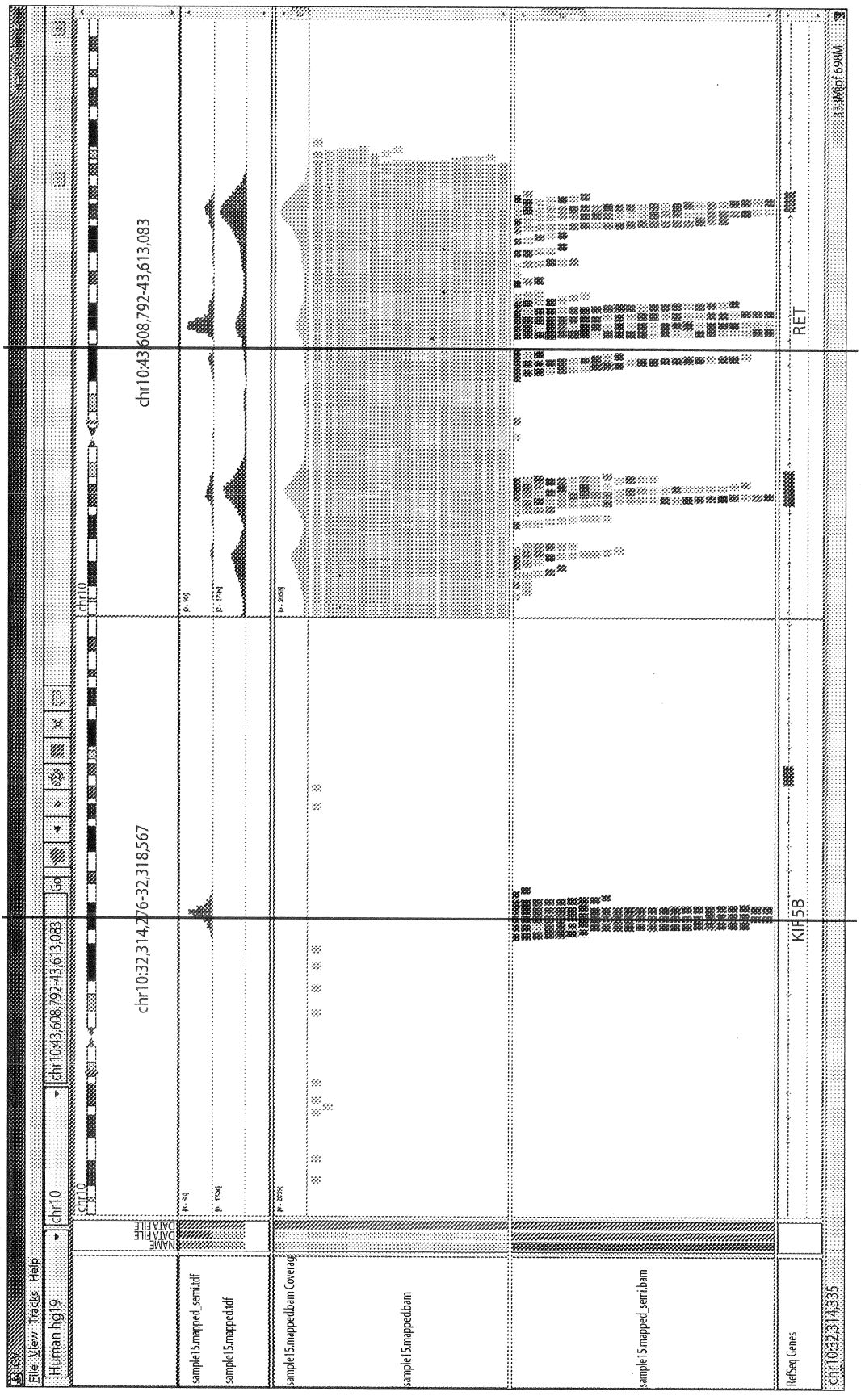

Breakpoint in KIF5B, intron 15
(Chr 10:32,316,376-32,316,416)
Breakpoint in RET, intron 11
(Chr 10:43,611,042-43,611,118)
File View Tracks Help
Human hg19
chr10
chr10:43,608,792-43,613,083
chr10:32,314,376-32,318,567
chr10:43,608,792-43,613,083
NAME
DATA FILE
sample15.mapped_semi.tdf
sample15.mapped.tdf
sample15.mappedbam Coverage
sample15.mappedbam
sample15.mapped_semi.bam
RefSeq Genes
KIF5B
RET
chr10:32,314,335
333.3M of 698M
KIF5B
RET

Fig. 1

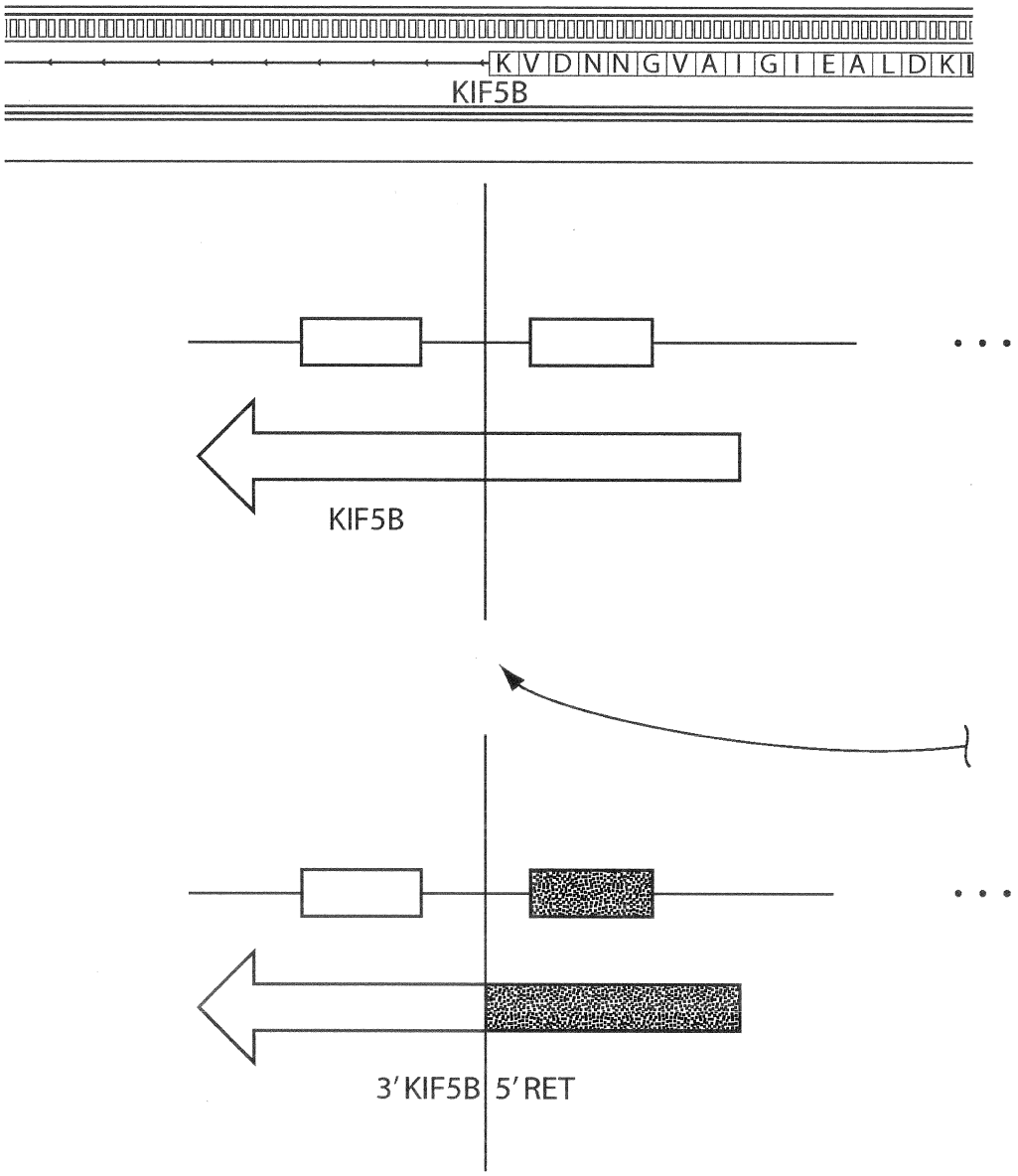


Fig. 2A

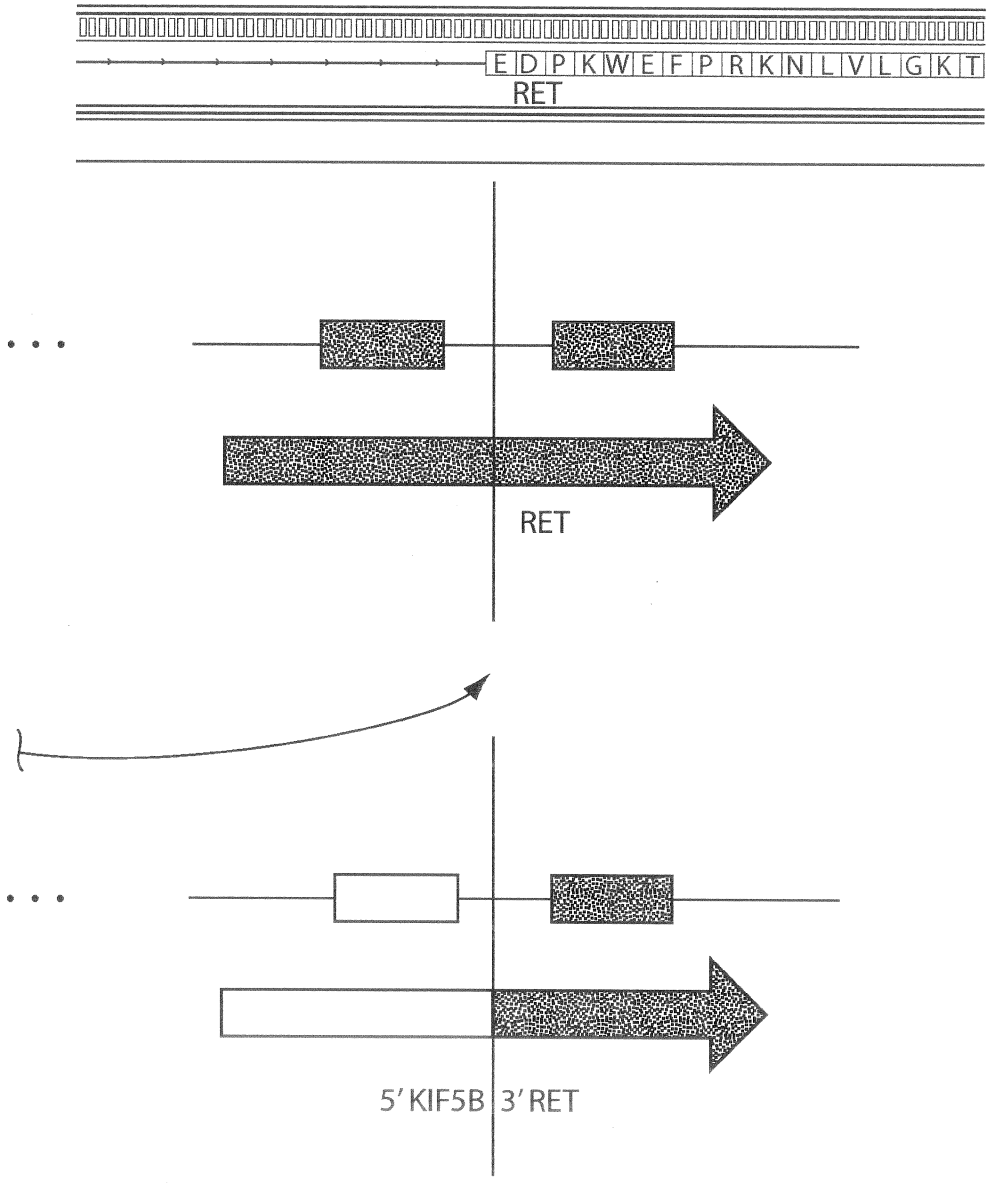


Fig. 2B

```
atg gcg gac ctg gcc gag tgc aac atc aaa gtg atg tgt cgc ttc aga cct ctc aac gag  60
 M   A   D   L   A   E   C   N   I   K   V   M   C   R   F   R   P   L   N   E  20

tct gaa gtg aac cgc ggc gac aag tac atc gcc aag ttt cag gga gaa gac acg gtc gtg 120
 S   E   V   N   R   G   D   K   Y   I   A   K   F   Q   G   E   D   T   V   V  40

atc gcg tcc aag cct tat gca ttt gat cgg gtg ttc cag tca agc aca tct caa gag caa 180
 I   A   S   K   P   Y   A   F   D   R   V   F   Q   S   S   T   S   Q   E   Q  60

gtg tat aat gac tgt gca aag aag att gtt aaa gat gta ctt gaa gga tat aat gga aca 240
 V   Y   N   D   C   A   K   K   I   V   K   D   V   L   E   G   Y   N   G   T  80

ata ttt gca tat gga caa aca tcc tct ggg aag aca cac aca atg gag ggt aaa ctt cat 300
 I   F   A   Y   G   Q   T   S   S   G   K   T   H   T   M   E   G   K   L   H 100

gat cca gaa ggc atg gga att att cca aga ata gtg caa gat att ttt aat tat att tac 360
 D   P   E   G   M   G   I   I   P   R   I   V   Q   D   I   F   N   Y   I   Y 120

tcc atg gat gaa aat ttg gaa ttt cat att aag gtt tca tat ttt gaa ata tat ttg gat 420
 S   M   D   E   N   L   E   F   H   I   K   V   S   Y   F   E   I   Y   L   D 140

aag ata agg gac ctg tta gat gtt tca aag acc aac ctt tca gtt cat gaa gac aaa aac 480
 K   I   R   D   L   L   D   V   S   K   T   N   L   S   V   H   E   D   K   N 160

cga gtt ccc tat gta aag ggg tgc aca gag cgt ttt gta tgt agt cca gat gaa gtt atg 540
 R   V   P   Y   V   K   G   C   T   E   R   F   V   C   S   P   D   E   V   M 180

gat acc ata gat gaa gga aaa tcc aac aga cat gta gca gtt aca aat atg aat gaa cat 600
 D   T   I   D   E   G   K   S   N   R   H   V   A   V   T   N   M   N   E   H 200

agc tct agg agt cac agt ata ttt ctt att aat gtc aaa caa gag aac aca caa acg gaa 660
 S   S   R   S   H   S   I   F   L   I   N   V   K   Q   E   N   T   Q   T   E 220

caa aag ctg agt gga aaa ctt tat ctg gtt gat tta gct ggt agt gaa aag gtt agt aaa 720
 Q   K   L   S   G   K   L   Y   L   V   D   L   A   G   S   E   K   V   S   K 240

act gga gct gaa ggt gct gtg ctg gat gaa gct aaa aac atc aac aag tca ctt tct gct 780
 T   G   A   E   G   A   V   L   D   E   A   K   N   I   N   K   S   L   S   A 260

ctt gga aat gtt att tct gct ttg gct gag ggt agt aca tat gtt cca tat cga gat agt 840
 L   G   N   V   I   S   A   L   A   E   G   S   T   Y   V   P   Y   R   D   S 280
```

Fig. 3A

```
aaa atg aca aga atc ctt caa gat tca tta ggt ggc aac tgt aga acc act att gta att 900
  K   M   T   R   I   L   Q   D   S   L   G   G   N   C   R   T   T   I   V   I 300

tgc tgc tct cca tca tca tac aat gag tct gaa aca aaa tct aca ctc tta ttt ggc caa  960
  C   C   S   P   S   S   Y   N   E   S   E   T   K   S   T   L   L   F   G   Q 320

agg gcc aaa aca att aag aac aca gtt tgt gtc aat gtg gag tta act gca gaa cag tgg  1020
  R   A   K   T   I   K   N   T   V   C   V   N   V   E   L   T   A   E   Q   W 340

aaa aag aag tat gaa aaa gaa aaa gaa aaa aat aag atc ctg cgg aac act att cag tgg  1080
  K   K   K   Y   E   K   E   K   E   K   N   K   I   L   R   N   T   I   Q   W 360

ctt gaa aat gag ctc aac aga tgg cgt aat ggg gag acg gtg cct att gat gaa cag ttt  1140
  L   E   N   E   L   N   R   W   R   N   G   E   T   V   P   I   D   E   Q   F 380

gac aaa gag aaa gcc aac ttg gaa gct ttc aca gtg gat aaa gat att act ctt acc aat  1200
  D   K   E   K   A   N   L   E   A   F   T   V   D   K   D   I   T   L   T   N 400

gat aaa cca gca acc gca att gga gtt ata gga aat ttt act gat gct gaa aga aga aag  1260
  D   K   P   A   T   A   I   G   V   I   G   N   F   T   D   A   E   R   R   K 420

tgt gaa gaa gaa att gct aaa tta tac aaa cag ctt gat gac aag gat gaa gaa att aac  1320
  C   E   E   E   I   A   K   L   Y   K   Q   L   D   D   K   D   E   E   I   N 440

cag caa agt caa ctg gta gag aaa ctg aag acg caa atg ttg gat cag gag gag ctt ttg  1380
  Q   Q   S   Q   L   V   E   K   L   K   T   Q   M   L   D   Q   E   E   L   L 460

gca tct acc aga agg gat caa gac aat atg caa gct gag ctg aat cgc ctt caa gca gaa  1440
  A   S   T   R   R   D   Q   D   N   M   Q   A   E   L   N   R   L   Q   A   E 480

aat gat gcc tct aaa gaa gaa gtg aaa gaa gtt tta cag gcc cta gaa gaa ctt gct gtc  1500
  N   D   A   S   K   E   E   V   K   E   V   L   Q   A   L   E   E   L   A   V 500

aat tat gat cag aag tct cag gaa gtt gaa gac aaa act aag gaa tat gaa ttg ctt agt  1560
  N   Y   D   Q   K   S   Q   E   V   E   D   K   T   K   E   Y   E   L   L   S 520

gat gaa ttg aat cag aaa tcg gca act tta gcg agt ata gat gct gag ctt cag aaa ctt  1620
  D   E   L   N   Q   K   S   A   T   L   A   S   I   D   A   E   L   Q   K   L 540

aag gaa atg acc aac cac cag aaa aaa cga gca gct gag atg atg gca tct tta cta aaa  1680
  K   E   M   T   N   H   Q   K   K   R   A   A   E   M   M   A   S   L   L   K 560

gac ctt gca gaa ata gga att gct gtg gga aat aat gat gta aag gag gat cca aag tgg  1740
  D   L   A   E   I   G   I   A   V   G   N   N   D   V   K   E   D   P   K   W 580
```

Fig. 3B

```
gaa ttc cct cgg aag aac ttg gtt ctt gga aaa act cta gga gaa ggc gaa ttt gga aaa 1800
  E   F   P   R   K   N   L   V   L   G   K   T   L   G   E   G   E   F   G   K 600

gtg gtc aag gca acg gcc ttc cat ctg aaa ggc aga gca ggg tac acc acg gtg gcc gtg 1860
  V   V   K   A   T   A   F   H   L   K   G   R   A   G   Y   T   T   V   A   V 620

aag atg ctg aaa gag aac gcc tcc ccg agt gag ctg cga gac ctg ctg tca gag ttc aac 1920
  K   M   L   K   E   N   A   S   P   S   E   L   R   D   L   L   S   E   F   N 640

gtc ctg aag cag gtc aac cac cca cat gtc atc aaa ttg tat ggg gcc tgc agc cag gat 1980
  V   L   K   Q   V   N   H   P   H   V   I   K   L   Y   G   A   C   S   Q   D 660

ggc ccg ctc ctc ctc atc gtg gag tac gcc aaa tac ggc tcc ctg cgg ggc ttc ctc cgc 2040
  G   P   L   L   L   I   V   E   Y   A   K   Y   G   S   L   R   G   F   L   R 680

gag agc cgc aaa gtg ggg cct ggc tac ctg ggc agt gga ggc agc cgc aac tcc agc tcc 2100
  E   S   R   K   V   G   P   G   Y   L   G   S   G   G   S   R   N   S   S   S 700

ctg gac cac ccg gat gag cgg gcc ctc acc atg ggc gac ctc atc tca ttt gcc tgg cag 2160
  L   D   H   P   D   E   R   A   L   T   M   G   D   L   I   S   F   A   W   Q 720

atc tca cag ggg atg cag tat ctg gcc gag atg aag ctc gtt cat cgg gac ttg gca gcc 2220
  I   S   Q   G   M   Q   Y   L   A   E   M   K   L   V   H   R   D   L   A   A 740

aga aac atc ctg gta gct gag ggg cgg aag atg aag att tcg gat ttc ggc ttg tcc cga 2280
  R   N   I   L   V   A   E   G   R   K   M   K   I   S   D   F   G   L   S   R 760

gat gtt tat gaa gag gat tcc tac gtg aag agg agc cag ggt cgg att cca gtt aaa tgg 2340
  D   V   Y   E   E   D   S   Y   V   K   R   S   Q   G   R   I   P   V   K   W 780

atg gca att gaa tcc ctt ttt gat cat atc tac acc acg caa agt gat gta tgg tct ttt 2400
  M   A   I   E   S   L   F   D   H   I   Y   T   T   Q   S   D   V   W   S   F 800

ggt gtc ctg ctg tgg gag atc gtg acc cta ggg gga aac ccc tat cct ggg att cct cct 2460
  G   V   L   L   W   E   I   V   T   L   G   G   N   P   Y   P   G   I   P   P 820

gag cgg ctc ttc aac ctt ctg aag acc ggc cac cgg atg gag agg cca gac aac tgc agc 2520
  E   R   L   F   N   L   L   K   T   G   H   R   M   E   R   P   D   N   C   S 840

gag gag atg tac cgc ctg atg ctg caa tgc tgg aag cag gag ccg gac aaa agg ccg gtg 2580
  E   E   M   Y   R   L   M   L   Q   C   W   K   Q   E   P   D   K   R   P   V 860

ttt gcg gac atc agc aaa gac ctg gag aag atg atg gtt aag agg aga gac tac ttg gac 2640
  F   A   D   I   S   K   D   L   E   K   M   M   V   K   R   R   D   Y   L   D 880
```

Fig. 3C

```
ctt gcg gcg tcc act cca tct gac tcc ctg att tat gac gac ggc ctc tca gag gag gag  2700
  L   A   A   S   T   P   S   D   S   L   I   Y   D   D   G   L   S   E   E   E  900

aca ccg ctg gtg gac tgt aat aat gcc ccc ctc cct cga gcc ctc cct tcc aca tgg att  2760
  T   P   L   V   D   C   N   N   A   P   L   P   R   A   L   P   S   T   W   I  920

gaa aac aaa ctc tat ggc atg tca gac ccg aac tgg cct gga gag agt cct gta cca ctc  2820
  E   N   K   L   Y   G   M   S   D   P   N   W   P   G   E   S   P   V   P   L  940

acg aga gct gat ggc act aac act ggg ttt cca aga tat cca aat gat agt gta tat gct  2880
  T   R   A   D   G   T   N   T   G   F   P   R   Y   P   N   D   S   V   Y   A  960

aac tgg atg ctt tca ccc tca gcg gca aaa tta atg gac acg ttt gat agt taa  2934
  N   W   M   L   S   P   S   A   A   K   L   M   D   T   F   D   S   *  977
```

cDNA = SEQ ID NO:1
protein = SEQ ID NO:2

Fig. 3D

```
atg gcg aag gcg acg tcc ggt gcc gcg ggg ctg cgt ctg ctg ttg ctg ctg ctg ctg ccg  60
  M   A   K   A   T   S   G   A   A   G   L   R   L   L   L   L   L   L   L   P  20

ctg cta ggc aaa gtg gca ttg ggc ctc tac ttc tcg agg gat gct tac tgg gag aag ctg  120
  L   L   G   K   V   A   L   G   L   Y   F   S   R   D   A   Y   W   E   K   L  40

tat gtg gac cag gca gcc ggc acg ccc ttg ctg tac gtc cat gcc ctg cgg gac gcc cct  180
  Y   V   D   Q   A   A   G   T   P   L   L   Y   V   H   A   L   R   D   A   P  60

gag gag gtg ccc agc ttc cgc ctg ggc cag cat ctc tac ggc acg tac cgc aca cgg ctg  240
  E   E   V   P   S   F   R   L   G   Q   H   L   Y   G   T   Y   R   T   R   L  80

cat gag aac aac tgg atc tgc atc cag gag gac acc ggc ctc ctc tac ctt aac cgg agc  300
  H   E   N   N   W   I   C   I   Q   E   D   T   G   L   L   Y   L   N   R   S 100

ctg gac cat agc tcc tgg gag aag ctc agt gtc cgc aac cgc ggc ttt ccc ctg ctc acc  360
  L   D   H   S   S   W   E   K   L   S   V   R   N   R   G   F   P   L   L   T 120

gtc tac ctc aag gtc ttc ctg tca ccc aca tcc ctt cgt gag ggc gag tgc cag tgg cca  420
  V   Y   L   K   V   F   L   S   P   T   S   L   R   E   G   E   C   Q   W   P 140

ggc tgt gcc cgc gta tac ttc tcc ttc ttc aac acc tcc ttt cca gcc tgc agc tcc ctc  480
  G   C   A   R   V   Y   F   S   F   F   N   T   S   F   P   A   C   S   S   L 160

aag ccc cgg gag ctc tgc ttc cca gag aca agg ccc tcc ttc cgc att cgg gag aac cga  540
  K   P   R   E   L   C   F   P   E   T   R   P   S   F   R   I   R   E   N   R 180

ccc cca ggc acc ttc cac cag ttc cgc ctg ctg cct gtg cag ttc ttg tgc ccc aac atc  600
  P   P   G   T   F   H   Q   F   R   L   L   P   V   Q   F   L   C   P   N   I 200

agc gtg gcc tac agg ctc ctg gag ggt gag ggt ctg ccc ttc cgc tgc gcc ccg gac agc  660
  S   V   A   Y   R   L   L   E   G   E   G   L   P   F   R   C   A   P   D   S 220

ctg gag gtg agc acg cgc tgg gcc ctg gac cgc gag cag cgg gag aag tac gag ctg gtg  720
  L   E   V   S   T   R   W   A   L   D   R   E   Q   R   E   K   Y   E   L   V 240

gcc gtg tgc acc gtg cac gcc ggc gcg cgc gag gag gtg gtg atg gtg ccc ttc ccg gtg  780
  A   V   C   T   V   H   A   G   A   R   E   E   V   V   M   V   P   F   P   V 260

acc gtg tac gac gag gac gac tcg gcg ccc acc ttc ccc gcg ggc gtc gac acc gcc agc  840
  T   V   Y   D   E   D   D   S   A   P   T   F   P   A   G   V   D   T   A   S 280

gcc gtg gtg gag ttc aag cgg aag gag gac acc gtg gtg gcc acg ctg cgt gtc ttc gat  900
  A   V   V   E   F   K   R   K   E   D   T   V   V   A   T   L   R   V   F   D 300
```

Fig. 4A

```
gca gac gtg gta cct gca tca ggg gag ctg gtg agg cgg tac aca agc acg ctg ctc ccc 960
  A   D   V   V   P   A   S   G   E   L   V   R   R   Y   T   S   T   L   L   P 320

ggg gac acc tgg gcc cag cag acc ttc cgg gtg gaa cac tgg ccc aac gag acc tcg gtc 1020
  G   D   T   W   A   Q   Q   T   F   R   V   E   H   W   P   N   E   T   S   V 340

cag gcc aac ggc agc ttc gtg cgg gcg acc gta cat gac tat agg ctg gtt ctc aac cgg 1080
  Q   A   N   G   S   F   V   R   A   T   V   H   D   Y   R   L   V   L   N   R 360

aac ctc tcc atc tcg gag aac cgc acc atg cag ctg gcg gtg ctg gtc aat gac tca gac 1140
  N   L   S   I   S   E   N   R   T   M   Q   L   A   V   L   V   N   D   S   D 380

ttc cag ggc cca gga gcg ggc gtc ctc ttg ctc cac ttc aac gtg tcg gtg ctg ccg gtc 1200
  F   Q   G   P   G   A   G   V   L   L   L   H   F   N   V   S   V   L   P   V 400

agc ctg cac ctg ccc agt acc tac tcc ctc tcc gtg agc agg agg gct cgc cga ttt gcc 1260
  S   L   H   L   P   S   T   Y   S   L   S   V   S   R   R   A   R   R   F   A 420

cag atc ggg aaa gtc tgt gtg gaa aac tgc cag gca ttc agt ggc atc aac gtc cag tac 1320
  Q   I   G   K   V   C   V   E   N   C   Q   A   F   S   G   I   N   V   Q   Y 440

aag ctg cat tcc tct ggt gcc aac tgc agc acg cta ggg gtg gtc acc tca gcc gag gac 1380
  K   L   H   S   S   G   A   N   C   S   T   L   G   V   V   T   S   A   E   D 460

acc tcg ggg atc ctg ttt gtg aat gac acc aag gcc ctg cgg cgg ccc aag tgt gcc gaa 1440
  T   S   G   I   L   F   V   N   D   T   K   A   L   R   R   P   K   C   A   E 480

ctt cac tac atg gtg gtg gcc acc gac cag cag acc tct agg cag gcc cag gcc cag ctg 1500
  L   H   Y   M   V   V   A   T   D   Q   Q   T   S   R   Q   A   Q   A   Q   L 500

ctt gta aca gtg gag ggg tca tat gtg gcc gag gag gcg ggc tgc ccc ctg tcc tgt gca 1560
  L   V   T   V   E   G   S   Y   V   A   E   E   A   G   C   P   L   S   C   A 520

gtc agc aag aga cgg ctg gag tgt gag gag tgt ggc ggc ctg ggc tcc cca aca ggc agg 1620
  V   S   K   R   R   L   E   C   E   E   C   G   G   L   G   S   P   T   G   R 540

tgt gag tgg agg caa gga gat ggc aaa ggg atc acc agg aac ttc tcc acc tgc tct ccc 1680
  C   E   W   R   Q   G   D   G   K   G   I   T   R   N   F   S   T   C   S   P 560

agc acc aag acc tgc ccc gac ggc cac tgc gat gtt gtg gag acc caa gac atc aac att 1740
  S   T   K   T   C   P   D   G   H   C   D   V   V   E   T   Q   D   I   N   I 580

tgc cct cag gac tgc ctc cgg ggc agc att gtt ggg gga cac gag cct ggg gag ccc cgg 1800
  C   P   Q   D   C   L   R   G   S   I   V   G   G   H   E   P   G   E   P   R 600
```

Fig. 4B

```
ggg att aaa gct ggc tat ggc acc tgc aac tgc ttc cct gag gag gag aag tgc ttc tgc 1860
  G   I   K   A   G   Y   G   T   C   N   C   F   P   E   E   E   K   C   F   C 620

gag ccc gaa gac atc cag gat cca ctg tgc gac gag ctg tgc cgc acg gtg atc gca gcc 1920
  E   P   E   D   I   Q   D   P   L   C   D   E   L   C   R   T   V   I   A   A 640

gct gtc ctc ttc tcc ttc atc gtc tcg gtg ctg ctg tct gcc ttc tgc atc cac tgc tac 1980
  A   V   L   F   S   F   I   V   S   V   L   L   S   A   F   C   I   H   C   Y 660

cac aag ttt gcc cac aag cca ccc atc tcc tca gct gag atg acc ttc cgg agg ccc gcc 2040
  H   K   F   A   H   K   P   P   I   S   S   A   E   M   T   F   R   R   P   A 680

cag gcc ttc ccg gtc agc tac tcc tct tcc ggt gcc cgc cgg ccc tcg ctg gac tcc atg 2100
  Q   A   F   P   V   S   Y   S   S   S   G   A   R   R   P   S   L   D   S   M 700

gag aac cag gtc tcc gtg gat gcc ttc aag atc ctg cag cct gag gga act ggc atg ata 2160
  E   N   Q   V   S   V   D   A   F   K   I   L   Q   P   E   G   T   G   M   I 720

gat gaa gag ttc act gtt gca aga ctc tac att agc aaa atg aag tca gaa gta aaa acc 2220
  D   E   E   F   T   V   A   R   L   Y   I   S   K   M   K   S   E   V   K   T 740

atg gtg aaa cgt tgc aag cag tta gaa agc aca caa act gag agc aac aaa aaa atg gaa 2280
  M   V   K   R   C   K   Q   L   E   S   T   Q   T   E   S   N   K   K   M   E 760

gaa aat gaa aag gag tta gca gca tgt cag ctt cgt atc tct caa cat gaa gcc aaa atc 2340
  E   N   E   K   E   L   A   A   C   Q   L   R   I   S   Q   H   E   A   K   I 780

aag tca ttg act gaa tac ctt caa aat gtg gaa caa aag aaa aga cag ttg gag gaa tct 2400
  K   S   L   T   E   Y   L   Q   N   V   E   Q   K   K   R   Q   L   E   E   S 800

gtc gat gcc ctc agt gaa gaa cta gtc cag ctt cga gca caa gag aaa gtc cat gaa atg 2460
  V   D   A   L   S   E   E   L   V   Q   L   R   A   Q   E   K   V   H   E   M 820

gaa aag gag cac tta aat aag gtt cag act gca aat gaa gtt aag caa gct gtt gaa cag 2520
  E   K   E   H   L   N   K   V   Q   T   A   N   E   V   K   Q   A   V   E   Q 840

cag atc cag agc cat aga gaa act cat caa aaa cag atc agt agt ttg aga gat gaa gta 2580
  Q   I   Q   S   H   R   E   T   H   Q   K   Q   I   S   S   L   R   D   E   V 860

gaa gca aaa gca aaa ctt att act gat ctt caa gac caa aac cag aaa atg atg tta gag 2640
  E   A   K   A   K   L   I   T   D   L   Q   D   Q   N   Q   K   M   M   L   E 880
```

Fig. 4C

```
cag gaa cgt cta aga gta gaa cat gag aag ttg aaa gcc aca gat cag gaa aag agc aga 2700
  Q   E   R   L   R   V   E   H   E   K   L   K   A   T   D   Q   E   K   S   R 900

aaa cta cat gaa ctt acg gtt atg caa gat aga cga gaa caa gca aga caa gac ttg aag 2760
  K   L   H   E   L   T   V   M   Q   D   R   R   E   Q   A   R   Q   D   L   K 920

ggt ttg gaa gag aca gtg gca aaa gaa ctt cag act tta cac aac ctg cgc aaa ctc ttt 2820
  G   L   E   E   T   V   A   K   E   L   Q   T   L   H   N   L   R   K   L   F 940

gtt cag gac ctg gct aca aga gtt aaa aag agt gct gag att gat tct gat gac acc gga 2880
  V   Q   D   L   A   T   R   V   K   K   S   A   E   I   D   S   D   D   T   G 960

ggc agc gct gct cag aag caa aaa atc tcc ttt ctt gaa aat aat ctt gaa cag ctc act 2940
  G   S   A   A   Q   K   Q   K   I   S   F   L   E   N   N   L   E   Q   L   T 980

aaa gtg cac aaa cag ttg gta cgt gat aat gca gat ctc cgc tgt gaa ctt cct aag ttg 3000
  K   V   H   K   Q   L   V   R   D   N   A   D   L   R   C   E   L   P   K   L 1000

gaa aag cga ctt cga gct aca gct gag aga gtg aaa gct ttg gaa tca gca ctg aaa gaa 3060
  E   K   R   L   R   A   T   A   E   R   V   K   A   L   E   S   A   L   K   E 1020

gct aaa gaa aat gca tct cgt gat cgc aaa cgc tat cag caa gaa gta gat cgc ata aag 3120
  A   K   E   N   A   S   R   D   R   K   R   Y   Q   Q   E   V   D   R   I   K 1040

gaa gca gtc agg tca aag aat atg gcc aga aga ggg cat tct gca cag att gct aaa cct 3180
  E   A   V   R   S   K   N   M   A   R   R   G   H   S   A   Q   I   A   K   P 1060

att cgt ccc ggg caa cat cca gca gct tct cca act cac cca agt gca att cgt gga gga 3240
  I   R   P   G   Q   H   P   A   A   S   P   T   H   P   S   A   I   R   G   G 1080

ggt gca ttt gtt cag aac agc cag cca gtg gca gtg cga ggt gga gga ggc aaa caa gtg 3300
  G   A   F   V   Q   N   S   Q   P   V   A   V   R   G   G   G   G   K   Q   V 1100

taa      3360  SEQ ID NO:3
*              SEQ ID NO:4
```

Fig. 4D

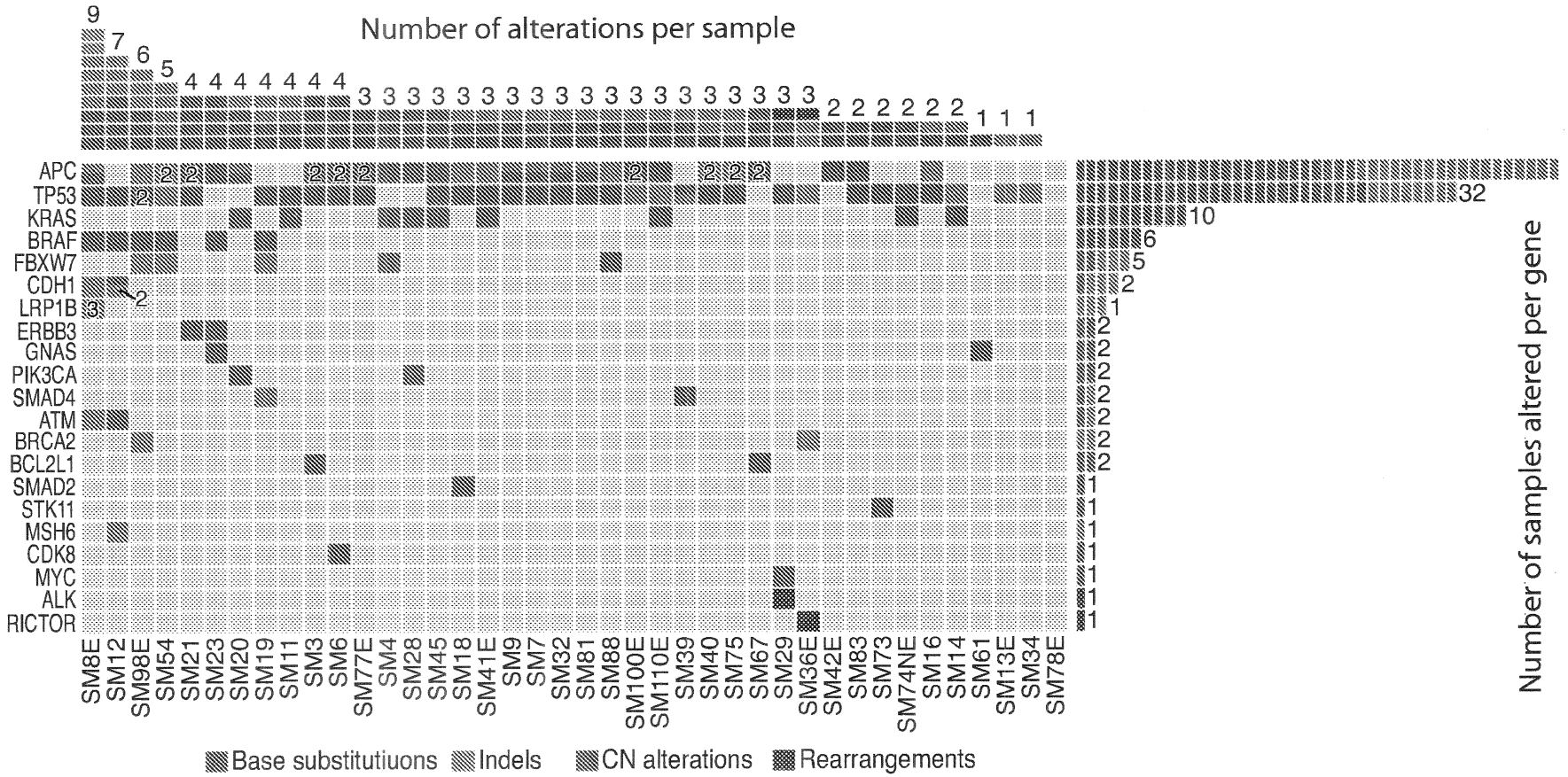

Number of alterations per sample
9 7 6 5 4 4 4 4 4 4 4 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 2 2 2 2 2 2 1 1 1
APC
TP53
KRAS
BRAF
FBXW7
CDH1
LRP1B
ERBB3
GNAS
PIK3CA
SMAD4
ATM
BRCA2
BCL2L1
SMAD2
STK11
MSH6
CDK8
MYC
ALK
RICTOR
SM8E SM12 SM98E SM54 SM21 SM23 SM20 SM19 SM11 SM3 SM6 SM77E SM4 SM28 SM45 SM18 SM41E SM9 SM7 SM32 SM81 SM88 SM100E SM110E SM39 SM40 SM75 SM67 SM29 SM36E SM42E SM83 SM73 SM74NE SM16 SM14 SM61 SM13E SM34 SM78E
32
10
6
5
2
1
2 2 2 2 2 2 2 1 1 1 1 1 1
Number of samples altered per gene
Base substitutiuons
Indels
CN alterations
Rearrangements

Fig. 5

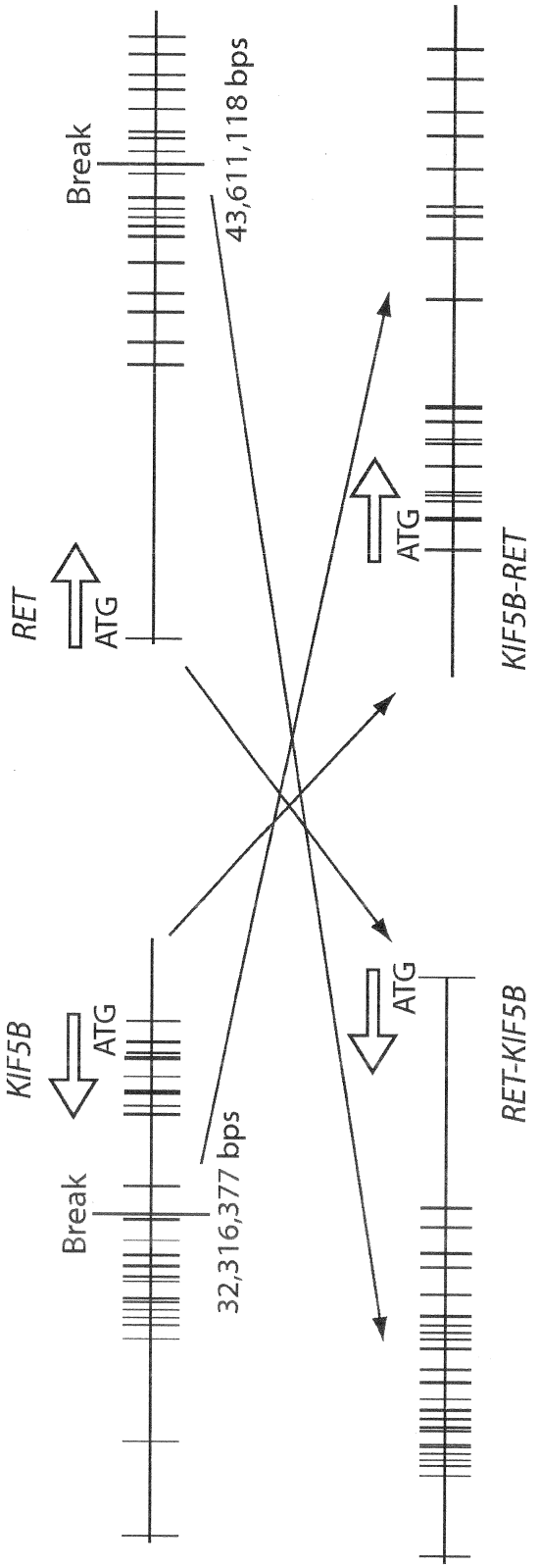

Break
43,611,118 bps
RET
ATG
ATG
KIF5B-RET
KIF5B
ATG
ATG
Break
32,316,377 bps
RET-KIF5B

Fig. 6A

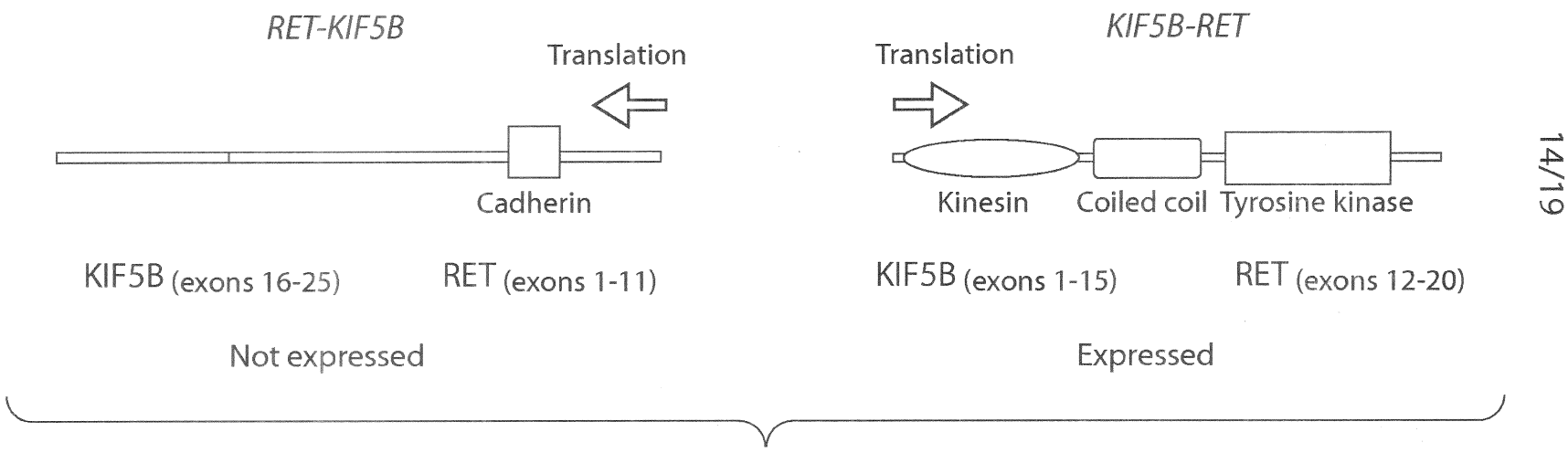

RET-KIF5B
Translation
Cadherin
KIF5B (exons 16-25)
RET (exons 1-11)
Not expressed
KIF5B-RET
Translation
Kinesin
Coiled coil
Tyrosine kinase
KIF5B (exons 1-15)
RET (exons 12-20)
Expressed

Fig. 6B

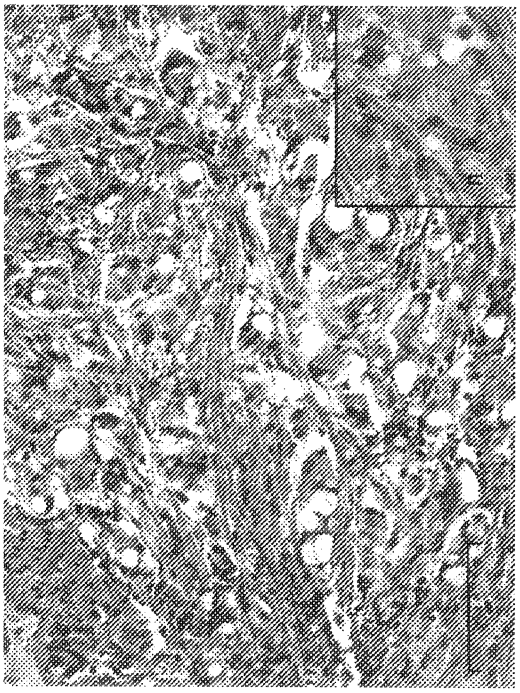


Fig. 6C

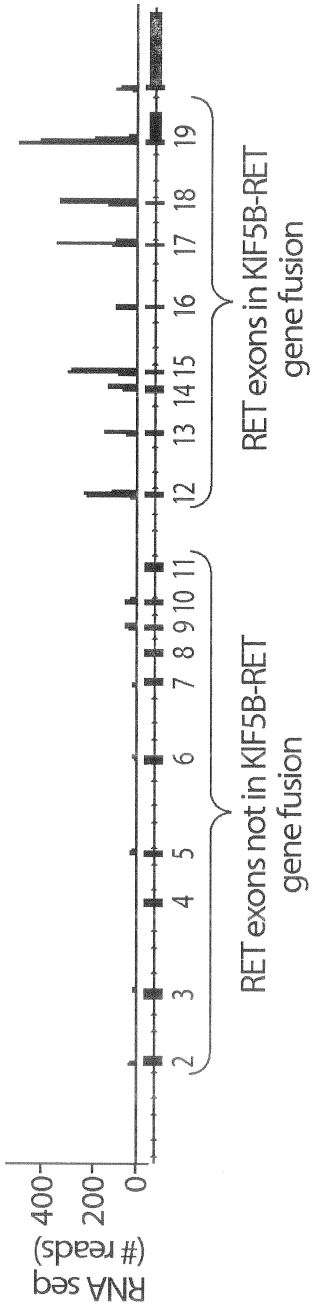

RNA seq
(# reads)
400
200
0
2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19
RET exons not in KIF5B-RET
gene fusion
RET exons in KIF5B-RET
gene fusion

Fig. 6D

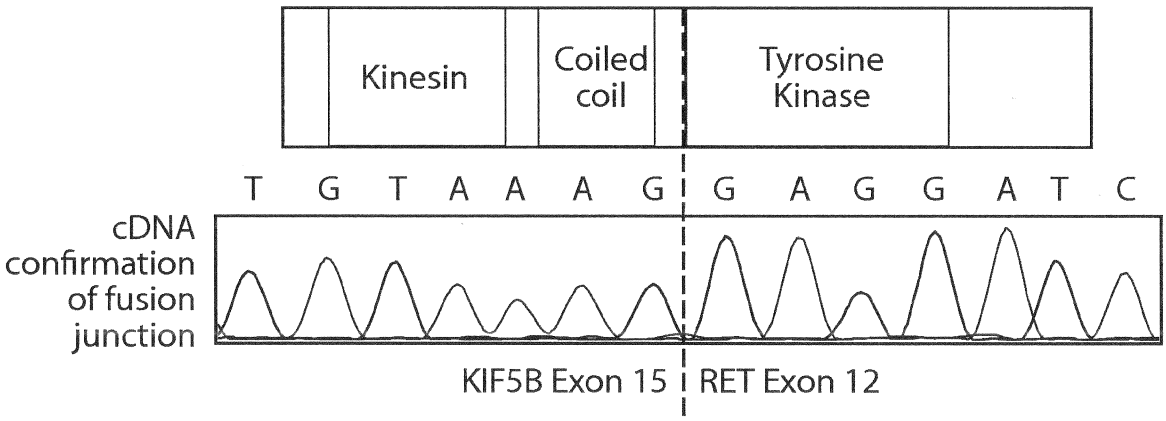

Kinesin
Coiled coil
Tyrosine Kinase
T G T A A A G G A G G A T C
cDNA confirmation of fusion junction
KIF5B Exon 15
RET Exon 12

Fig. 7A

1 MADLAECNIKVMCRFRPLNESEVNRGDKYIAKFQGEDTVVIASKPYAFDRVFQSSTSQEQ

61 VYNDCAKKIVKDVLEGYNGTIFAYGQTSSGKTHTMEGKLHDPEGMGIIPRIVQDIFNYIY

121 SMDENLEFHIKVSYFEIYLDKIRDLLDVSKTNLSVHEDKNRVPYVKGCTERFVCSPDEVM

181 DTIDEGKSNRHVAVTNMNEHSSRSHSIFLINVKQENTQTEQKLSGKLYLVDLAGSEKVSK

241 TGAEGAVLDEAKNINKSLSALGNVISALAEGSTYVPYRDSKMTRILQDSLGGNCRTTII

301 CCSPSSYNESETKSTLLFGQRAKTIKNTVCVNVELTAEQWKKKYEKEKEKNKILRNTIQW

361 LENELNRWRNGETVPIDEQFDKEKANLEAFTVDKDITLTNDKPATAIGVIGNFTDAERRK

421 CEEEIAKLYKQLDDKDEEINQQSQLVEKLKTQMLDQEELLASTRRDQDNMQAELNRLQAE

481 NDASKEEVKEVLQALEELAVNYDQKSQEVEDKTKEYELLSDELNQKSATLASIDAELQKL

541 KEMTNHQKKRAAEMMASLLKDLAEIGIAVGNNDVK*EDPKWEFPRKNLVLGKTLGEGEFGK*

601 VVKATAFHLKGRAGYTTVAVKMLKENASPSELRDLLSEFNVLKQVNHPHVIKLYGACSQD

661 GPLLLIVEYAKYGSLRGFLRESRKVGPGYLGSGGSRNSSSLDHPDERALTMGDLISFAWQ

721 ISQGMQYLAEMKLVHRDLAARNILVAEGRKMKISDFGLSRDVYEEDSYVKRSQGRIPVKW

781 MAIESLFDHIYTTQSDVWSFGVLLWEIVTLGGNPYPGIPPERLFNLLKTGHRMERPDNCS

841 EEMYRLMLQCWKQEPDKRPVFADISKDLEKMMVKRRDYLDLAASTPSDSLIYDDGLSEEE

901 TPLVDCNNAPLPRALPSTWIENKLYGMSDPNWPGESPVPLTRADGTNTGFPRYPNDSVYA

961 NWMLSPSAAKLMDTFDS

Fig. 7B

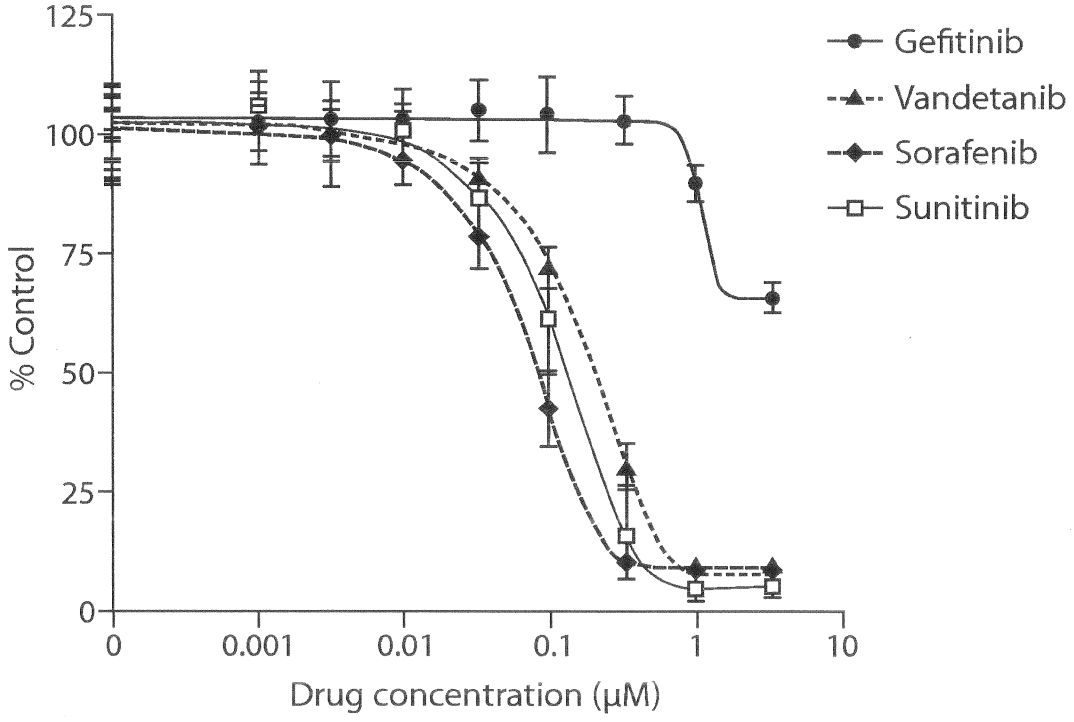

125
100
75
50
25
0
% Control
0
0.001
0.01
0.1
1
10
Drug concentration (μM)
Gefitinib
Vandetanib
Sorafenib
Sunitinib

Fig. 8

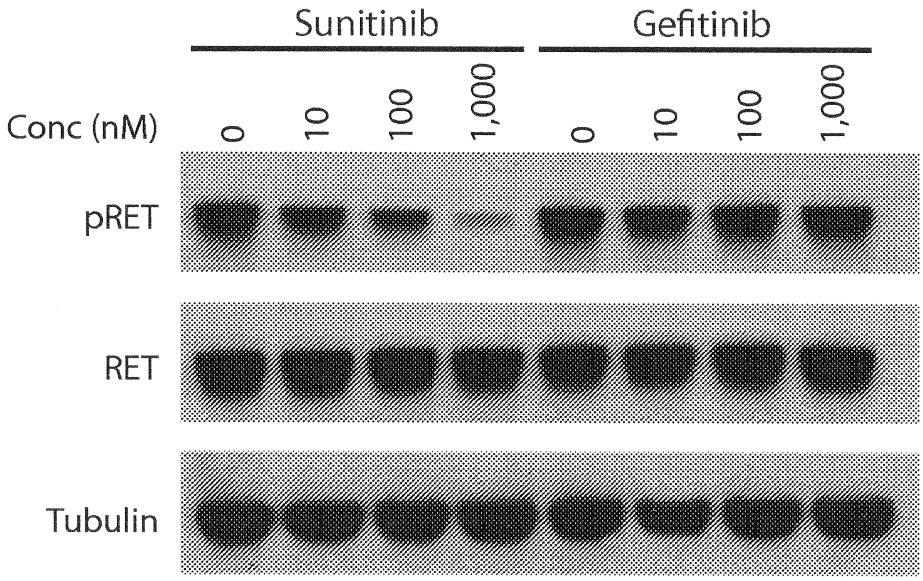

Sunitinib
Gefitinib
Conc (nM)
0
10
100
1,000
0
10
100
1,000
pRET
RET
Tubulin

Fig. 9