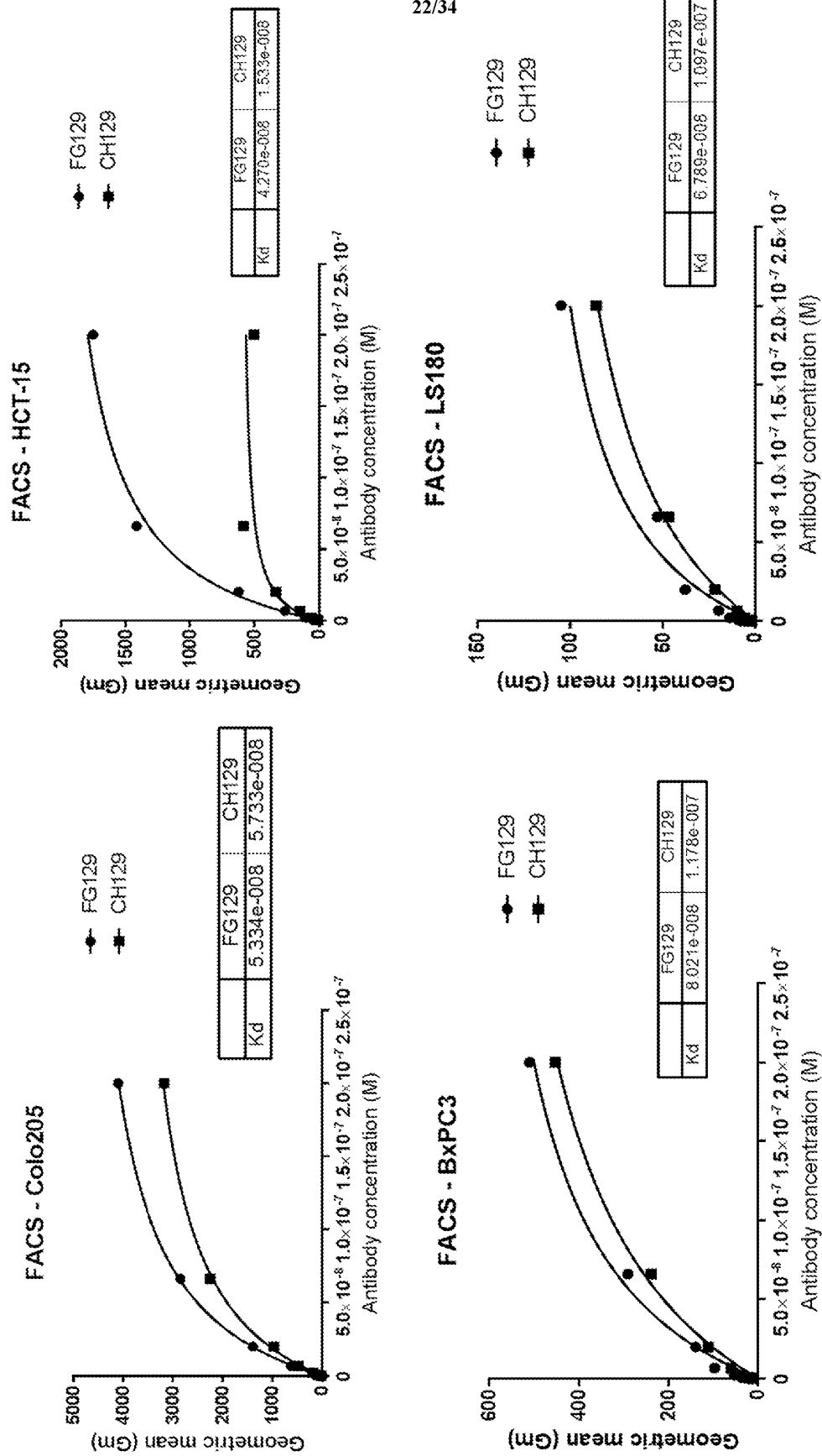
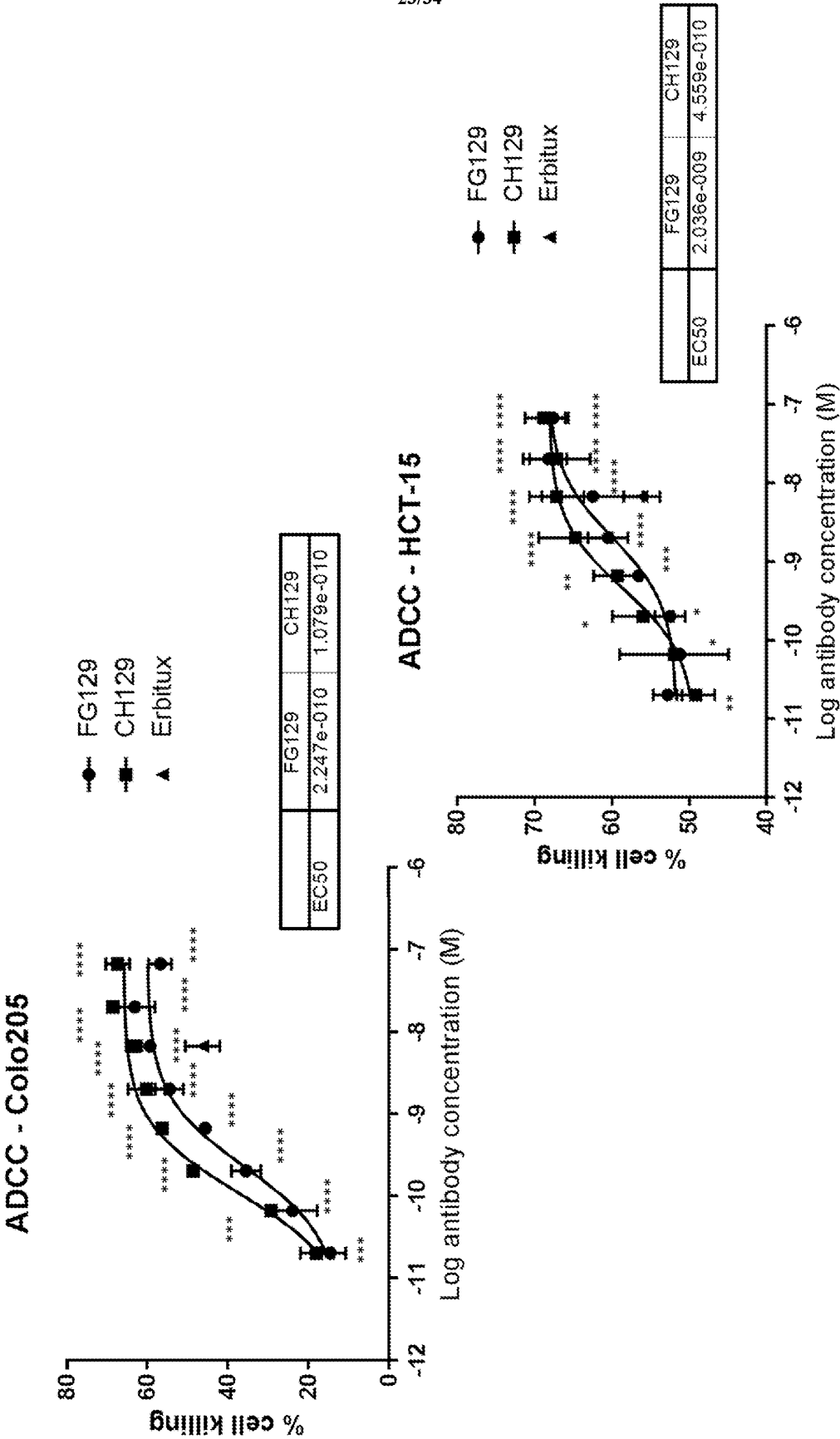


Figure 7



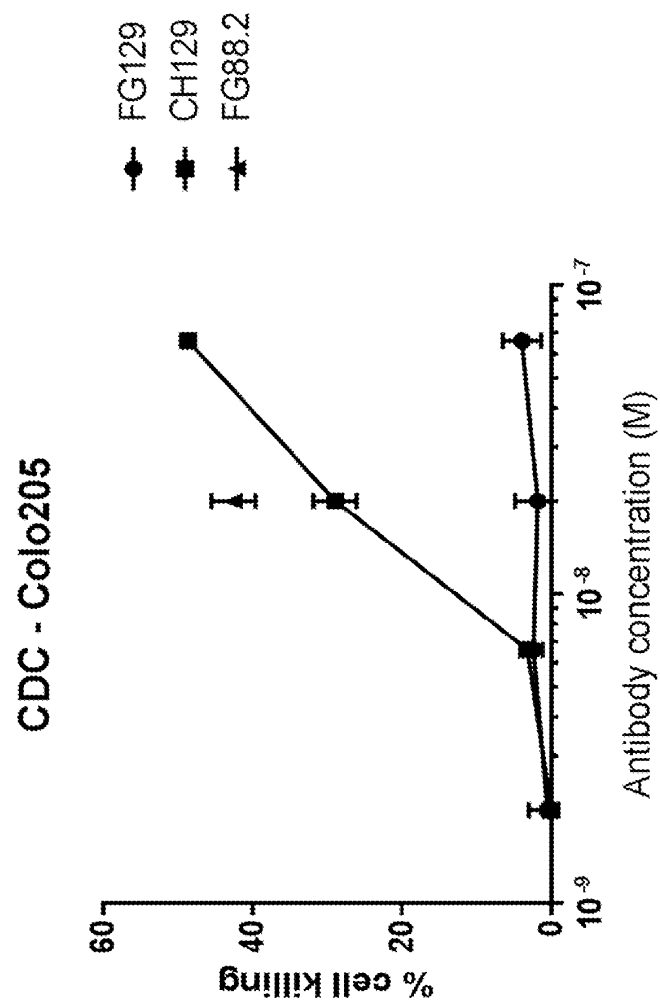


Figure 9

Figure 10b

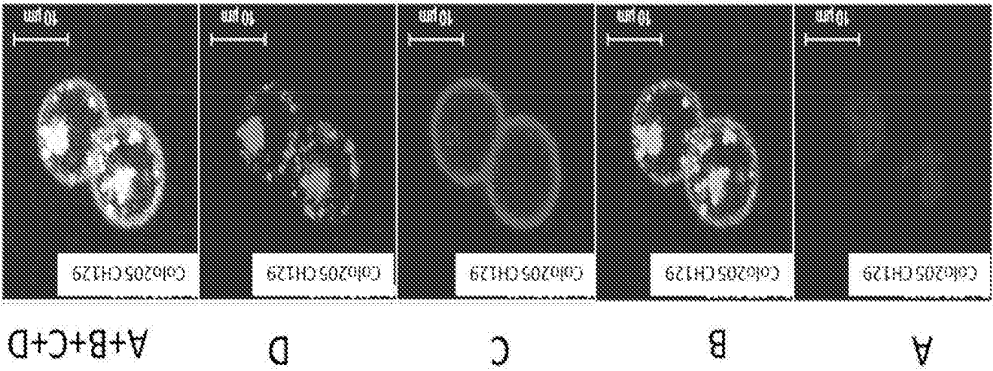
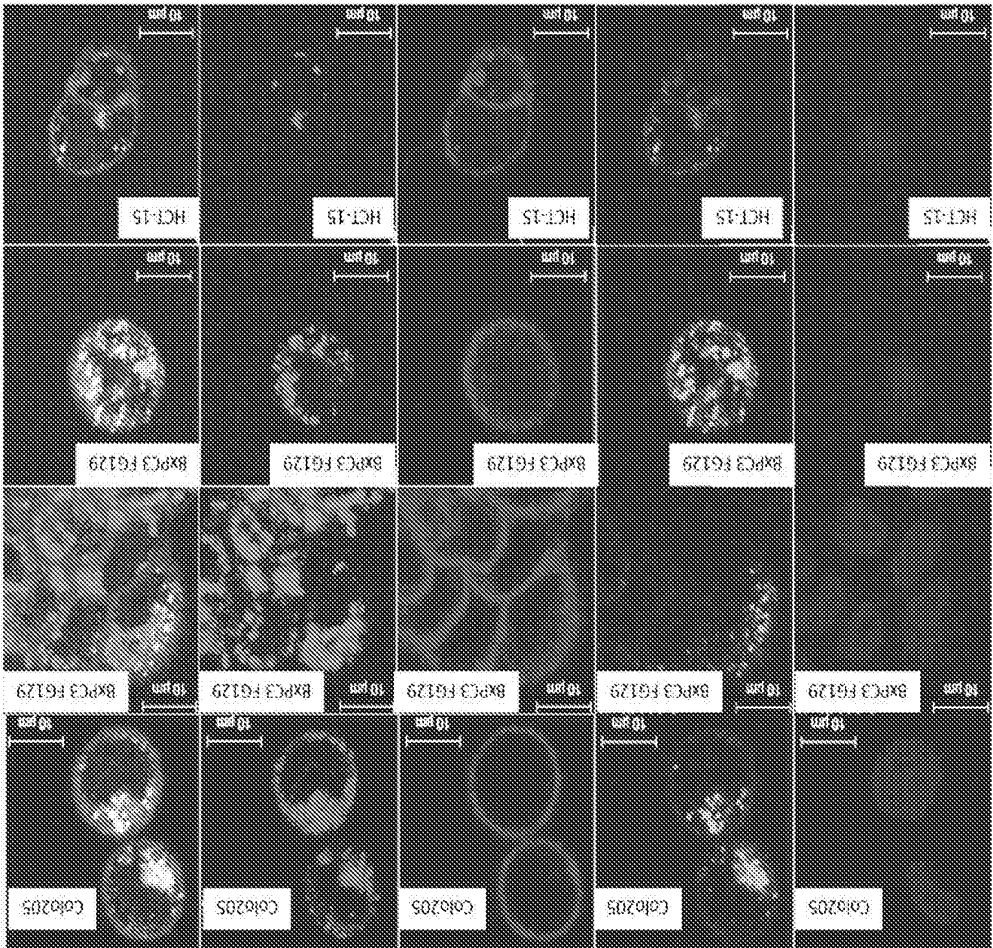
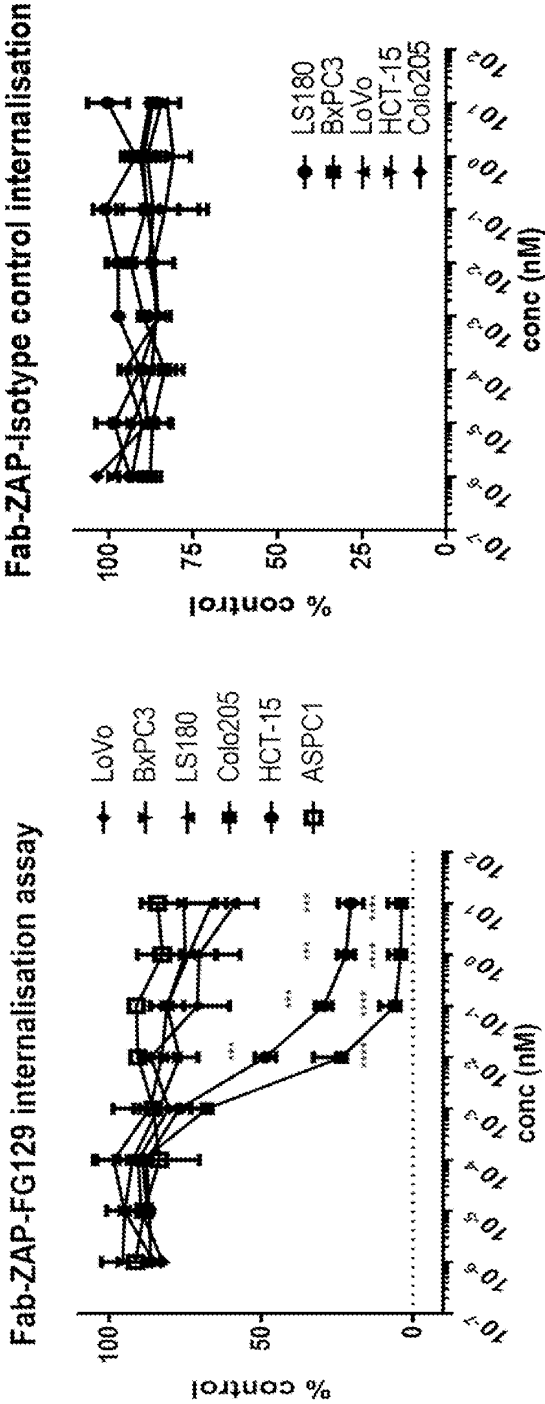


Figure 10a





Fab-ZAP-CH129 internalisation assay

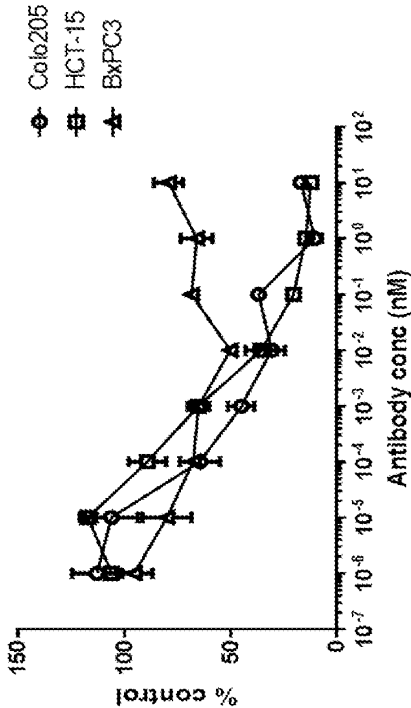


Figure 11c

Fab-ZAP-isotype control internalisation

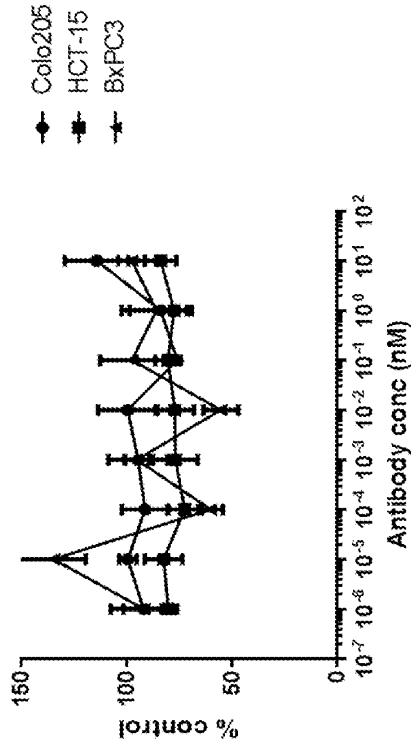


Figure 11d

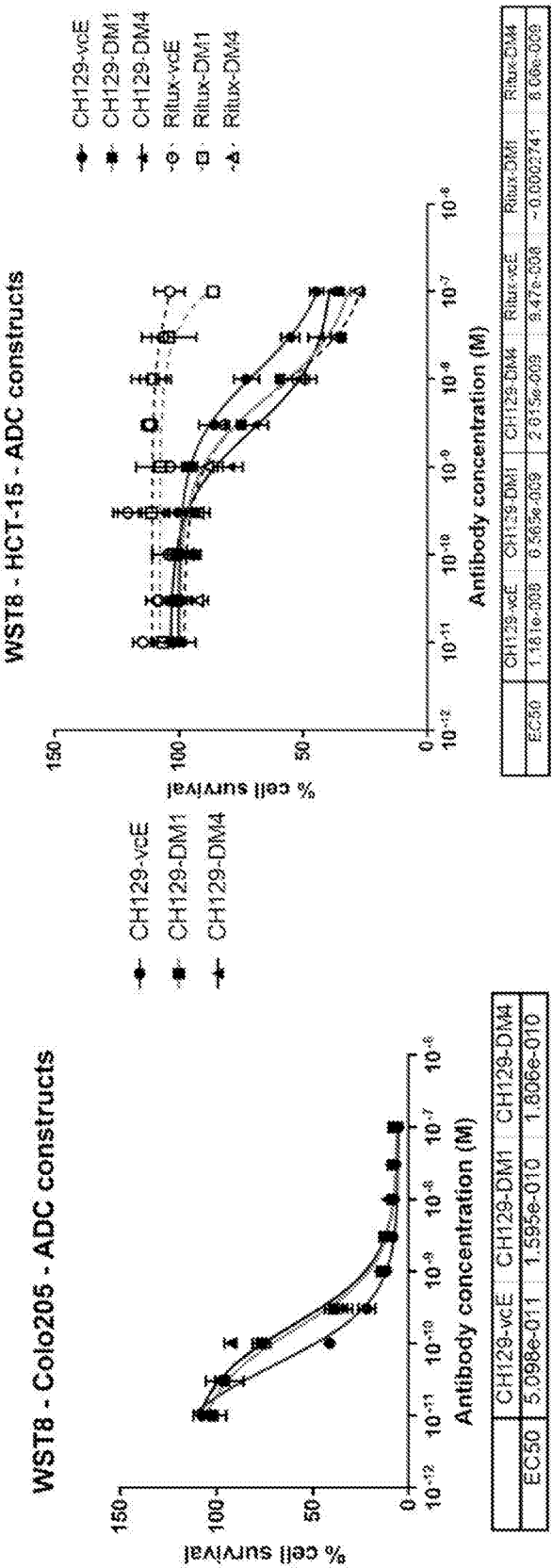
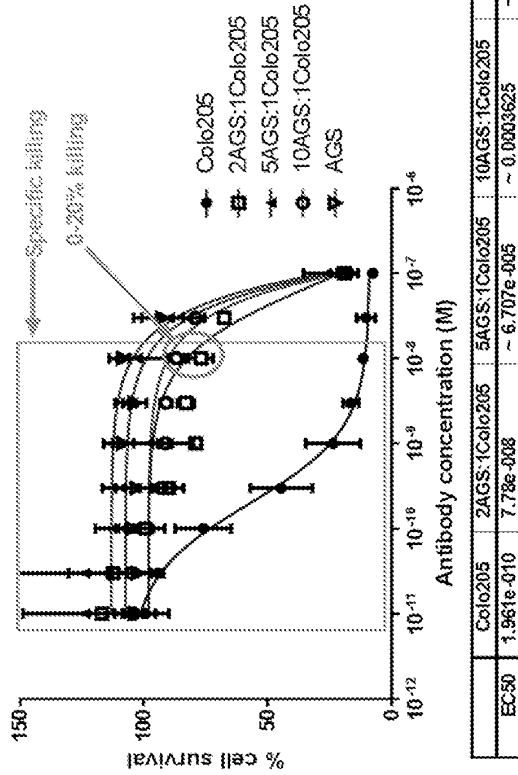


Figure 11e

Figure 11f

WST8 - Cell mixtures - DM1 bystander killing

Figure 11i



29/34

Figure 11g

WST8 - Cell mixtures - vcE bystander killing

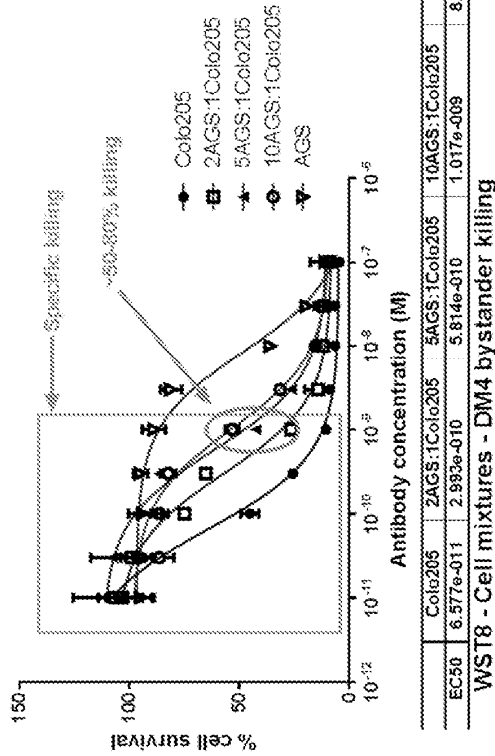
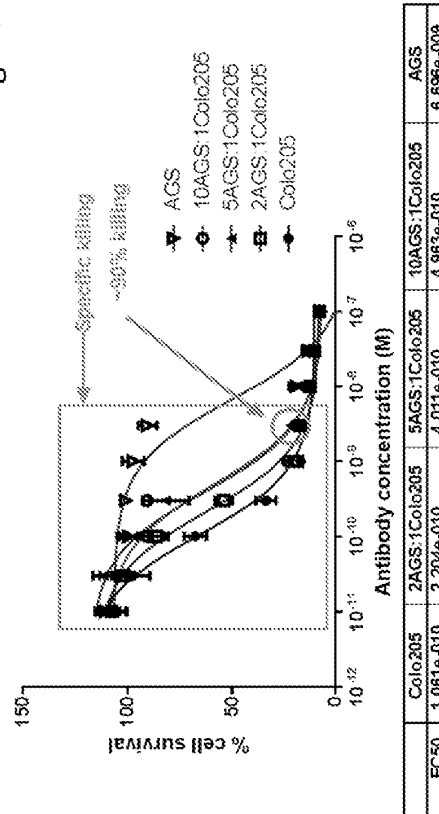


Figure 11h

WST8 - Cell mixtures - DM4 bystander killing



FG129 binding to secreted antigen in pancreatic sera by sandwich ELISA

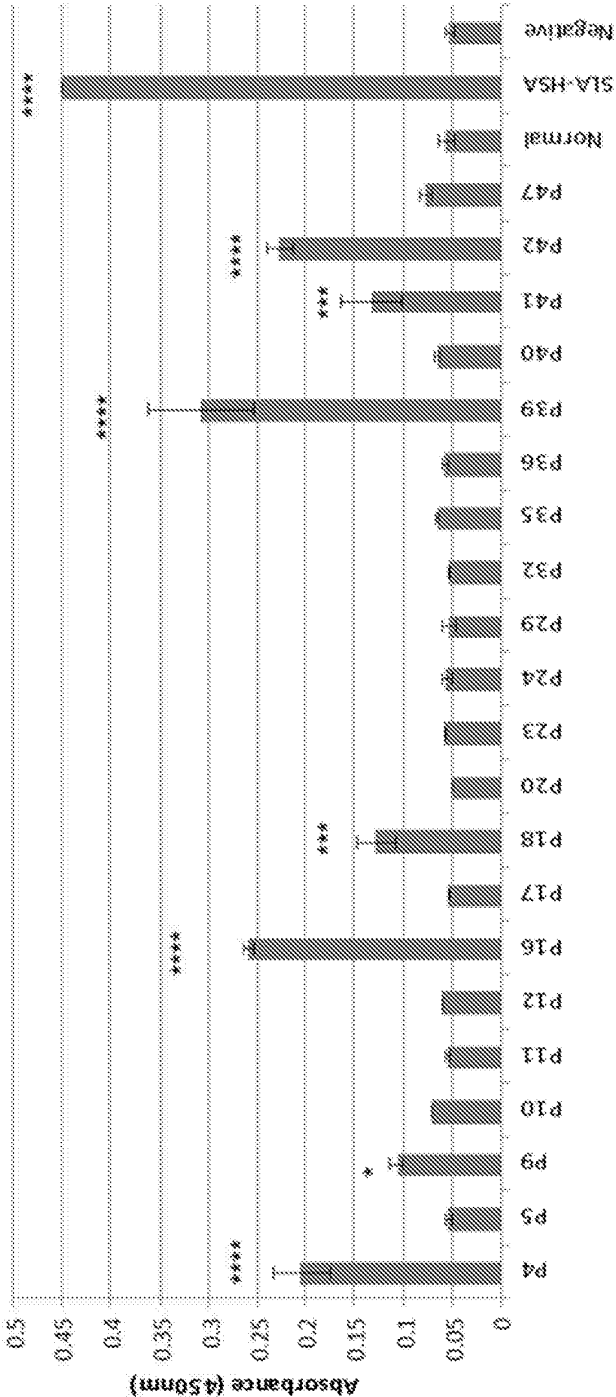


Figure 12a

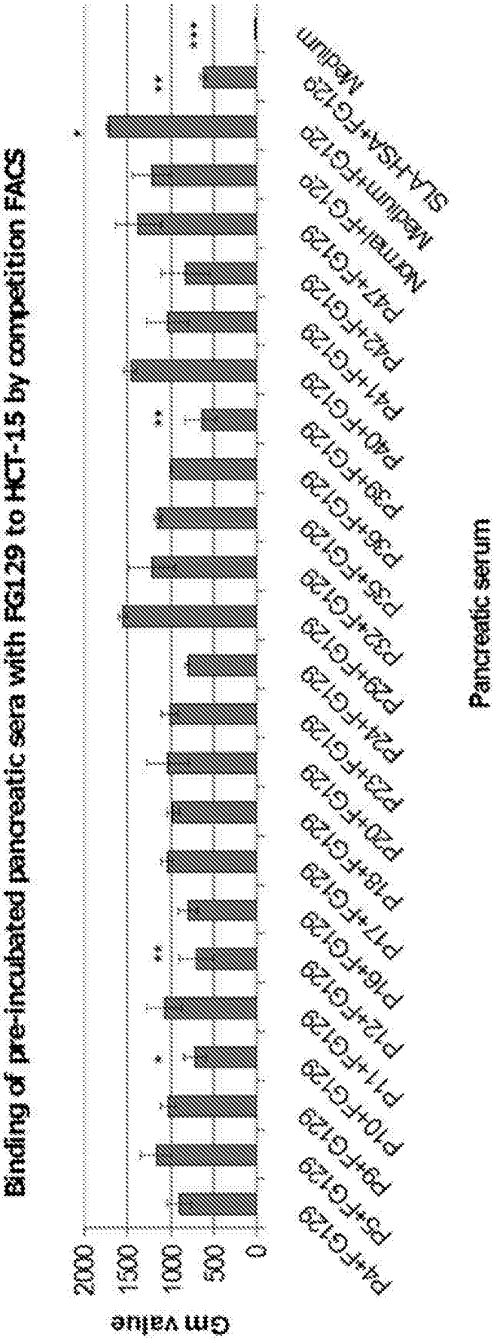


Figure 12b

Figure 13a

```

<----- Leader ----->
FG129-scFv  atgctgttggggtgaagtgggttttttctgtgtttttttatcaaggtgtgcatctatcg
MetLeuLeuGlyLeuLysTrpValPhePheValValPheLysGlnGlyValHisLeuSer

<----- heavy chain variable region ----->
FG129-scFv  atggagttgcagcttgttgagtcggtgaggttggtgagcctaaagggtcattgaaa
MetGluValGlnLeuValGluSerGlyGlyGlyLeuValGlnProLysGlySerLeuLys

<----- heavy chain variable region ----->
FG129-scFv  ctctcatgtgcagcctctgtgattcaccttcaatacctacgcatgaactgggtccgcccag
LeuSerCysAlaAlaSerGlyPheThrPheAsnThrTyrAlaMetAsnTrpValArgGln

<----- heavy chain variable region ----->
FG129-scFv  gctccaggaaagggtttggaatgggttgctgcataagaagtaaaagtaataattatgca
AlaProGlyLysGlyLeuGluTrpValAlaAlaArgIleArgSerLysSerAsnAsnTyrAla

<----- heavy chain variable region ----->
FG129-scFv  acatatatgcgcgattcagtgaaagacaggttccaccatatacagagatgattccaaaagc
ThrTyrTyrAlaAspSerValLysAspArgPheThrIleSerArgAspAspSerGlnSer

<----- heavy chain variable region ----->
FG129-scFv  atgctctatctgcacaaatgaacaacttgaaaaaggaggacacagccatgtattactgtga
MetLeuTyrLeuGlnMetAsnAsnLeuLysLysGluAspThrAlaMetTyrTyrCysVal

<----- heavy chain variable region ----->
FG129-scFv  ggtacagttagtggggaaactactggggtcaagggaacctcagtcaccgtctcctcaggt
GlyTyrGlySerGlyGlyAsnTyrTrpGlyGlnGlyThrSerValThrValSerSerGly

<----- 3 x GGGGS linker ----->
FG129-scFv  ggaggcgttcaggcgaggtggtctctggcggtggcggtacacacattgtgatgacacag
GlyGlyGlySerGlyGlyGlySerGlyGlyGlyGlyGlySerAspIleValMetThrGln

<----- light chain variable region ----->
FG129-scFv  tctccatctccctgactgtgacagcaggagagaaggtcactatgagctgcaagtcaggt
SerProSerSerLeuThrValThrAlaGlyGluLysValThrMetSerCysLysSerSer

```

Figure 13a continued

```

<----- light chain variable region ----->
FC129-scFv  cagagtctgttaaacagtggaataatcaaaagaactacttgacctggtaccagcagaaccca
              GlnSerLeuLeuAsnSerGlyAsnGlnLysAsnTyrLeuThrTrpTyrGlnGlnLysPro
<----- light chain variable region ----->
FC129-scFv  gggcagcctcctaagtggtgatctactgggcataccactaggggaatctggggtccctgat
              GlyGlnProProLysValLeuIleTyrTrpAlaSerThrArgGluSerGlyValProAsp
<----- light chain variable region ----->
FC129-scFv  cgcttcacaggcagtggaatcttggaacagatttcactctcaccatcagcagtggtgcaggct
              ArgpheThrGlySerGlySerGlyThrAsppheThrLeuThrIleSerSerValGlnAla
<----- light chain variable region ----->
FC129-scFv  gaagacctggcagtttattactgtcagaatgattatagttctccattcacggttcggctcg
              GluAspLeuAlaValTyrCysGlnAsnAspTyrSerSerPropheThrPheGlySer
<-----><---- poly-Ala and 6 x His tag ---->
FC129-scFv  gggacaaagttggaaataaaacggggcgccgctgcagggcatcaccatcaccatcactaa
              GlyThrLysLeuGluIleLysArgAlaAlaAlaAlaAlaHisHisHisHisHisOc*

```

FACS - Colo205 - FG129 scFv

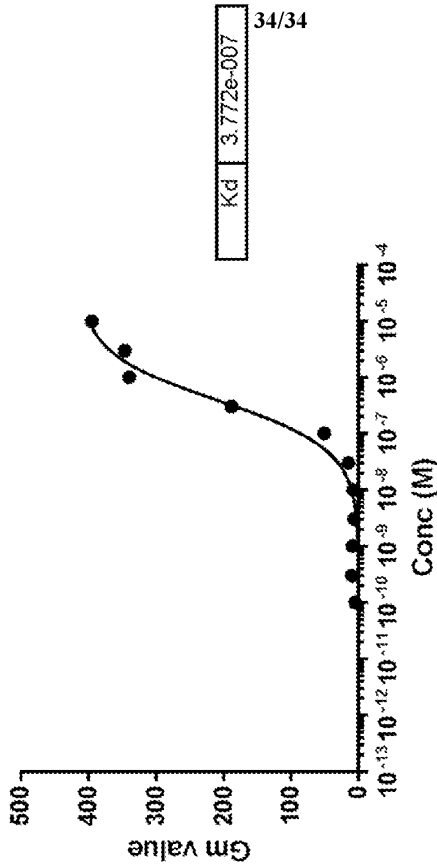


Figure 13c

ELISA - Sialyl-Lewis^x-α-HSA binding

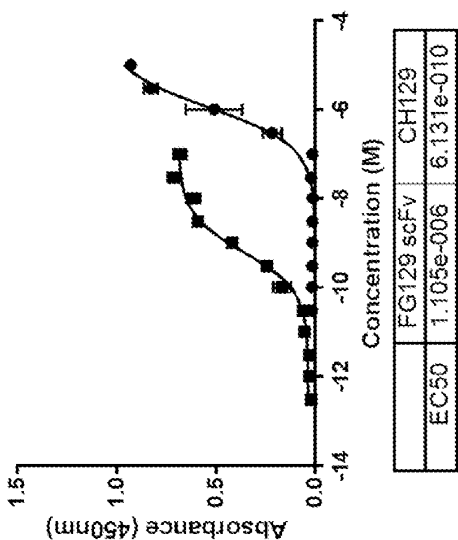


Figure 13b