Table S1: Primers used to assemble and sequence the *B.microti* apicoplast genome. Coordinates are given according to the sequence available at accession number LK028575. Primer orientation: w for Watson strand and c for Crick strand.

Name	Sequence	Begin	End	Strand
rps2.2	CCGATTGTTATACCATTTAACTATAAAGAAG	131	101	c
api1_tRNA	TCGAGTCTGCATCTTATTTATTTAGGTAATTAACTTAATGG	915	955	w
ctg1_ssu	GATTTAATCTCCCTTCACAAGACATTACTTTGTCTAG	1542	1506	c
BA39YPO6-R	TATAGACCCGAACCCAAATGATCT	3486	3509	w
AA3YN24-F	AGTAACGGAGGTGAACAAAGGT	5002	5023	w
AA3YN24-FF	GATTTGTAATCAGTAGAATATGAGTT	5695	5720	w
BA39YPO6-F	AACTCATATTCTACTGATTACAAATCA	5720	5694	c
AA3YN24-R	TTTTCAATAGTTAGAAAAATTCCTCATT	6967	6940	c
BA20YL13-R	AAAAGTACTAATATATTTGTTGGTGGTT	7875	7902	w
Ctg1b_F	CCACATGGAGGAGGAGAAGG	8843	8862	w
BA20YL13-RR	ATGGAGGAGGAGAAGGTAA	8847	8865	w
BA20YL13-FF	TTTTACCTTCTCCTCCTCCA	8867	8848	c
BA20YL13-LST	TAATTGAACCTTTAAGTAGTT	9616	9636	w
ctg1_rps3	TATATTCAGGTAGGTTTAATAAGTTAAATAATAGATCAAAAGTTG	9751	9795	w
BA20YL13-F	ACTTATTAAACCTACCTGAATATATA	9774	9709	c
RPL1_Long	TTATATCAAAAAGTTTTGGATCAATATCATCAAGTCAATTAGAATC	10042	10087	w
Gap3.1	TAAGTTTTTTATGGCTAAAGTTCTTTTGGTAAATAAGT	11143	11180	w
Gap3.2	AATTAATTTTATACTTATTTACCAAAAGAACTTTAGCCA	11192	11154	c
5948.1	ATAATGAAGAACGTATTAAAATGAGAAATTTTACTTTAGAAGTAGT	11705	11750	w
Gap3.3	GAAAAAATAAATATAAAAGAAAAAGTATTGACCCAATTAAGA	12127	12168	w
Gap3.4	ACTTATAAATTTTTTAATATAAGTATATATAATCTTAATTGGGT	12200	12157	c
5948.1	ATAATGAAGAACGTATTAAAATGAGAAATTTTACTTTAGAAGTAGT	12470	12515	w
Gap3.3	GAAAAAATAAATATAAAAGAAAAAGTATTGACCCAATTAAGA	12893	12933	w
Gap3.4	ACTTATAAATTTTTTAATATAAGTATATATAATCTTAATTGGGT	12965	12924	c
Gap3_PRA4	CTATAGTAAGATAATTAAAATTTAATACCCTATC	13141	13108	c
Gap3_seq1.1	AAATTATATTATTTAAAAATTACGGATTTAATAACAGT	13400	13437	w
Gap3_PRA3	CCTTTACCAGTATAAACATTATACTTTTTAATATTTTTTATTCTAC	13568	13523	c
Gap3_PRA1	GGTAATAAAACAGGATGGTGTGGATTAGGAGT	13871	13902	w
Gap3_seq1.2	ATCTCTAAATCTATTAATAAATTTAATTTTACAACCTTT	14056	14018	c
Gap3_PRA9	TTATTTTATAATTTAAAATTTTACACTTATGGTATAGGT	14303	14341	w
Gap3_PRA10	AAAAATAATAAAATATATAATTTAAAAATACCTATACCA	14370	14332	c
Gap3_seq2.1	AAATTTGTAAAAAATGTAGATTAATAAGAAGAAATAAAA	14543	14581	w
Gap3_PRA7	TTTGAATTTATAAATGATTTTGAACCACATGAAGATGAG	14824	14786	c
Gap3_PRA2	ATTATTTTAAGTTTTCTTATAATGGATGTAGAGTT	15007	15041	w
Gap3_seq2.2	TTAATTCTTTTACCTCTTATAGCTTGATTTAATGTT	15218	15183	c
Gap3_PRA8	TTAATTTTATTATTCATTTATTCCTATATTTTTTTACACCA	15577	15537	c
5929.1	TTAATGTTGTTTTACCATGATCTATATGACCTATAGTACCTACA	16270	16227	c
EFT1_long	CCTGTAACTACAGTACCTCTACCTGTTATTAAAAAACTATCTTC	16895	16852	c
AA9YN12_EFTU	TTTATAACCTGATAAAAAAGGTTTATGTCTACCTCCTTC	17190	17152	c
AA9YN12-F2	AAAATGGCTATGCCAGGTG	17263	17281	w
AA9YN12-FR1	TGTAATAATACCTGCTCC	17388	17371	c
AA9YN12-F3	AACTGAAATAGATAGGTTTG	17875	17894	w
AA9YN12-FR2	CTATTATTAGTGTTACATTGAA	18066	18045	c
AA9YN12-RR2	GTAGTTGGATTATATGTGG	18606	18624	w
AA9YN12-R3	CCTGGTGGTGCGCC	18765	18752	c
AA9YN12-RR3	GAATTTTTAAATAGAATTGATG	19061	19082	w
AA9YN12-R2	ATACTAAAGATTTACCACAAATATC	19328	19304	c
Clpc.1	TTGTTTTTTAATAATGATATTTGGATAATAGAATGTGA	19523	19560	w
Clpc.2	TATAGTATTAATAATACTTTTAAAAGAGTTATAATAATAATTAAAG	19676	19721	w
Clpc3	TTCTTTCATCATCTACAGGAGT	20379	20400	w
Gap2.1	AGCATTTGATTTGAGATCTTAGTAATATGGGTT	21142	21174	w
Gap2_seq1.1	TTAAAAATAAAAAATTATCATTAACTAAAAAAAAAA	21580	21615	w

Gap2.2	TTTTGTTGAATTTATTTTTATTGAATATGTTTTATT	22125	22090	c
rpoB3	GTTAAATATGTTATTGTATTTGT	22298	22276	c
Gap2_seq1.2	TTTTAAAATAATTTCACTTATTGAAGAGTGTTT	22467	22435	c
rpoB.1	ATGCATTTTTGAACCCATAAGACCCCTAC	23004	22976	c
rpoB.2	TTTATTACAATACCAGATGAATAGGAAATTATACAA	23123	23088	c
rpoC.2	TATTAGTTGGTTATCTTAATTTAGCTATTATACATG	25725	25760	w
rpoC.1	GACATATAATATATACTGTAATTCATTAAATTCTGAAC	25822	25859	w
8452.1	AAAAAAAAGTCAATTTATACAAATATCACAAT	26221	26252	w
Gap1.2	AATATTATAAAAAAAATAGATAGGGATGATTTTGA	27201	27235	w
Gap_1.1	ATATATTGTTGAGTATTAGTATTTAATAATAAACCA	27325	27290	c
rps2.1	AATTATAAAATAATCTATACCATCCAGATCCT	27963	27932	c
api1_rps2	CACTTTTCCATGAAGATAAAAAATAAAAGTTTAATGTTAATTCTG	28265	28221	c

Figure S1


Toxoplasma gondii
Plasmodium falciparum 3D7
Babesia microti strain RI
Theileria parva strain Muguga
Babesia bovis T2Bo

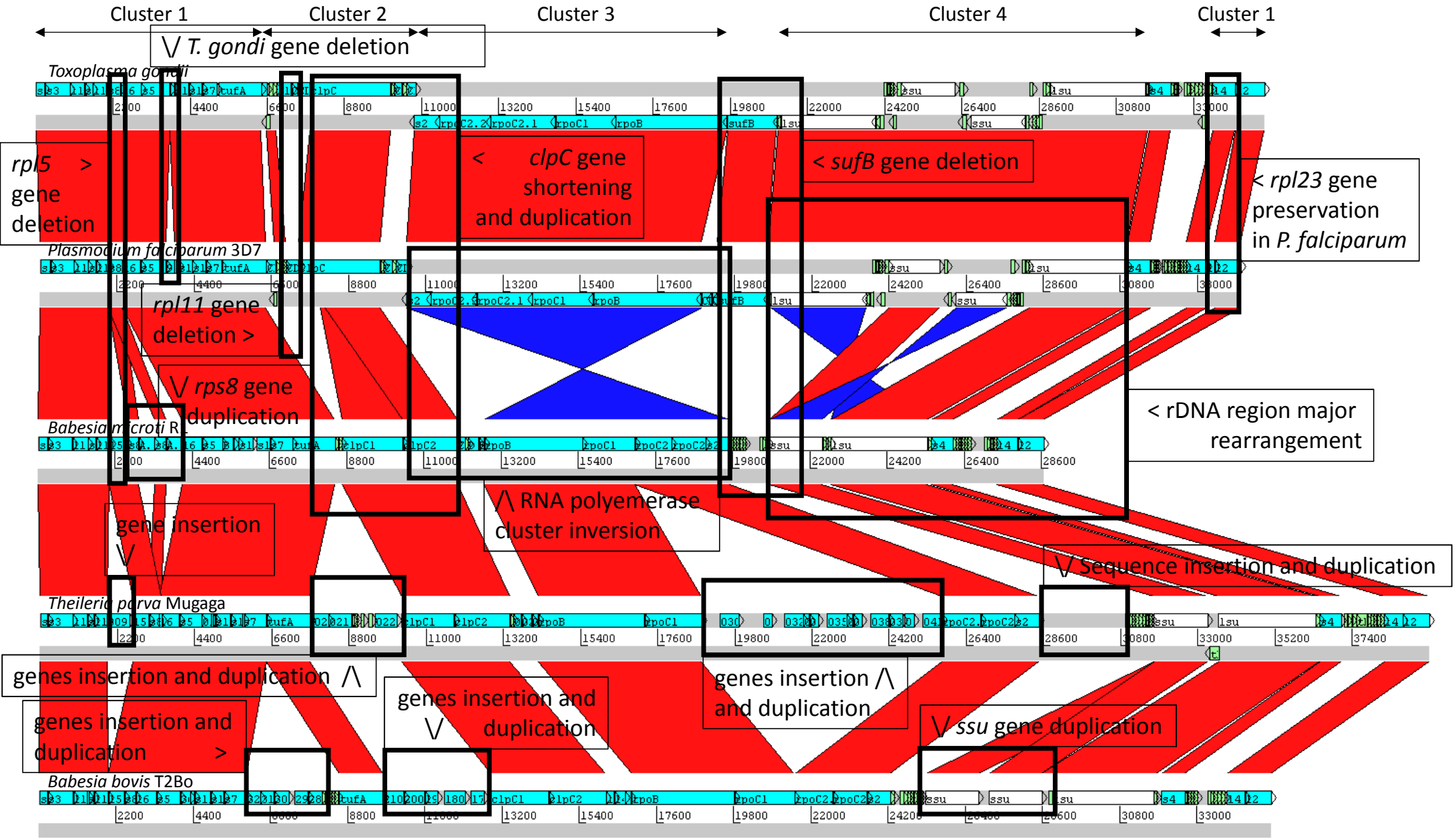

Cluster 1
Cluster 2
Cluster 3
Cluster 4
Cluster 1
\/ T. gondi gene deletion
Toxoplasma gondii
rpl5 > gene deletion
< clpC gene shortening and duplication
< sufB gene deletion
< rpl23 gene preservation in P. falciparum
Plasmodium falciparum 3D7
rpl11 gene deletion >
\/ rps8 gene duplication
Babesia microti R
< rDNA region major rearrangement
gene insertion \/
/\ RNA polyemerase cluster inversion
\/ Sequence insertion and duplication
Theileria parva Mugaga
genes insertion and duplication /\
genes insertion and duplication >
genes insertion and duplication \/
genes insertion /\ and duplication
\/ ssu gene duplication
Babesia bovis T2Bo

Figure S2

Figure S3

Babesia microti R1

*Bm*ClpC1

*Bm*ClpC2

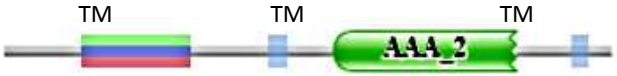
Theileria parva Mugaga

*Tp*ClpC1, Q4MYA0_THEPA

*Tp*ClpC2, Q4MY99_THEPA

Babesia bovis T2Bo

*Bb*ClpC1, A7AXE8_BABBO



*Bb*ClpC2, Q4MY99_THEPA