

**Table S4.** Details of mutations identified on Tp4 antigenic epitope.

Sample group	9-mer Tp4 <sub>328-336</sub> (TGASIQTTL) epitope mutation details								
	Coverage	Alt#	Alt# (F;R)	Reference	Mutation call	Reference Nucleotide position	Overall mutation score	Epitope variants	Function
Nakuru cattle	9,121	191	160;31	TP03_0210	delCinsT	1003	17.30	TGASIQTSL	Missense
Mbarara cattle	3,981	211	172;39		delCinsA	989	24.50	TGDSIQTTL	Missense
Karamoja cattle	7,525	-	-		None	-	-	TGASIQTTL	-
Non-clinical <i>T. parva</i> -positive cases	9,525	-	-		None	-	-	TGASIQTTL	-
CD clinical cases	3,823	-	-		None	-	-	TGASIQTTL	-

**NB:** Detail on interpretation is provided in Table S1 footnotes.