

**Table S6.** Details of mutations identified on Tp6 antigenic region.

Sample group	Tp6 gene mutation details								
	Coverage	Alt#	Alt# (F;R)	Reference	Mutation call	Reference Nucleotide position	Overall mutation score	Amino acid change	Function
Nakuru cattle	75105	31700	17826;13874	TP01_0188	C>CG	364	30.70	p.G118GG	Synonymous
	76033	32626	19176;13450		T>CT	370	31.00	p.D120DD	Synonymous
	75778	32608	19298;13310		C>CT	373	31.00	p.Y121YY	Synonymous
	66367	27924	20703;7221		T>AT	421	29.00	p.I137II	Synonymous
	65586	26512	19702;6810		G>GT	424	28.00	p.V138VV	Synonymous
	62749	26296	20147;6149		C>CT	436	35.20	p.N142NN	Synonymous
	54461	22243	17934;4309		A>AG	466	35.80	p.R152RR	Synonymous
Mbarara cattle	69451	13851	7722;6129		C>CG	364	30.10	p.G118GG	Synonymous
	70866	14419	8634;5785		T>CT	370	30.50	p.D120DD	Synonymous
	70471	14364	8686;5678		C>CT	373	30.50	p.Y121YY	Synonymous
	60177	12083	10214;1869		T>AT	421	29.10	p.I137II	Synonymous
	59599	11499	9818;1681		G>GT	424	28.40	p.V138VV	Synonymous
	58022	11641	10110;1531		C>CT	436	35.40	p.N142NN	Synonymous
	53325	10489	9303;1186		A>AG	466	35.40	p.R152RR	Synonymous
Karamoja cattle	72644	58176	33959;24217		T>CT	370	31.30	p.D120DD	Synonymous
	72193	57917	34207;23710		C>CT	373	31.30	p.Y121YY	Synonymous
	60396	48618	40511;8107		T>AT	421	28.40	p.I137II	Synonymous
	59945	46555	39113;7442		G>GT	424	26.90	p.V138VV	Synonymous
	58196	35672	30608;5064		C>CT	436	36.50	p.N142NN	Synonymous
	52569	31616	27640;3976		A>AG	466	36.00	p.R152RR	Synonymous
Non-clinical <i>T. parva</i> -positive cases	49928	16404	4983;11421		C>CT	307	31.90	p.C99CC	Synonymous
	58357	19361	7334;12027		C>CT	325	33.90	p.P105PP	Synonymous
	69081	66523	35071;31452		C>G	364	28.70	p.G118GG	Synonymous
	69923	69060	38767;30293		T>C	370	28.10	p.D120D	Synonymous
	69562	68811	39008;29803		C>T	373	28.70	p.Y121Y	Synonymous
	58823	37841	29030;8811		T>AT	421	37.30	p.I137II	Synonymous
	58218	35939	27678;8261		G>GT	424	36.90	p.V138VV	Synonymous
	36951	12990	10787;2203		G>GT	496	35.60	p.V162VV	Synonymous
CD clinical cases	38195	37588	17296;20292	C>T	325	33.80	p.P105P	Synonymous	
	44551	42664	23239;19425	C>G	364	29.00	p.G118GG	Synonymous	
	45315	44625	25515;19110	T>C	370	27.30	p.D120D	Synonymous	
	45265	44699	25723;18976	C>T	373	27.30	p.Y121Y	Synonymous	

	39304	7656	5321;2335		T>AT	421	34.50	p.I137H	Synonymous
	39037	7324	5105;2219		G>GT	424	34.10	p.V138VV	Synonymous
	24028	18235	14544;3691		G>GT	496	34.00	p.V162VV	Synonymous

**NB:** Detail on interpretation is provided in Tables S1 and S3 footnotes.