

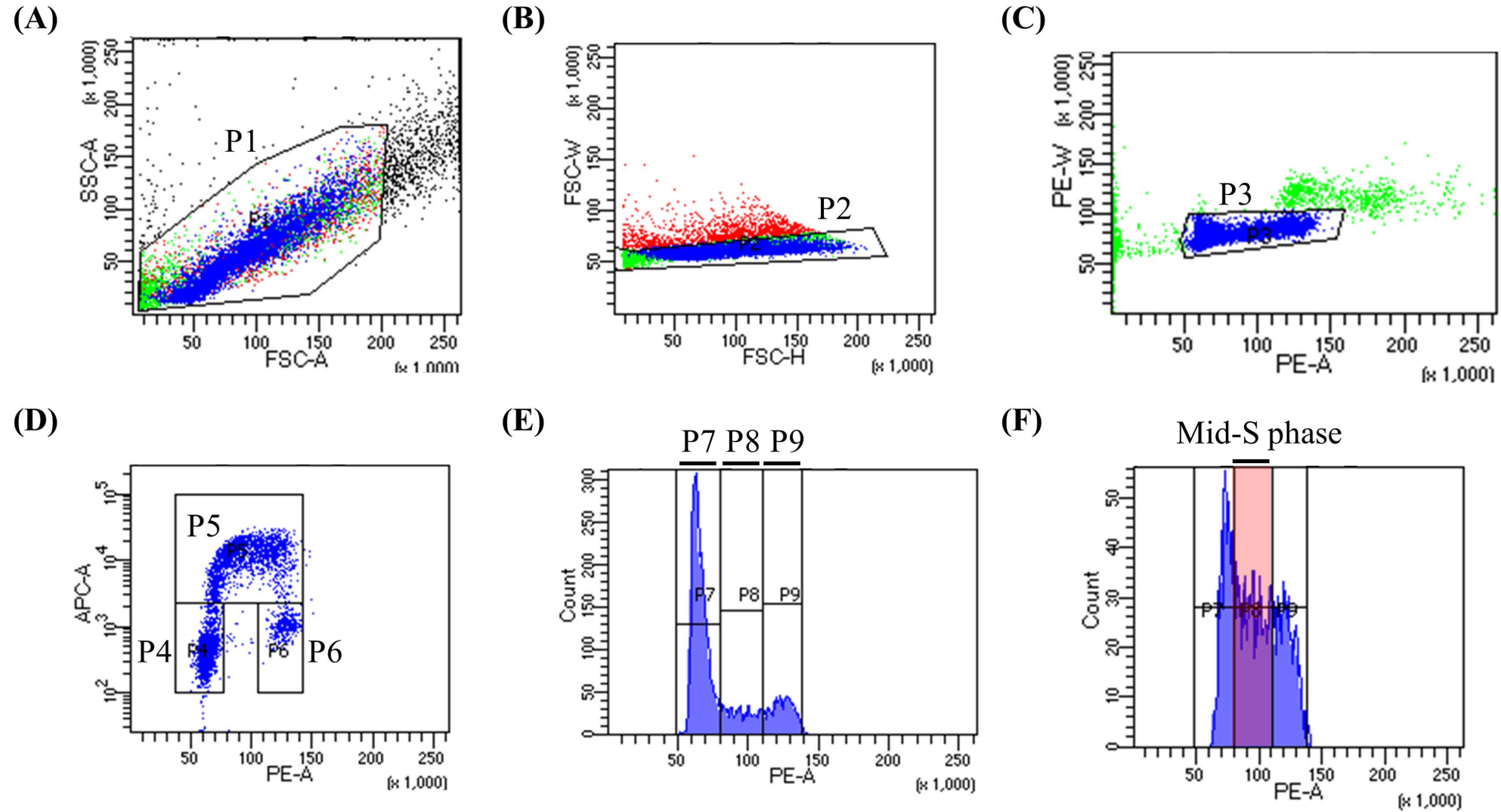
Supplemental Table 1 List of primers.

	Target	Forward primer (5'- 3')	Reverse primer (5'- 3')
Figure 2A	POLE cDNA exon 12-13	ACGGTCTGAGCATGCAGC	CAGGAAGGTAAGTGTCCCT
Figure 2B	POLE minigene	AGCAGAGCTCGTTTAGTGAAC	AATCCGTAAGTGCTTTTGGGA
Supplemental Figure 1	POLE cDNA exon 1-7	GCTCCATGTCTCTGAGGA	GTTGTCCAAGTGGTCAGC
	POLE cDNA exon 6-9	ACAGGGAGCAGGATCAC	AATCTGGTCTGTCTCAGC
	POLE cDNA exon 8-14	GCCGAGATGACCTTGTGTA	AAGTGGCGACAGCATCTG
	POLE cDNA exon 13-17	GAAGAGGGACAGTTACCTTC	AGGCAAGCTTGCTCTTAAT
	POLE cDNA exon 16-21	GCGGGTTGAGAAGACCTT	AGGAGTTCAGGATGCACT
	POLE cDNA exon 21-26	AAGCGCTGCAAGAACATG	CAGATGAGCTCGAATAGCTC
	POLE cDNA exon 25-29	GAGCTCAAGGGCTTTGAG	TTTGACACGTGGCACTGG
	POLE cDNA exon 28-32	GGACTACTACATTGAGCGGC	AAGTCACTGCCAACGAGC
	POLE cDNA exon 31-34	AAGAAGAAGTGGCAGCTG	CTCCCGAAGAGCGCTTTGT
	POLE cDNA exon 34-38	AAACAGCTGGTGAGGCAC	CTCTGGTAGGTTCCCAATG
	POLE cDNA exon 37-41	CAACTATGGGGTCCTGGA	CAGAGGATGATGCGGTTG
	POLE cDNA exon 40-44	CATCTATGCAGACAACCAGG	CTCCTGGGAGAGCTGGCT
	POLE cDNA exon 43-46	CAACGTGGAGGATTTACTGG	GACCTCAGGAAGCACGTAG
	POLE cDNA exon 45-49	TGCCCTGGAGTTCATCAA	AGCTGTGGGTTCTTCTGCA

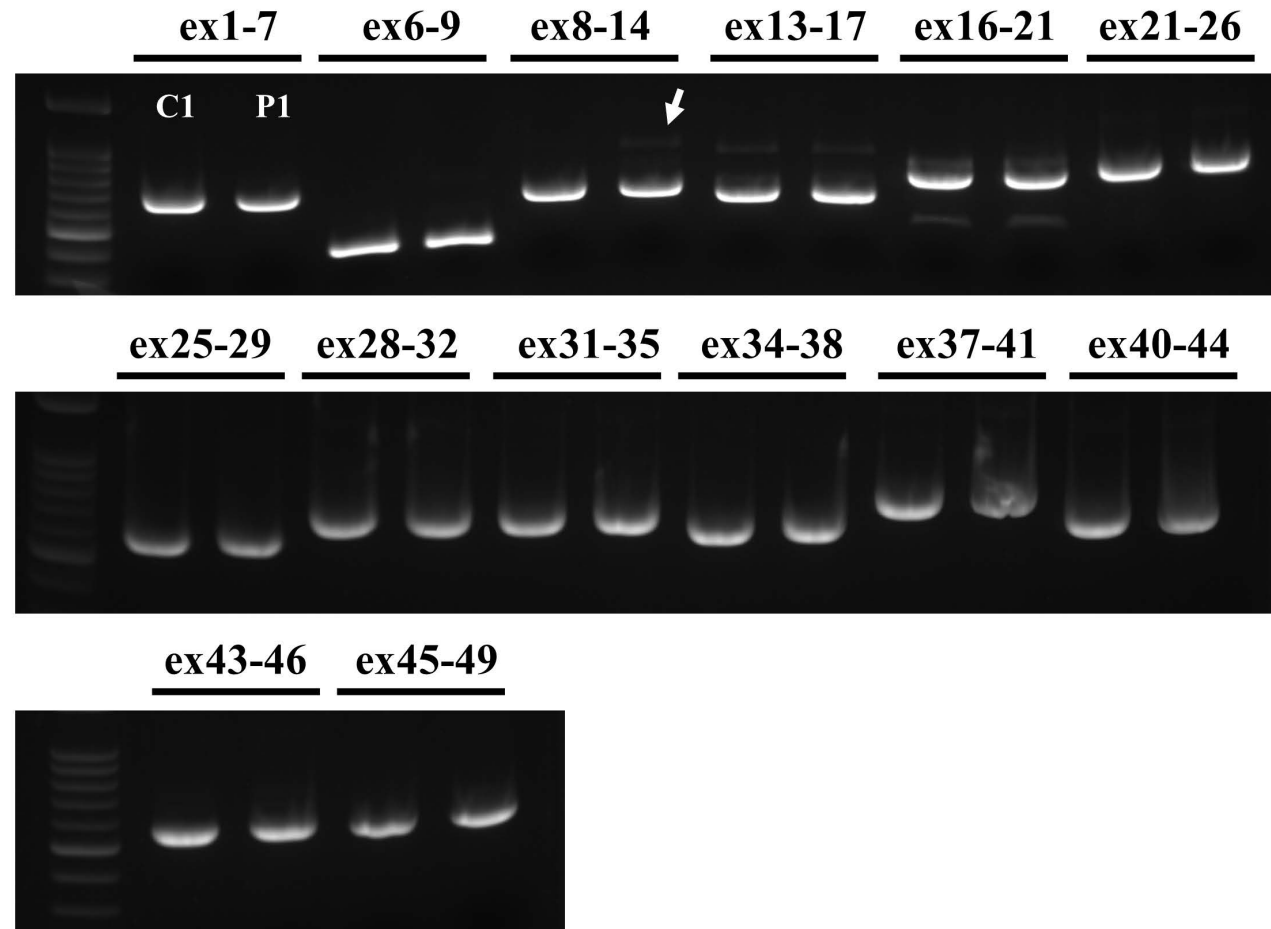
Supplemental Table 2 Summary of laboratory data in P1 and P2.

	P1	P2
White blood cells (/μL)	8,900	10,300
Neutrophils (/μL)	2,940	6,800
Lymphocytes (/μL)	5,250	2,470
Eosinophils (/μL)	0	210
Basophils (/μL)	0	100
Monocytes (/μL)	450	720
Red blood cells (x 10 <sup>6</sup> /μL)	3.31	3.39
Hemoglobin (mg/dL)	11.1	13.6
Platelets (x 10 <sup>3</sup> /μL)	227	422
Lymphocyte subsets		
CD4 (%)	27.2	37.2
CD8 (%)	52.3	29.6
CD4/CD8	0.5	1.3
CD3 (%)	81.5	81.2
CD19 (%)	14.0	6.3
CD56 (%)	1.4	3.6
Immunoglobulin levels		
IgG (mg/dL)	1,459	2,079
IgA (mg/dL)	88	685
IgM (mg/dL)	42	81

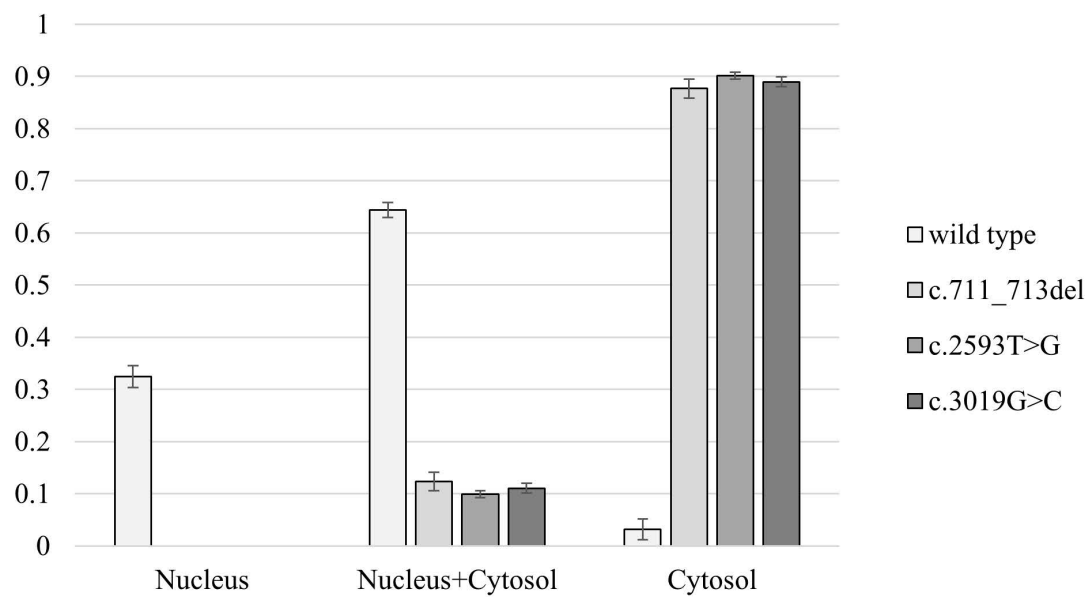
## Supplemental Figure 1



## Supplemental Figure 2



## Supplemental Figure 3



## Supplemental Figure 4

Homo sapiens	V I T D E E - E T S	K K	I A D Q L D N I V D M	R	E Y D V	P Y	H I R L S I D L K I H V A
Patient 1	V I T D E E - E T S	K K	I A D Q L D N I V D M	R	E Y D V	P Y	H I R L S I D L N - H V A
Felis catus	V V V D E E - E A S	K K	V T D Q L D N I V D M	R	E Y D V	P Y	H I R L S I D L K I H A A
Mus musculus	V I T D E D - E T S	K K	I A D Q L D N I V D M	R	E Y D V	P Y	H I R L S I D L R I H V A
Gallus gallus	L T T S E E - G A S	K K	V T N Q M D N I V D M	R	E Y D V	P Y	H M R L S I D L K I H V A
Xenopus tropicalis	M G A E E E - G P S	K K	I S D Q M E N I V D M	R	E Y D V	P Y	H V R V S I D L K I H V A
Danio rerio	V V T E D E G G S S	K K	M T E Q L D N I L D M	R	E Y D V	P Y	H V R V S I D L K I H V A
Drosophila melanogaster	A G S E D - A T L G	K R	Q Q D Y M D C I V D I	R	E H D V	P Y	H V R V S I D L R I F C G
Saccharomyces cerevisiae	- - - - - A N G	S E	K V D A	K H	L I E D I	R	E Y D V P Y H V R V S I D K D I R V G