

**Table S4. Novel vaccine candidate loci with low polymorphism and high epitope density.**

RS Gene ID	<i>C. immitis</i> $\pi$	<i>C. posadasii</i> $\pi$	HLA-I epitopes	HLA-II epitopes	Description
CIMG_00642	0.00	5.40E-04	4	5	Conserved hypothetical protein
CIMG_02599	0.00	6.43E-04	3	3	Conserved hypothetical protein
CIMG_03437	0.00	4.85E-04	1	4	Conserved hypothetical protein
CIMG_04129	0.00	3.64E-04	3	3	Predicted protein
CIMG_04758	0.00	4.70E-04	1	3	Predicted protein
CIMG_04746	0.00	1.59E-04	7	13	Conserved hypothetical protein
CIMG_04894	0.00	0.00E+00	3	1	Conserved hypothetical protein
CIMG_07187	0.00	0.00E+00	2	0	Conserved hypothetical protein
CIMG_07738	0.00	5.17E-04	5	3	Conserved hypothetical protein
CIMG_08370	0.00	0.00E+00	2	3	Predicted protein
CIMG_08533	0.00	4.39E-04	4	8	Integral membrane protein (Yip1 domain)
CIMG_09101	0.00	0.00	10	4	Integral membrane protein (ORMDL domain)
CIMG_10953	0.00	0.00	2	0	Hypothetical protein
CIMG_11035	0.00	0.00	1	3	Conserved hypothetical protein
CIMG_11821	0.00	5.19E-04	2	5	Predicted protein
CIMG_12464	0.00	0.00	5	3	Conserved hypothetical protein