

### Supplemental Information

#### Accession Numbers

The dbSNP submitted SNP (ss) numbers of *CHRNA4* reported in this paper are: 270137503, 270137504, 270137505, 270137506, 270137507, 270137508, 270137509, 270137510, 270137511, 270137512, 270137513, 270137514, 270137515, 270137516, 270137517, 270137518, 270137519, 270137520, 270137521, 270137522, 270137523, 270137524, 270137525, 270137526, 270137527, 270137528, 270137529, 270137530, 270137531, 270137532, 270137533, 270137534, 270137535, 270137536, 270137537, 270137538, 270137539, 270137540, 270137541, 270137542, 270137543, 270137544, 270137545.

**Table S1.** Primers and PCR conditions

Exon		Primer sequence	Amplicons size (bp)	Annealing temperature*	Number of cycles
1	F	TGAAGTTGGCGCGCACGG	247	72 °C→66 °C	13 + 20
	R	GCAGTCAGGAGCCTGCCTC			
2	F	GGAGCTGAAAGGAAGTGGACG	469	72 °C→62 °C	11 + 22
	R	CTGGGACGCTCTGAATCAACC			
3	F	CCCGTCCACCATATCTTGC	184	69 °C→56 °C	13 + 20
	R	GGCAGTGCCCTCCCACTC			
4	F	CGCCCCACCTCATCCA	170	69 °C→56 °C	13 + 20
	R	CACCAAGGCCCTGTAGAGGAC			
5	F	GGTCTCACACCCTTCGCTCTC	331	69 °C→55 °C	15 + 20
	R	CGGCACAGCACTCGTACTTC			
5	F	CGGCTCTGGACCTACGACAA	532	72 °C→60 °C	13 + 20
	R	GAGCAGGCCTGGCACGATGT			
5	F	TTCTACCTGCCCTCCGAGTGT	760	71 °C→64 °C	15 + 20
	R	CCGAGTGGGTGTTGCGAGAG			
5	F	GCCCTGGCCTCTCGAACACC	647	71 °C→64 °C	15 + 20
	R	GCAGGCACAGGCGCACTCT			
6	F	GCTGGAGTGACGGCGTCTGT	169	69 °C→58 °C	12 + 20
	R	GCTCCGGTCCCTCCTAGAT			

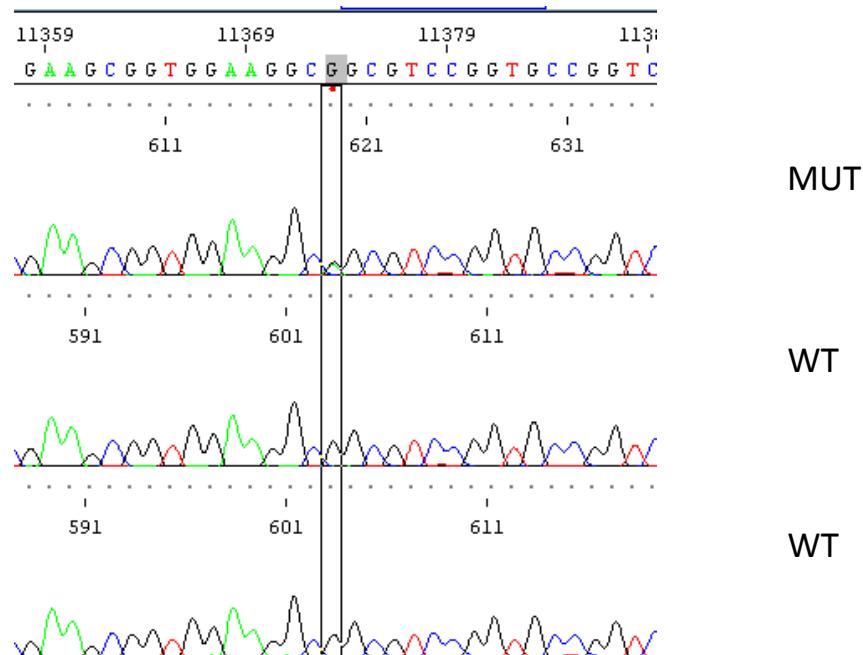
\*Touchdown PCR

F, forward; PCR, polymerase chain reaction; R, reverse.

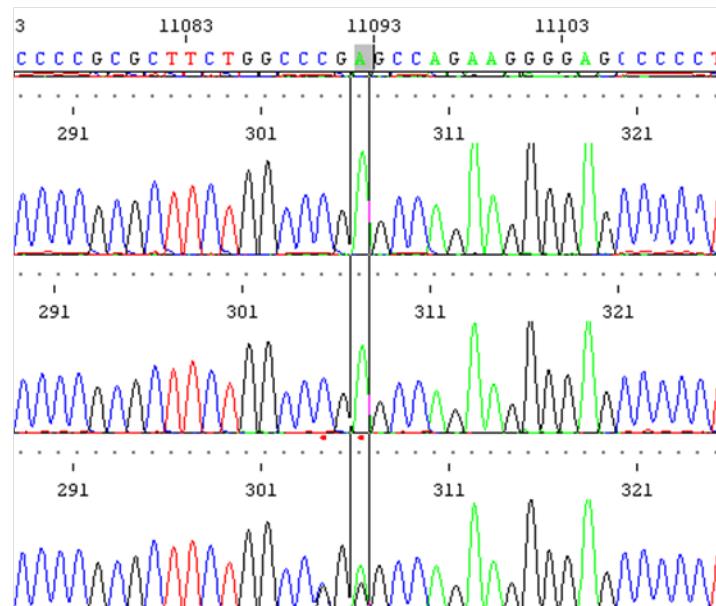
**Figure S1.** Sanger sequencing results of rare nonsynonymous variants found in the Exon 5 cytoplasmic region of *CHRNA4*.

**Controls (35 in total)**

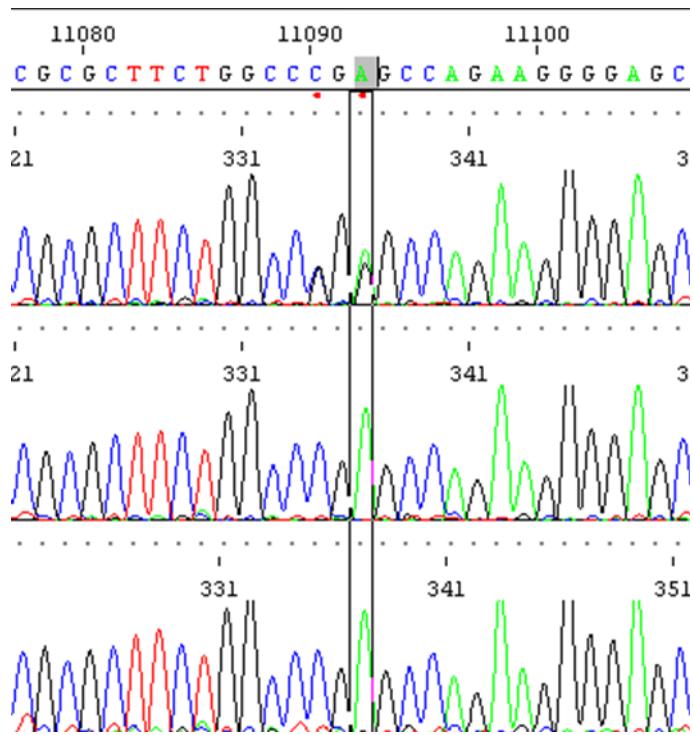
1. 5-3 control 1 C15, 61981322



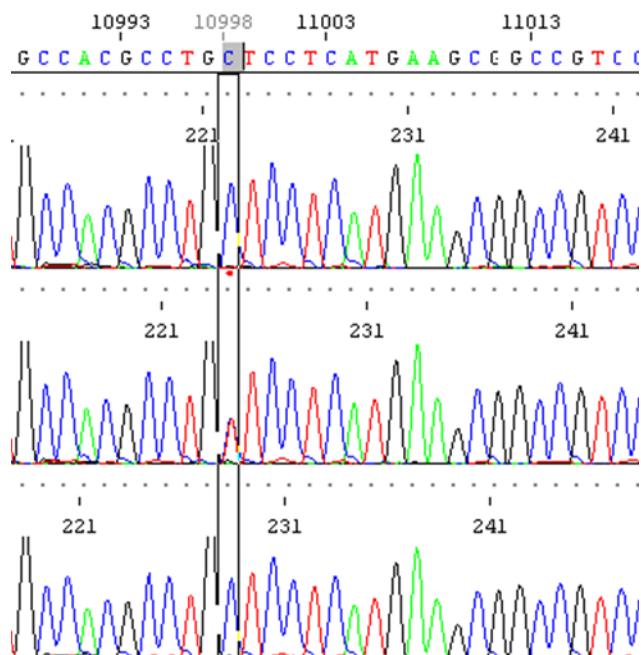
2. 5-3 control 1 C22, 61981603



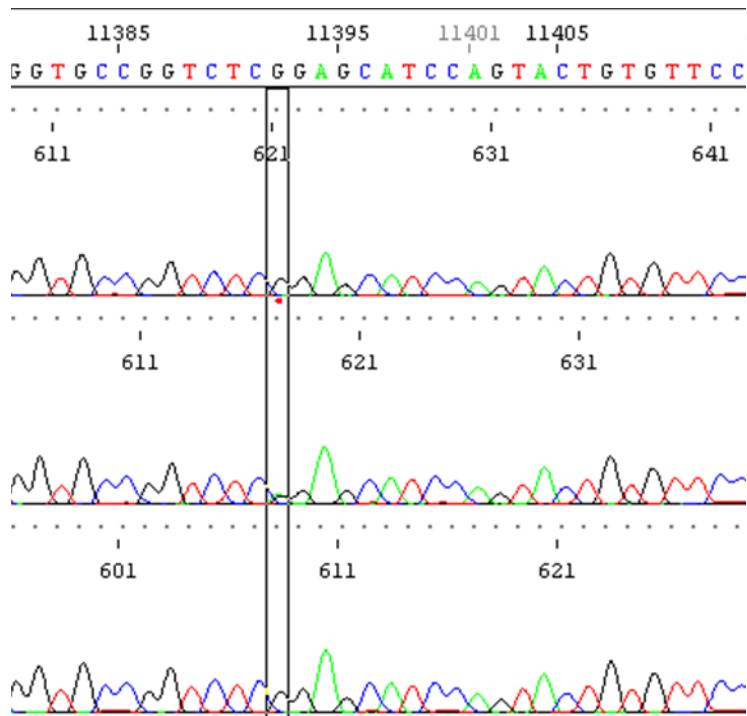
3. 5-3 control 1 C24, 61981603



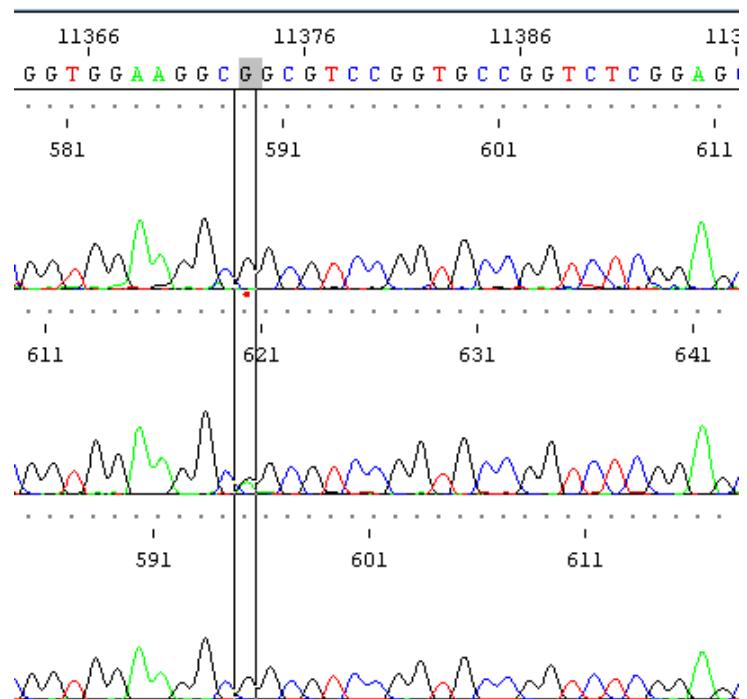
4. 5-3 control 1 H16, 61981697



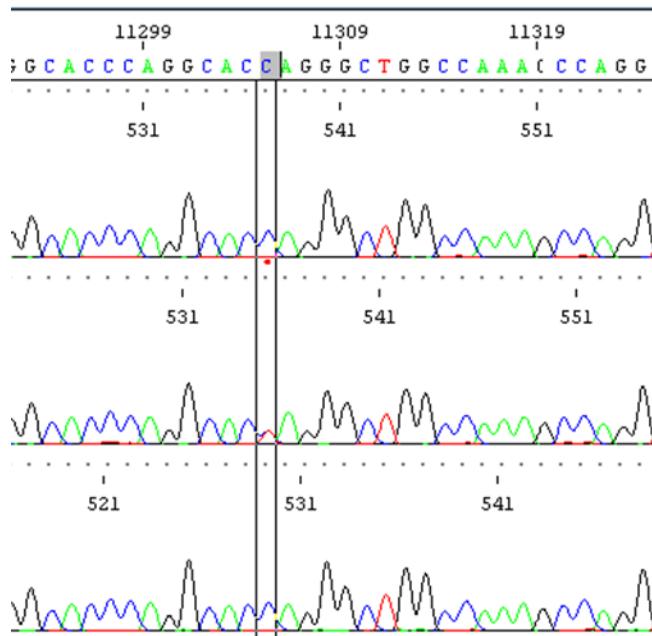
5. 5-3 control 1 J11, 61981303



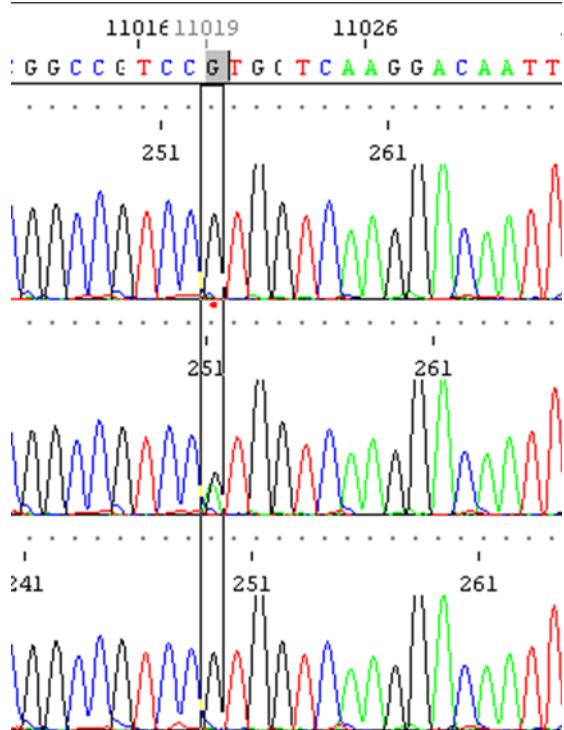
6. 5-3 control 1 K07, 61981322



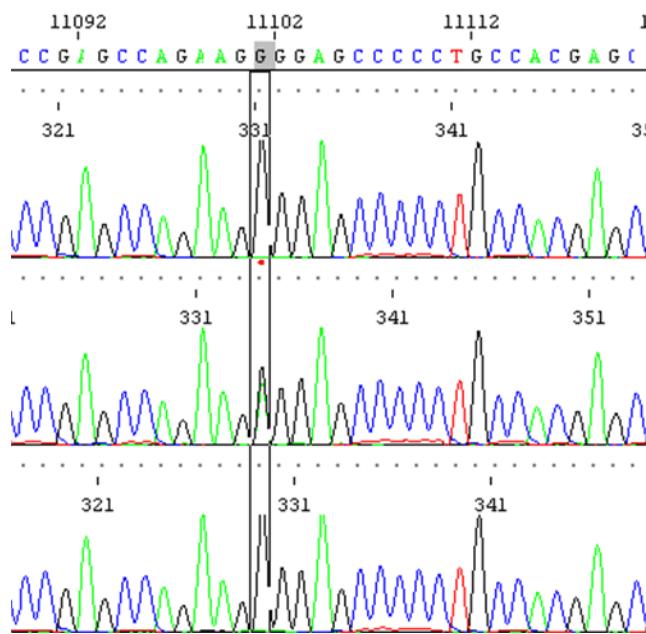
7. 5-3 control 1 L16, 61981390



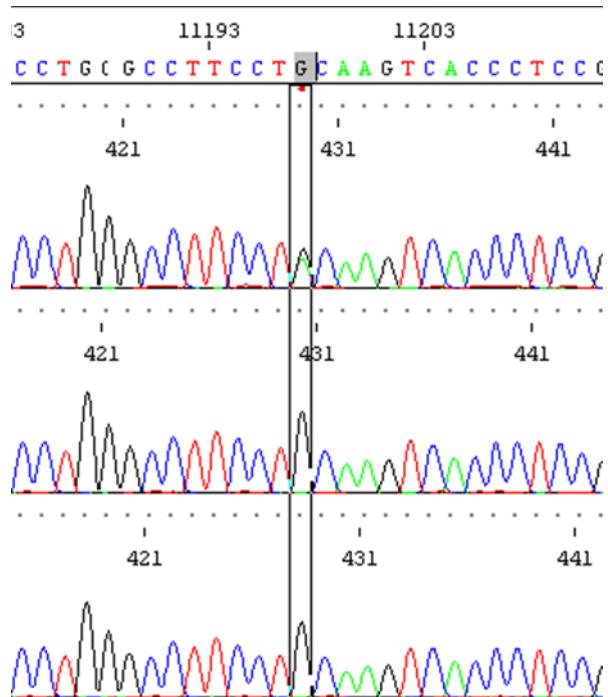
8. 5-3 control 1 L19, 61981676



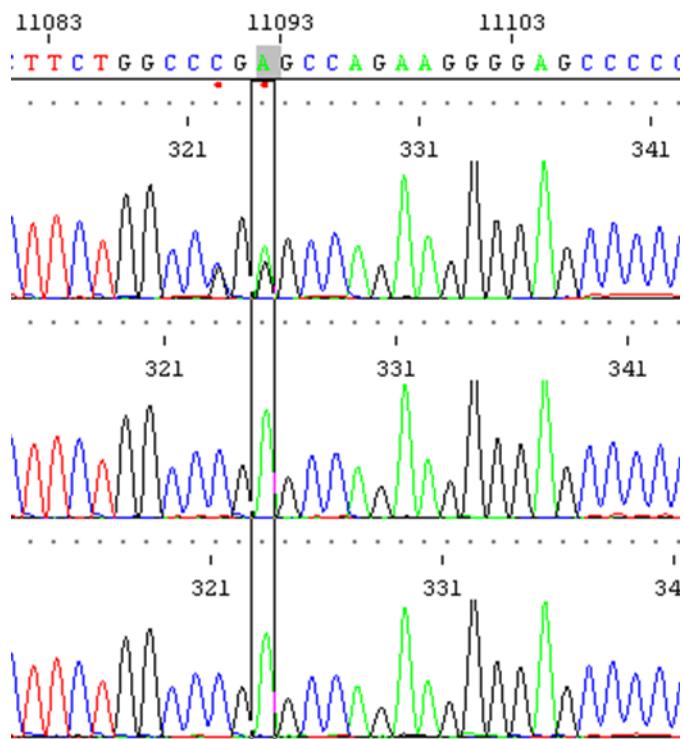
9. 5-3 control 1 N15, 61981594



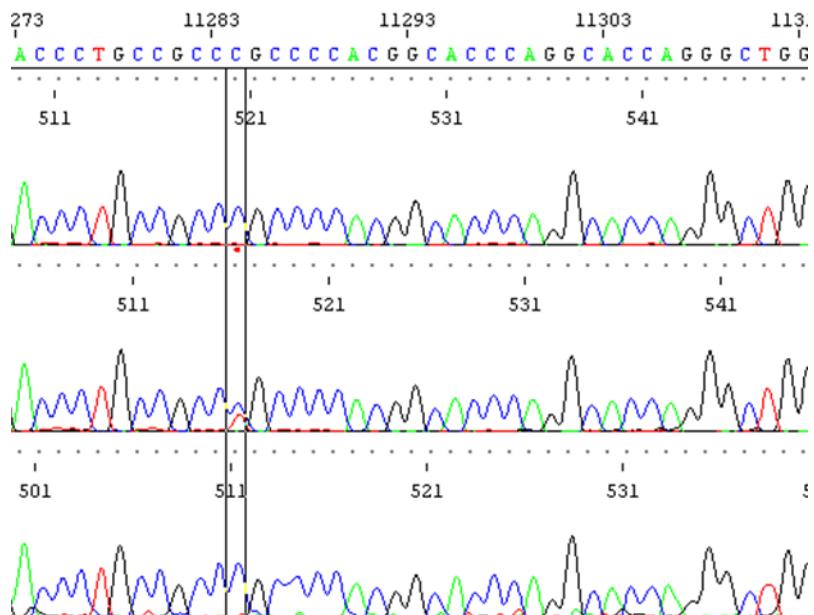
10. 5-3 control 1 P11, 61981498



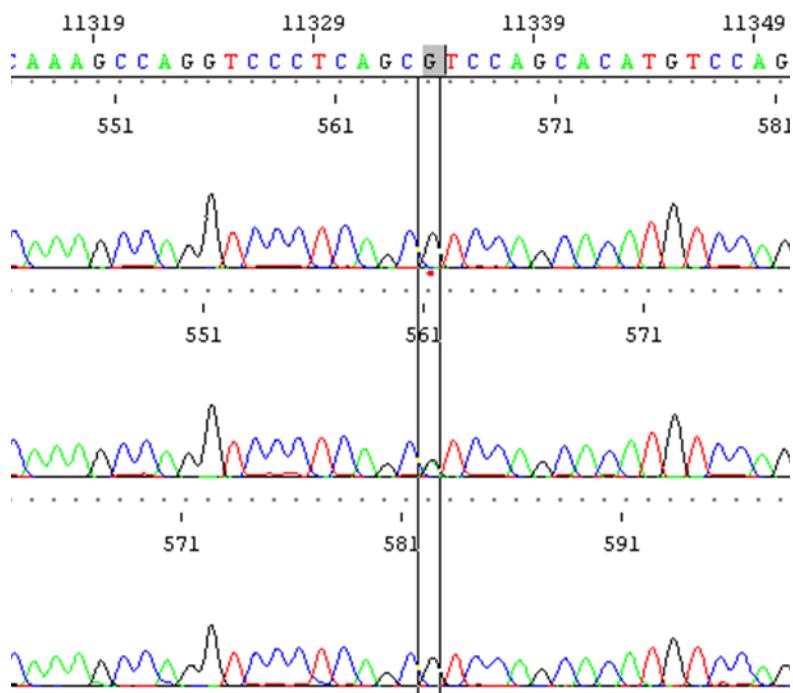
11. 5-3 control 1 P11, 61981603



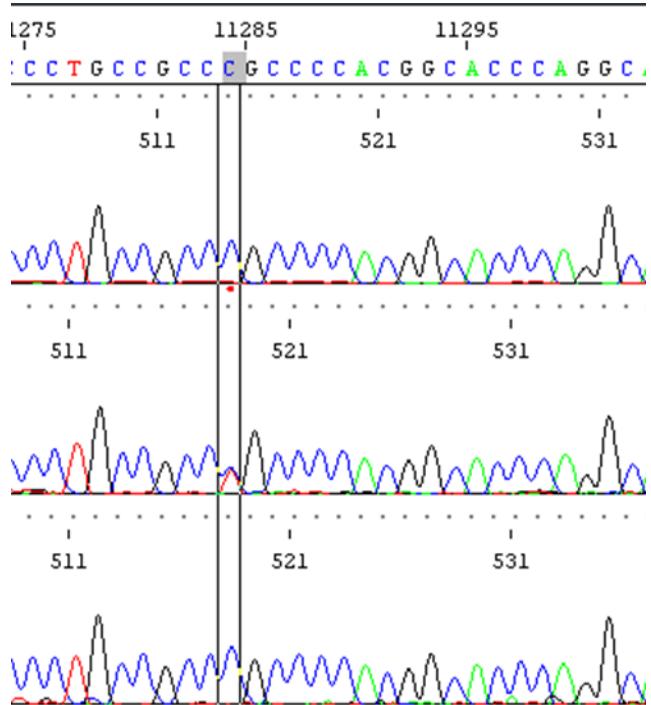
12. 5-3 control 2 D10, 61981411



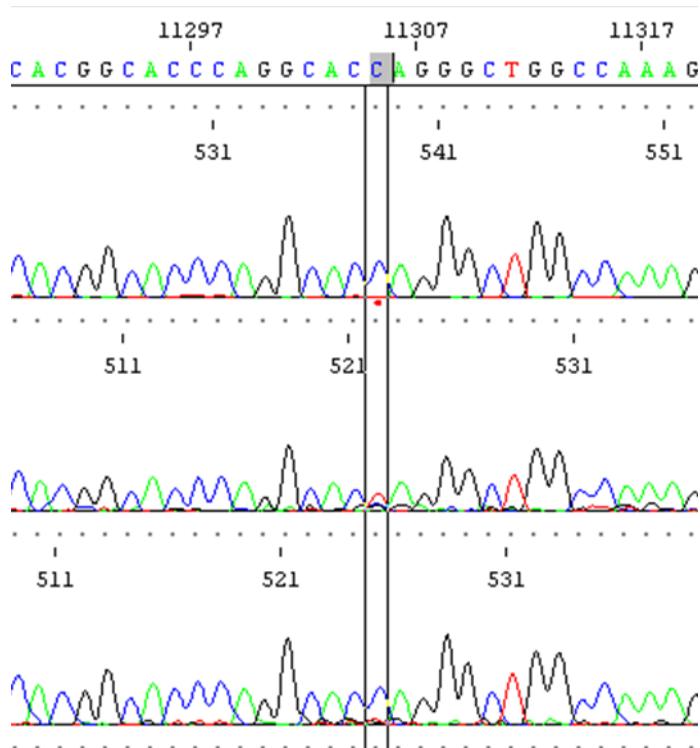
13. 5-3 control 2 D21, 61981361



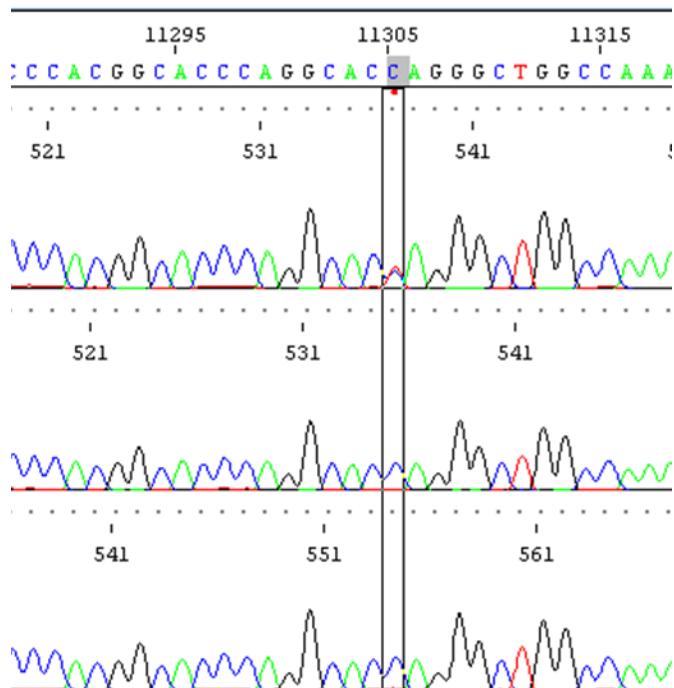
14. 5-3 control 2 B10, 61981411



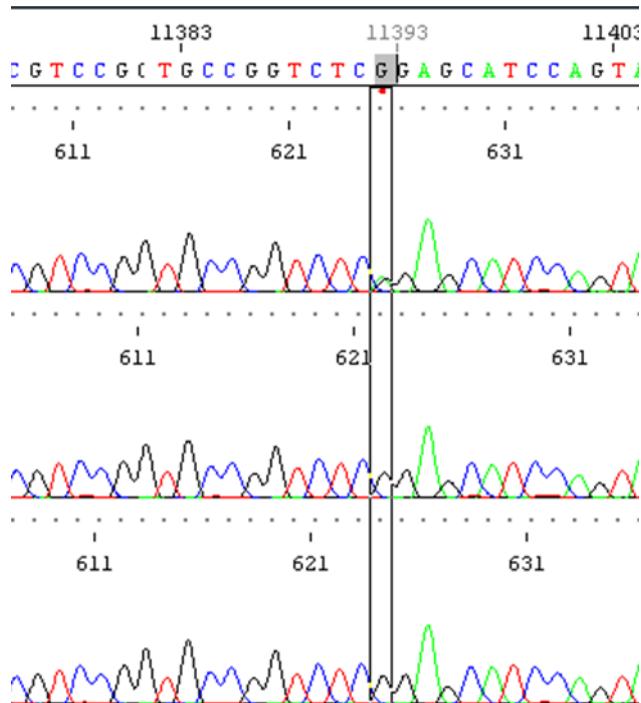
15. 5-3 control 2 C03, 61981390



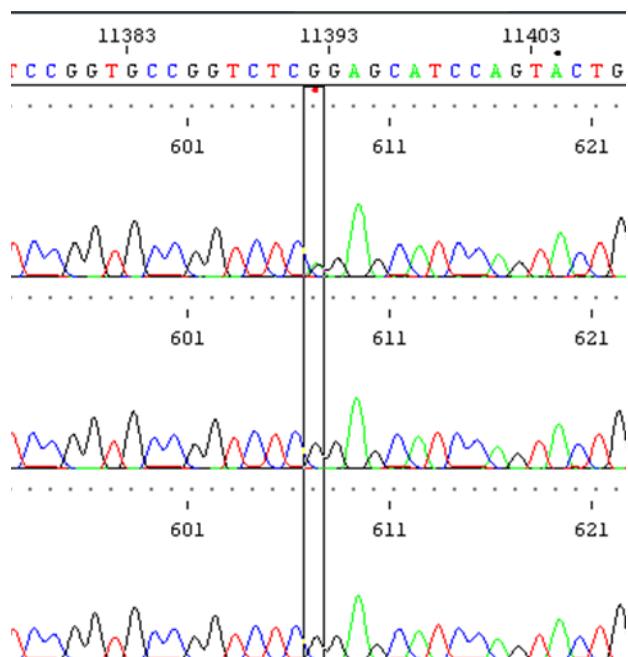
16. 5-3 control 2 E19, 61981390



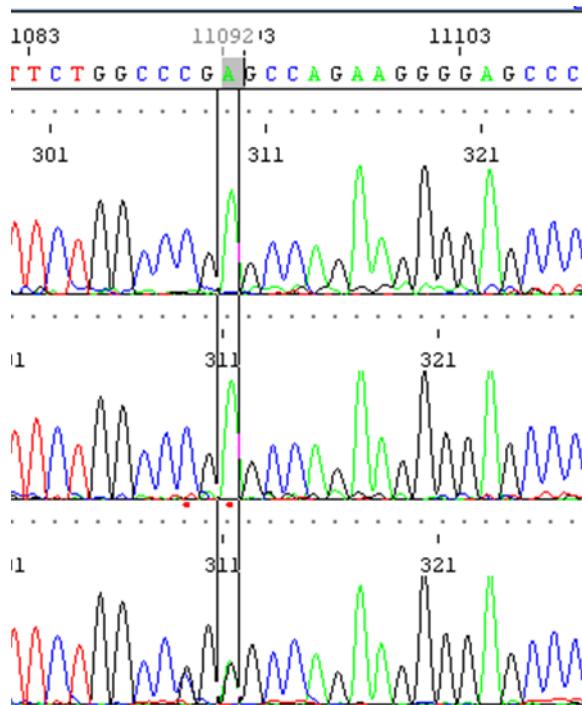
17. 5-3 control 2 G09, 61981303



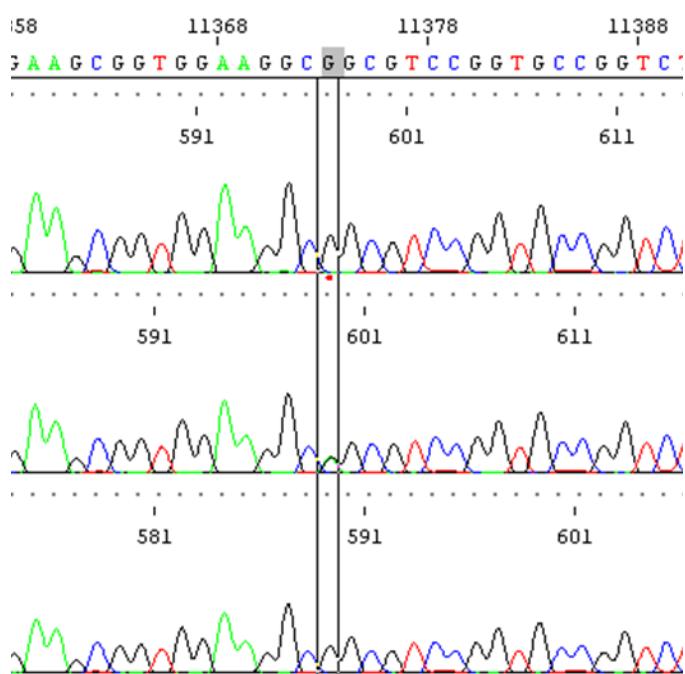
18. 5-3 control 2 I07, 61981303



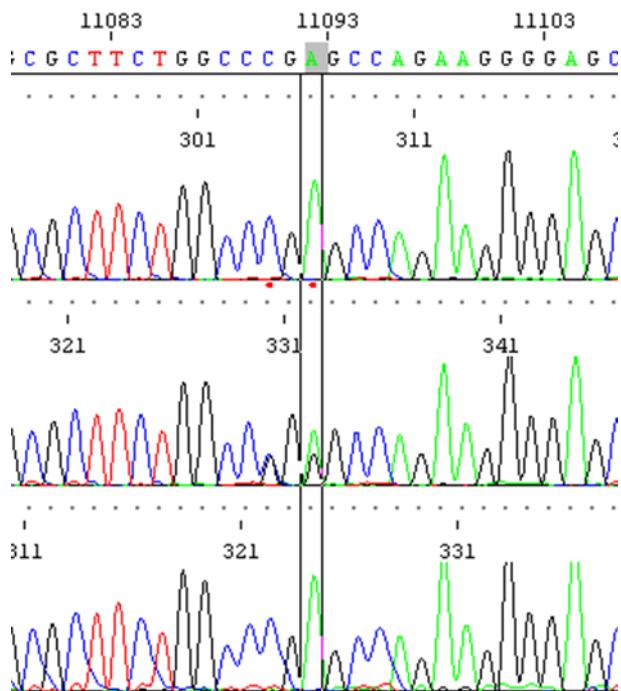
19. 5-3 control 2 I03, 61981603



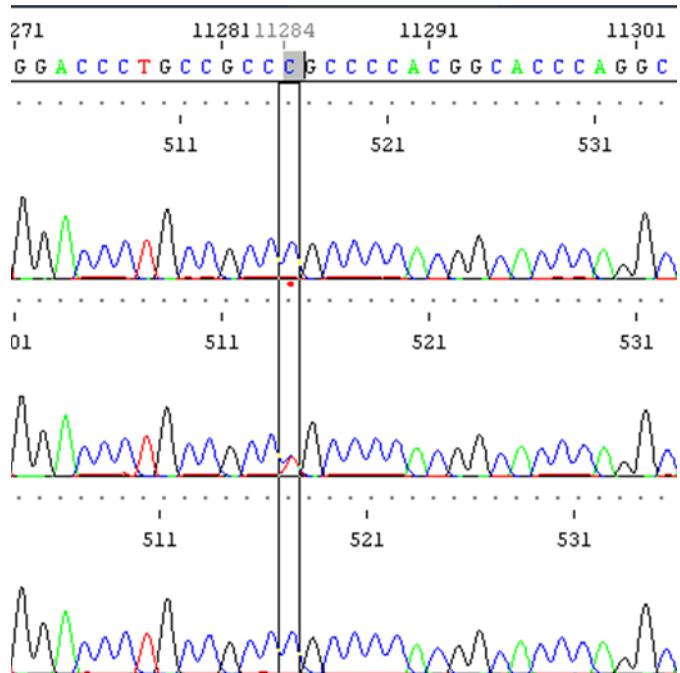
20. 5-3 control 2 I21, 61981322



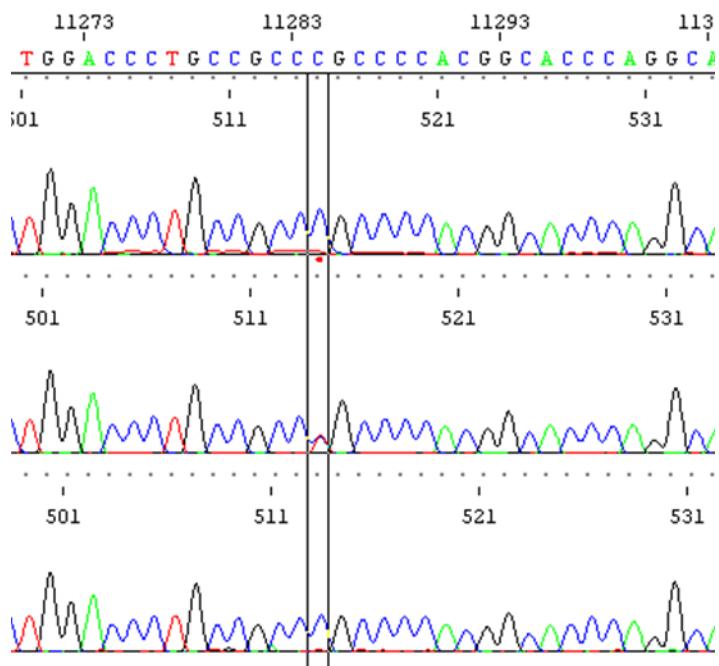
21. 5-3 control 2 K02, 61981603



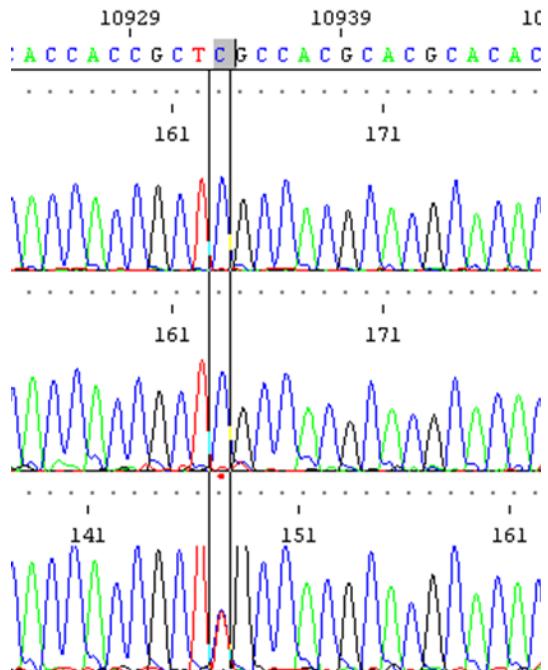
22. 5-3 control 2 L03, 61981411



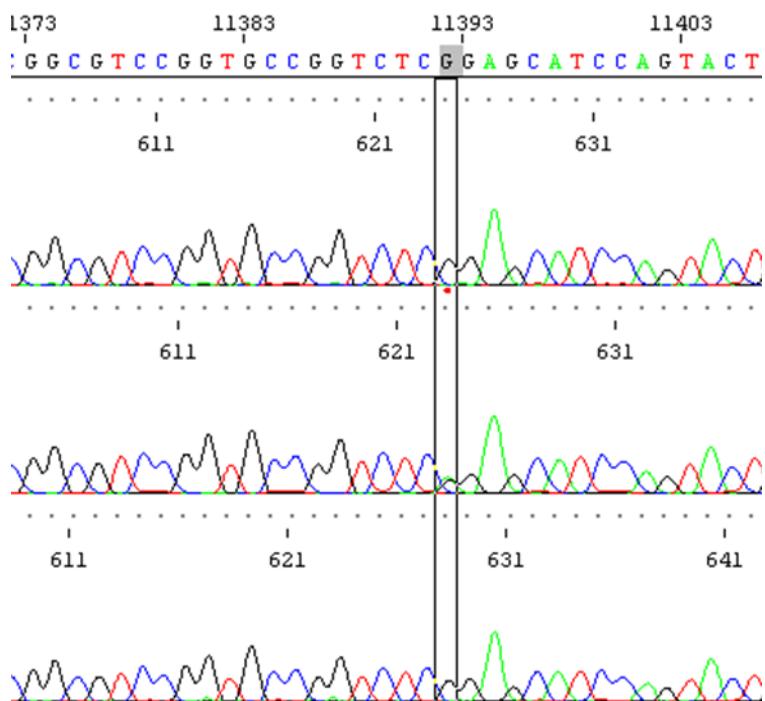
23. 5-3 control 2 L22, 61981411



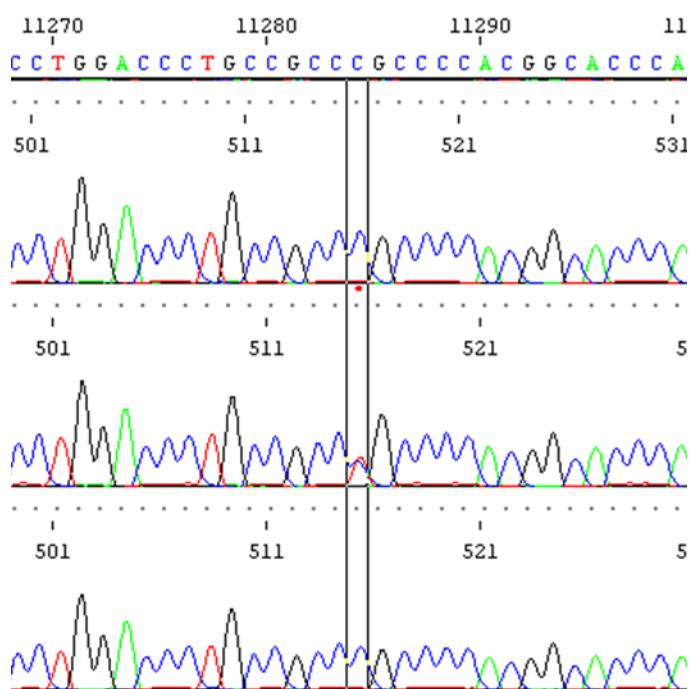
24. 5-3 control 2 M09, 61981762



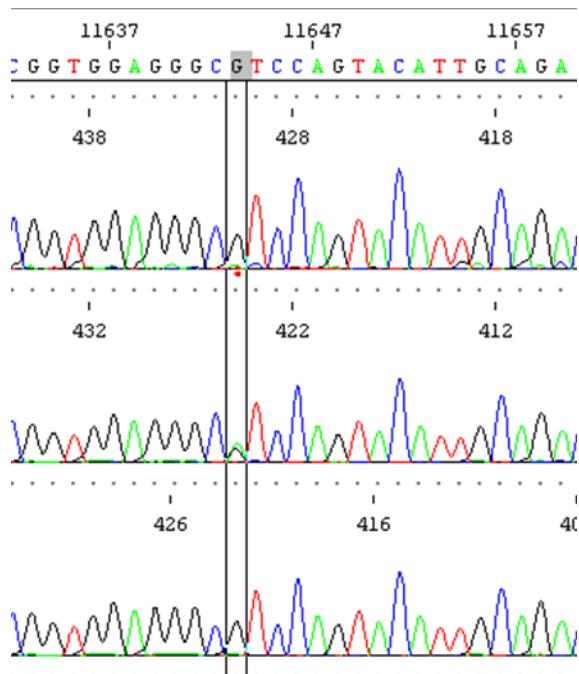
25. 5-3 control 3 B07, 61981303



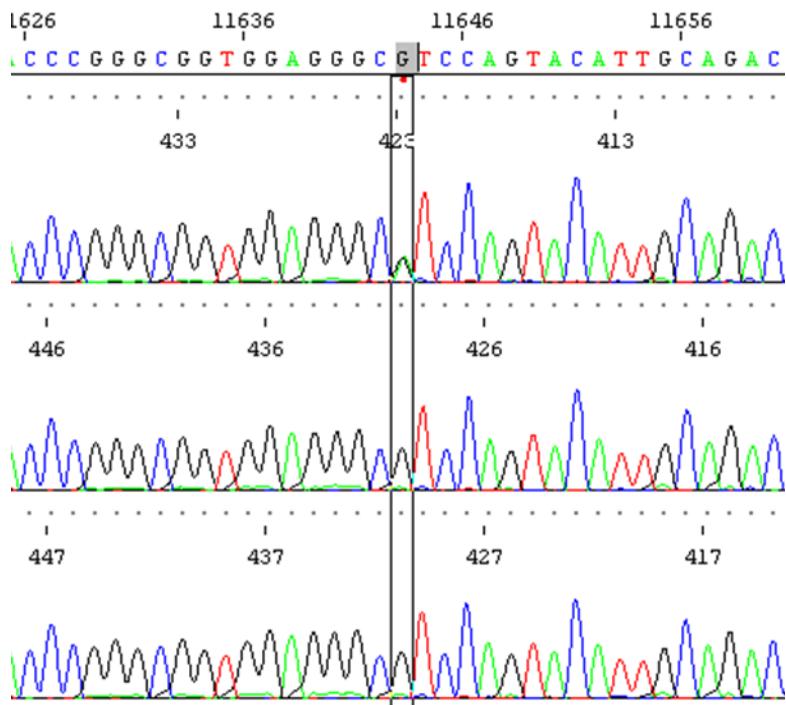
26. 5-3 control 3 G07, 61981411



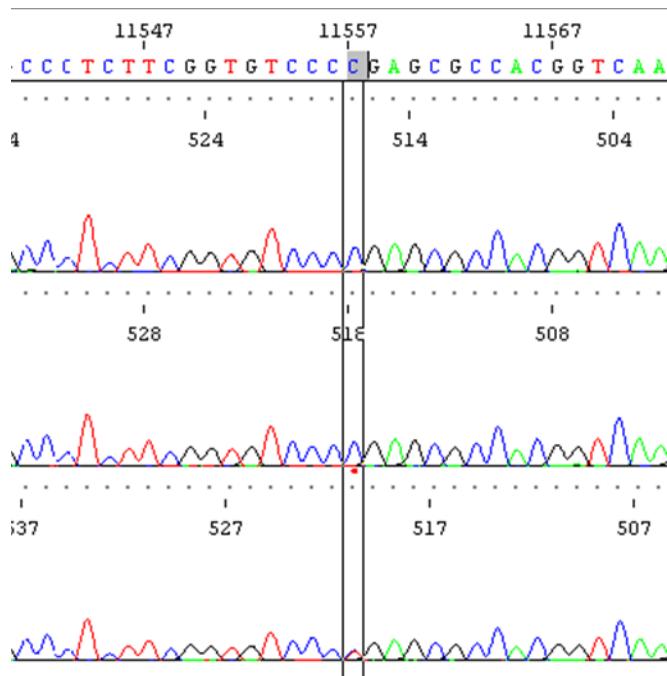
27. 5-4 control 1 G06, 61981052



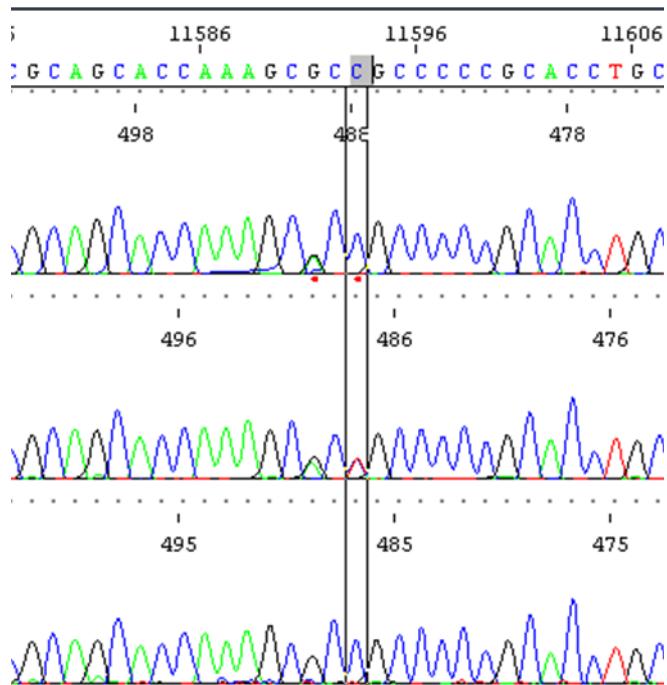
28. 5-4 control 1 J04, 61981052



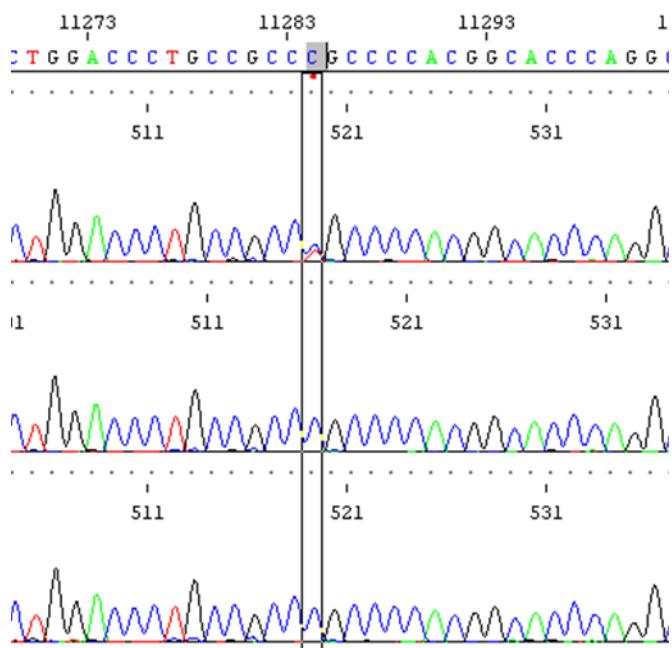
29. 5-4 control 1 P21, 61981138



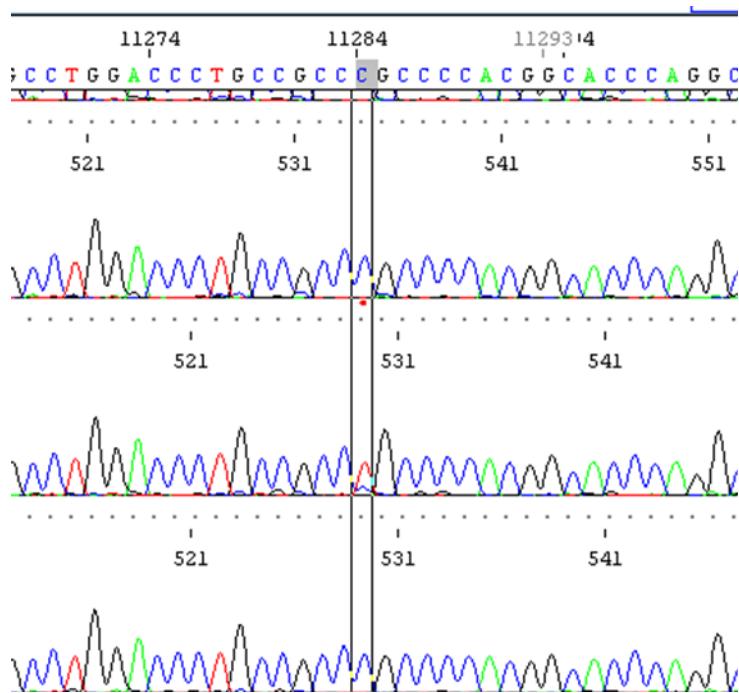
30. 5-4 control 3 G07, 61981102



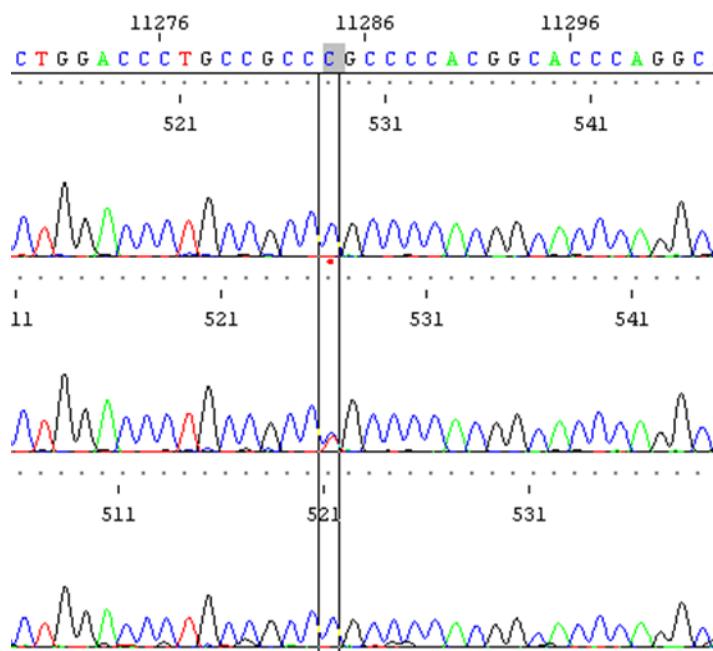
31. Discovery stage 5-3 control 1 A03, 61981411



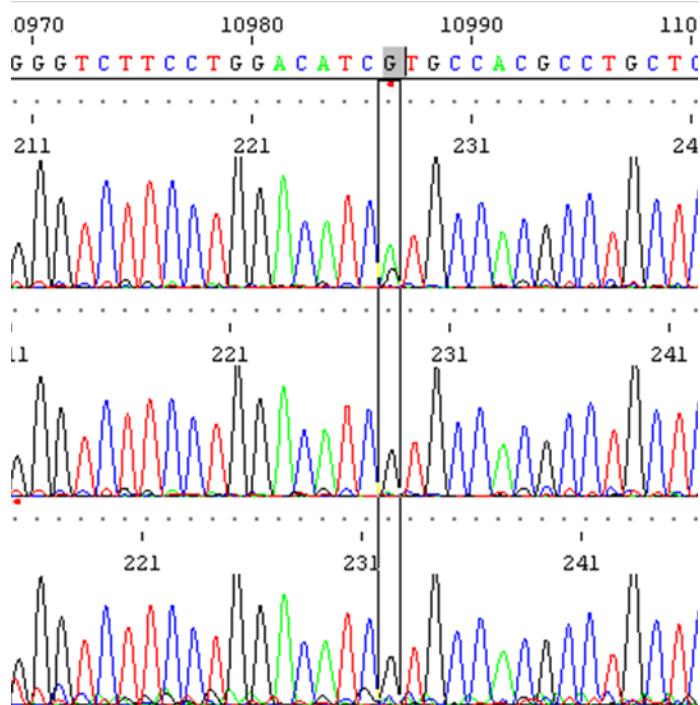
32. Discovery stage 5-3 control 1 C10, 61981411



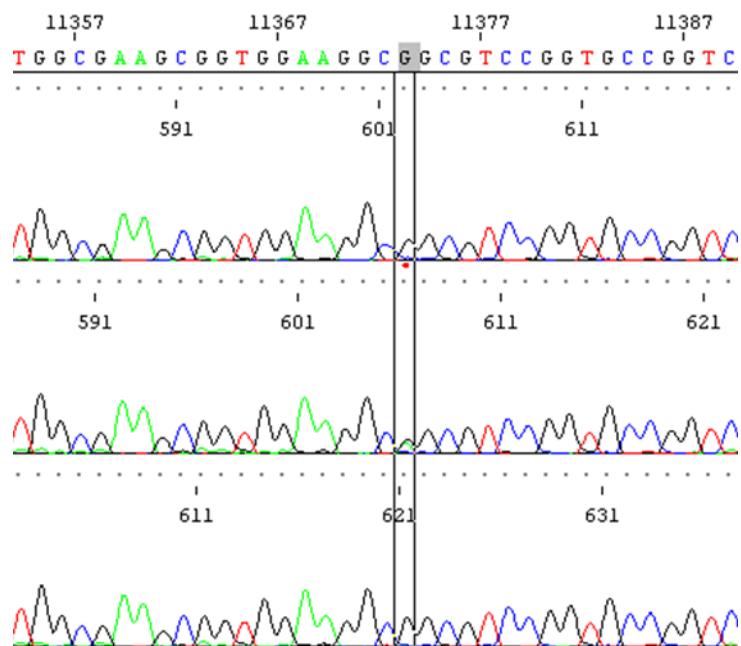
33. Discovery stage 5-3 control 2 E09, 61981411



34. Discovery stage 5-3 control 2 B07, 61981709

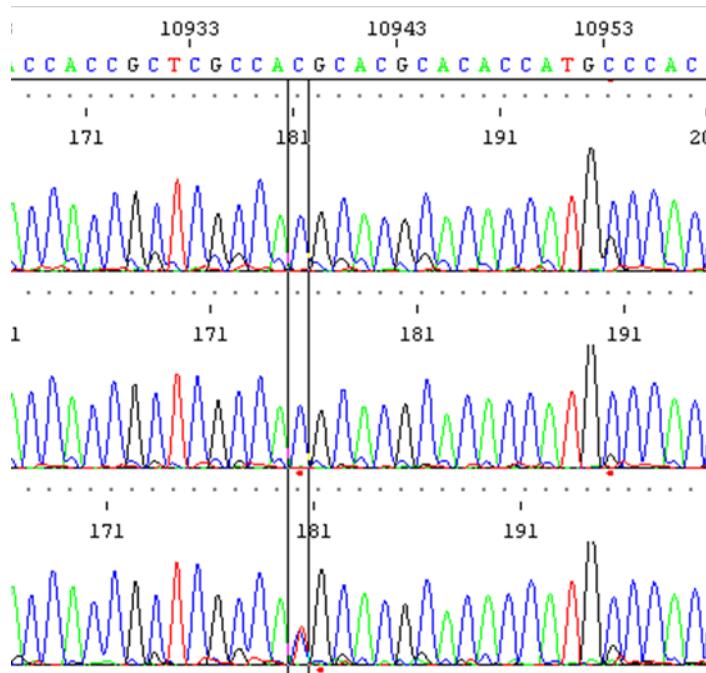


35. Discovery stage 5-3 control cleanup 3 H08, 61981322

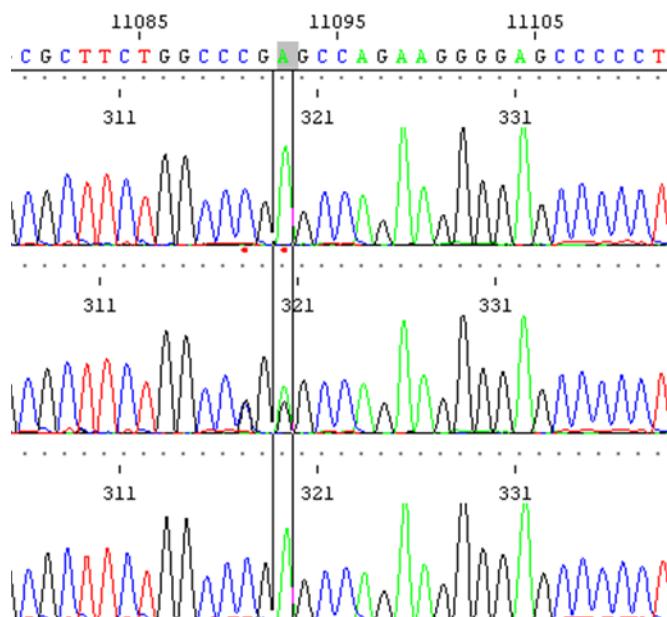


**Cases (18 in total)**

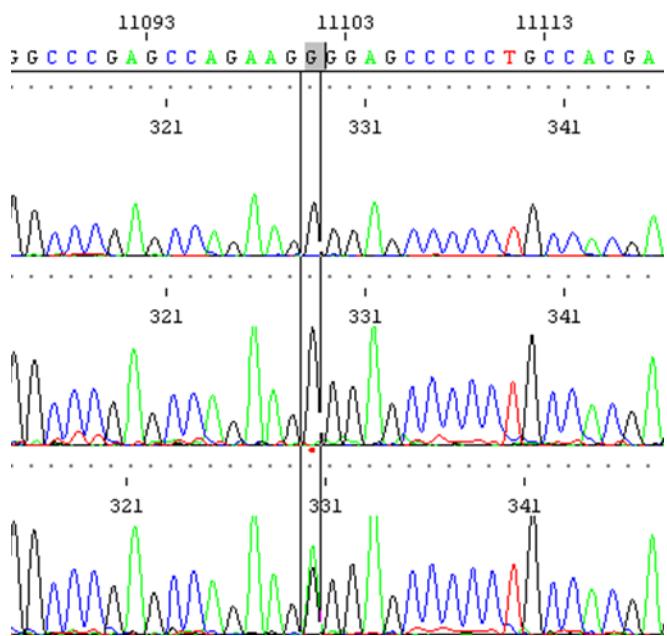
1. 5-3 cases 1 H06, 61981757



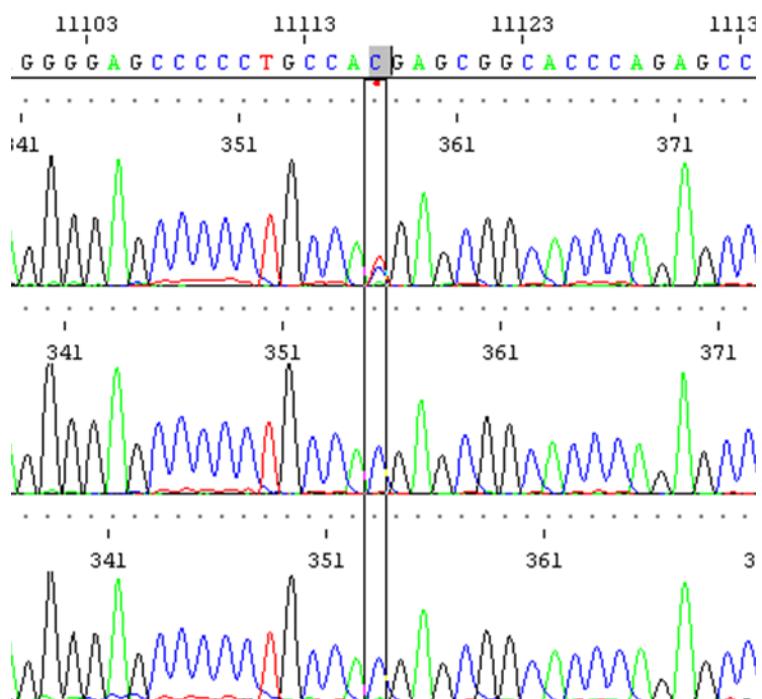
2. 5-3 cases 1 I17, 61981603



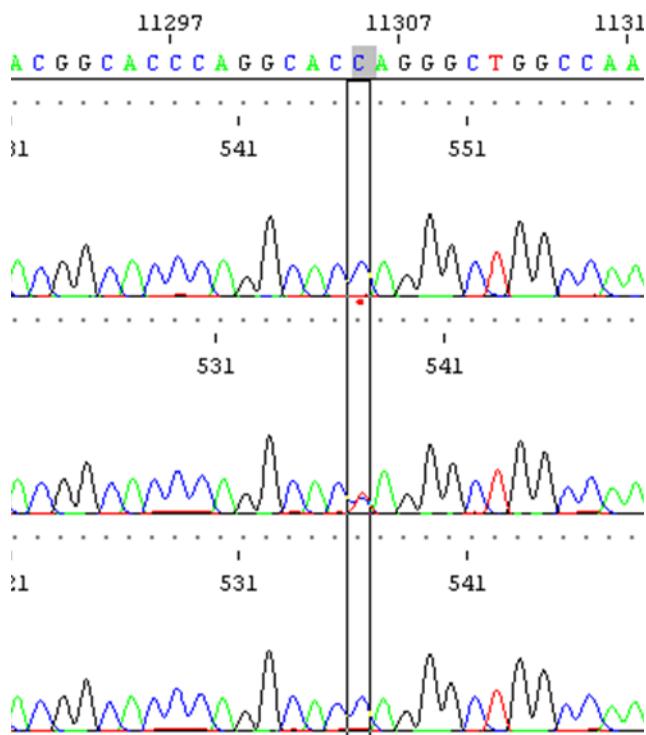
3. 5-3 cases 1 L24, 61981594



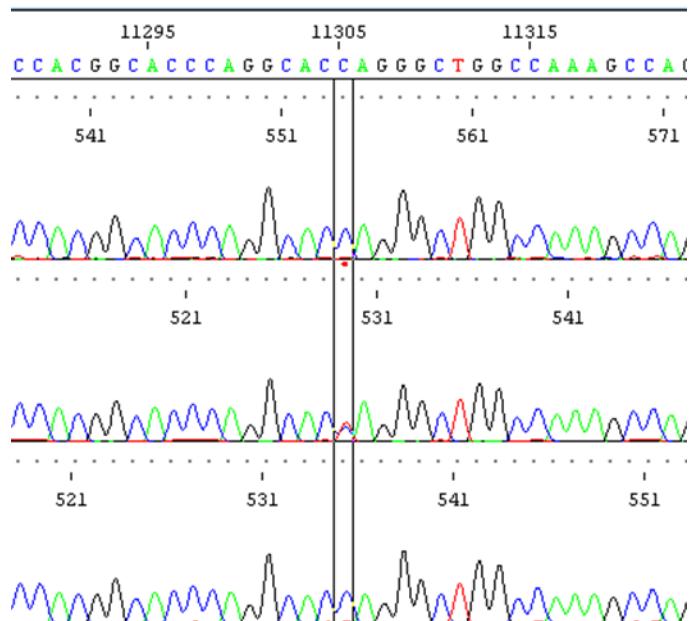
4. 5-3 cases 2 O10, 61981579



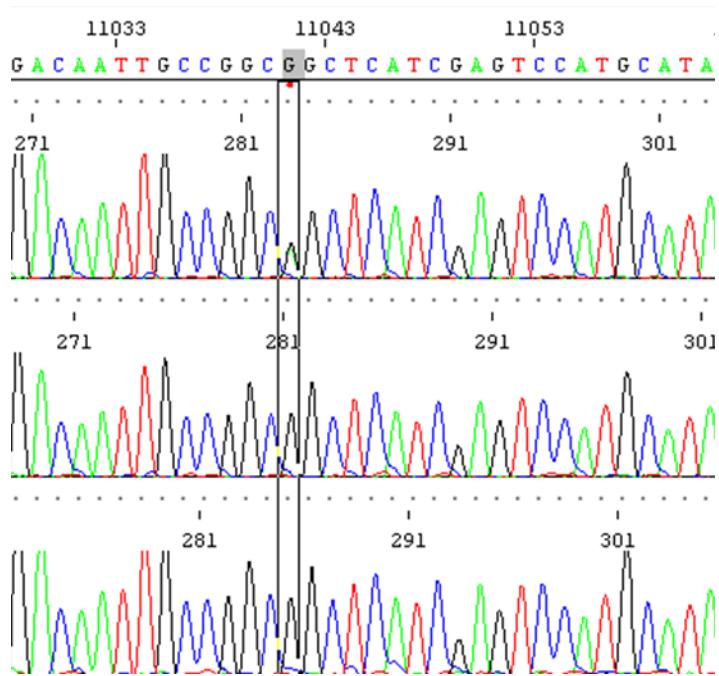
5. 5-3 cases 2 E15, 61981390



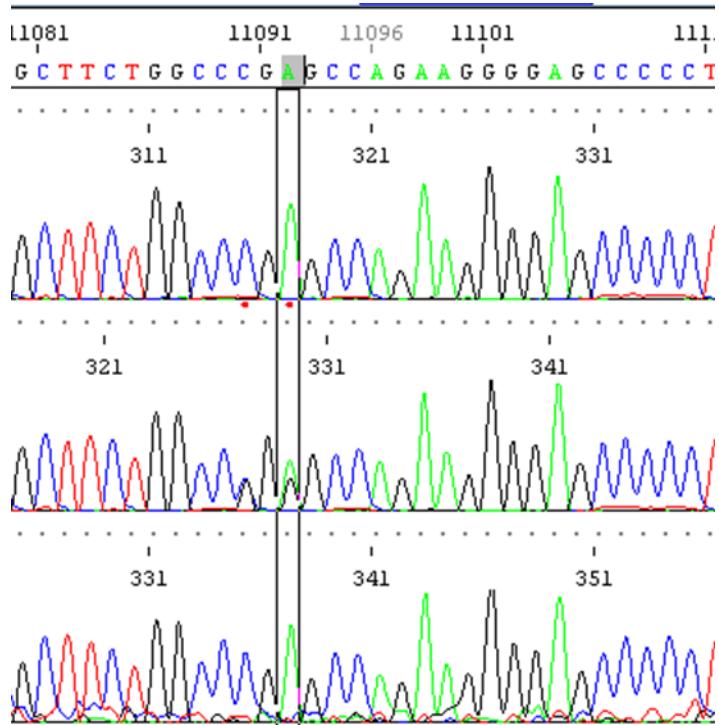
6. 5-3 cases 2 I21, 61981390



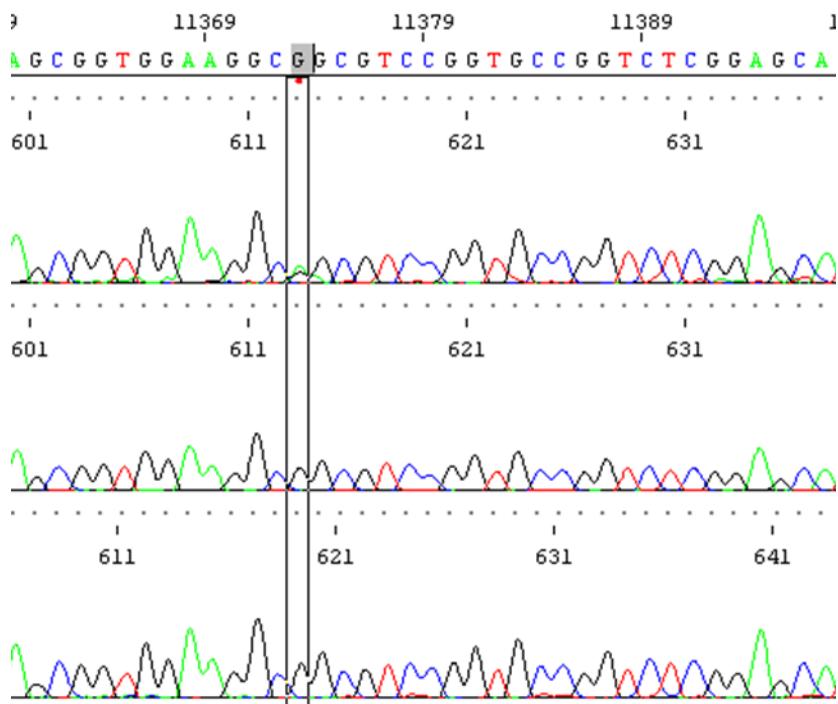
7. 5-3 cases 2 A22, 61981654



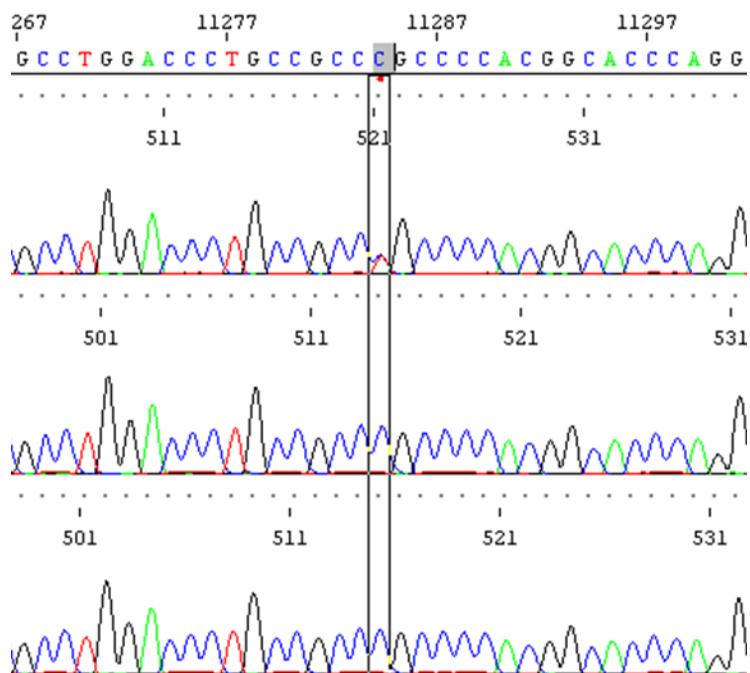
8. 5-3 cases 2 I08, 61981603



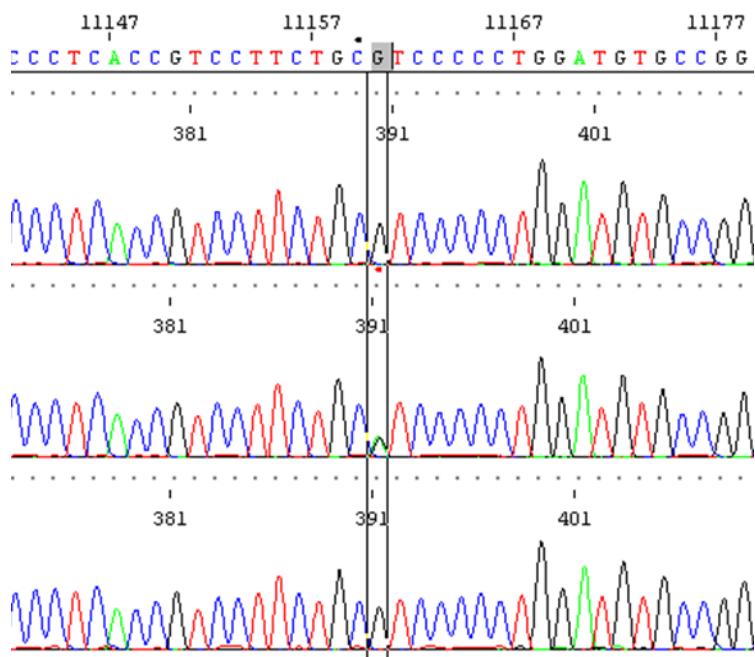
9. 5-3 cases 2 B18, 61981322



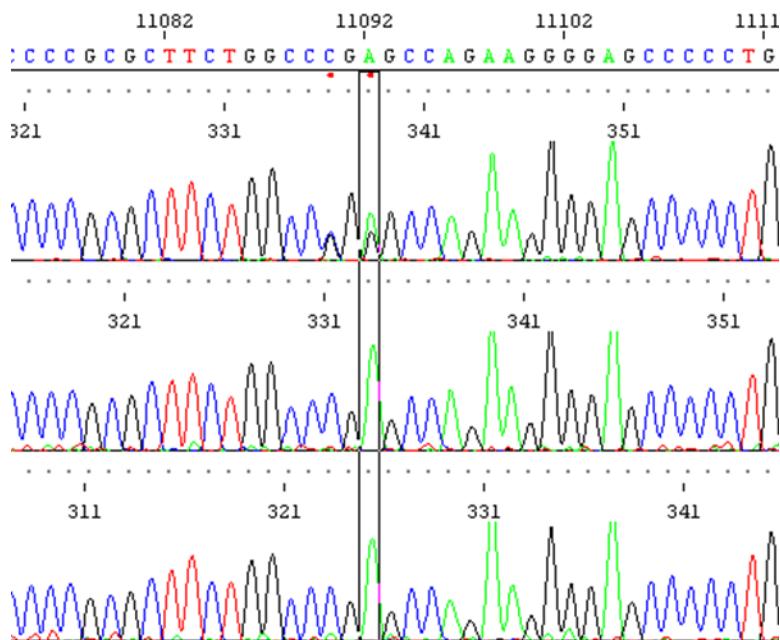
10. 5-3 cases 2 H22, 61981411



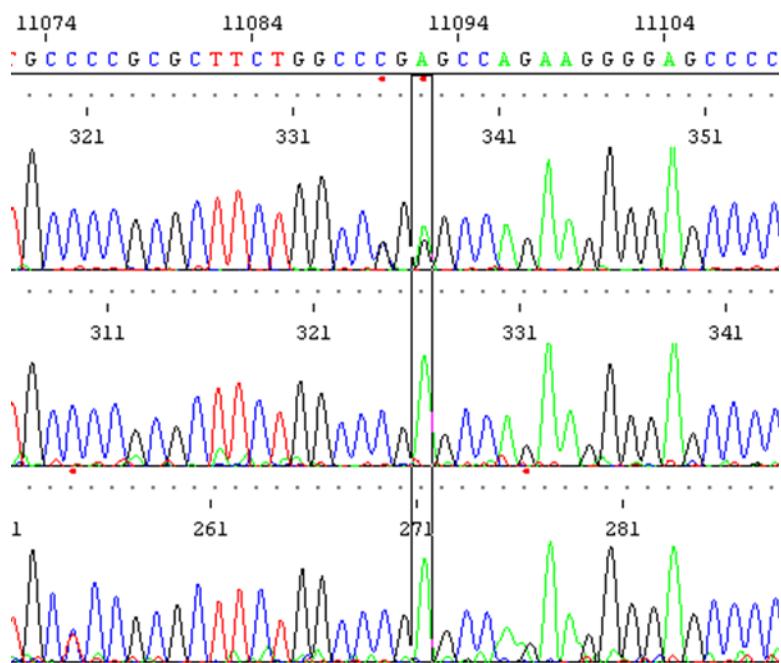
11. 5-3 cases 2 H18, 61981535



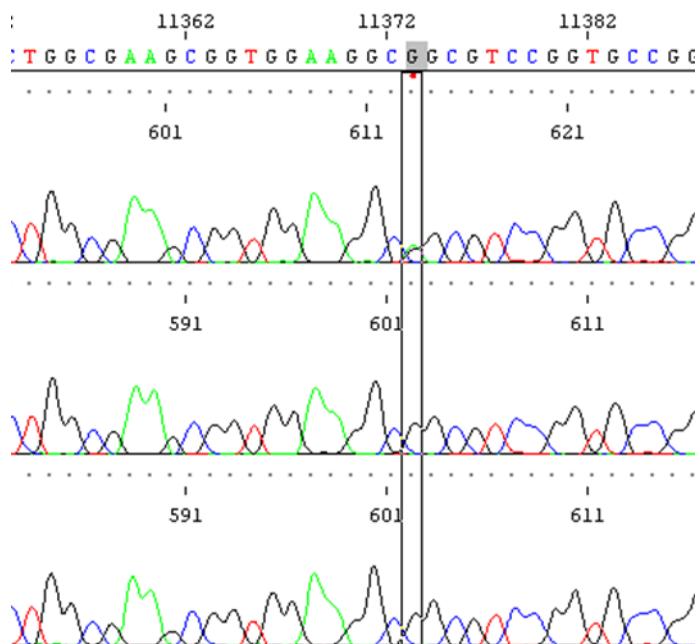
12. 5-3 cases 3 O14, 61981603



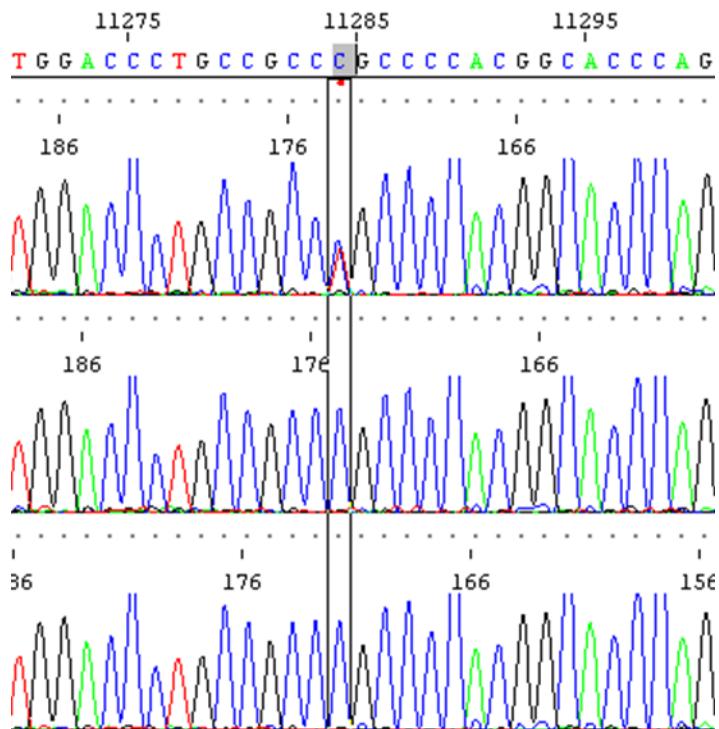
13. 5-3 cases 3 I20, 61981603



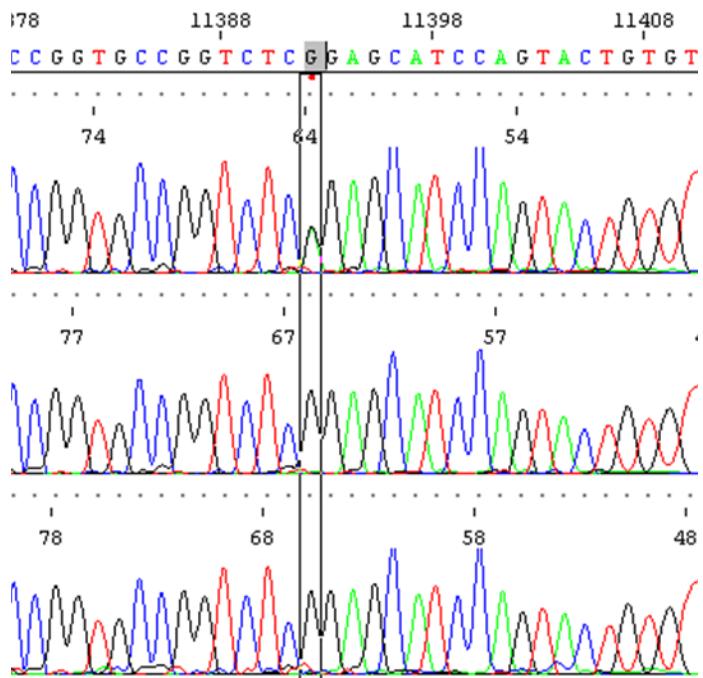
14. 5-3 cases 3 N07, 61981322



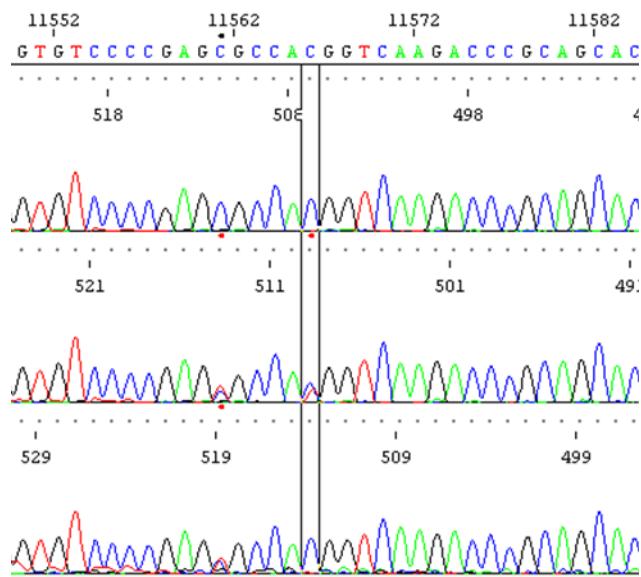
15. Discovery stage 5-3 cases 1 G06, 61981411



16. Discovery stage 5-3 cases 2 A02, 61981303



17. Discovery stage 5-4 cases 1 A06, 61981129



18. Discovery stage 5-4 cases 1 B06, 61981129

