

Table S2. Relative levels of immune responses against different PvTRAGs

S. No.	Antigens	MFI	Cytokines								IFN- $\gamma$ /IL-4	Seropositivity (%)
			IFN- $\gamma$		IL-2		IL-4		IL-10			
			Healthy controls	<i>P. vivax</i> exposed individuals	Healthy controls	<i>P. vivax</i> exposed individuals	Healthy controls	<i>P. vivax</i> exposed individuals	Healthy controls	<i>P. vivax</i> exposed individuals		
1	PvTRAg	9.4	0.95 $\pm$ 0.15	2.66 $\pm$ 0.63*	1.27 $\pm$ 0.30	2.55 $\pm$ 0.39*	0.92 $\pm$ 0.30	3.38 $\pm$ 0.55*	0.22 $\pm$ 0.02	0.59 $\pm$ 0.14*	0.78	84.84
2	PvTRAg69.4	9.74	1.02 $\pm$ 0.33	2.25 $\pm$ 0.29*	1.95 $\pm$ 0.20	2.81 $\pm$ 0.48	1.35 $\pm$ 0.27	2.88 $\pm$ 0.22*	0.55 $\pm$ 0.26	0.87 $\pm$ 0.19	0.78	100
3	PvTRAg40	10.53	0.85 $\pm$ 0.13	2.36 $\pm$ 0.41*	1 $\pm$ 0.20	2.86 $\pm$ 0.63*	1.07 $\pm$ 0.27	3.85 $\pm$ 0.71*	0.22 $\pm$ 0.09	0.66 $\pm$ 0.20	0.61	93.93
4	PvTRAg38	7.83	0.75 $\pm$ 0.17	2.4 $\pm$ 0.41*	1.62 $\pm$ 0.44	2.92 $\pm$ 0.39	0.92 $\pm$ 0.39	2.97 $\pm$ 0.47*	0.6 $\pm$ 0.43	0.86 $\pm$ 0.23	0.8	81.81
5	PvTARAe55	8.78	1.02 $\pm$ 0.16	2.01 $\pm$ 0.27*	1.12 $\pm$ 0.21	2.78 $\pm$ 0.68*	1.25 $\pm$ 0.29	2.95 $\pm$ 0.37*	0.22 $\pm$ 0.06	0.97 $\pm$ 0.29*	0.68	93.93
6	PvTRAg80.6	8.22	0.80 $\pm$ 0.17	1.88 $\pm$ 0.29*	1.47 $\pm$ 0.38	2.08 $\pm$ 0.41*	1 $\pm$ 0.26	2.29 $\pm$ 0.39*	0.3 $\pm$ 0.07	0.91 $\pm$ 0.29	0.64	93.93
7	PvTRAg53.7	6.54	1.00 $\pm$ 0.12	2.32 $\pm$ 0.45*	0.77 $\pm$ 0.27	2.3 $\pm$ 0.44	1.62 $\pm$ 0.34	2.54 $\pm$ 0.44	0.27 $\pm$ 0.11	0.71 $\pm$ 0.22	0.91	96.96
8	PvTRAg39.8	6.51	1.17 $\pm$ 0.09	2.45 $\pm$ 0.34*	0.95 $\pm$ 0.22	2.75 $\pm$ 0.46*	0.85 $\pm$ 0.23	2.94 $\pm$ 0.53*	0.35 $\pm$ 0.17	0.84 $\pm$ 0.20	0.83	87.87
9	PvATRAg74	6.53	0.70 $\pm$ 0.14	2.47 $\pm$ 0.63*	1.22 $\pm$ 0.21	3.12 $\pm$ 0.58	1.47 $\pm$ 0.51	2.99 $\pm$ 0.53	0.3 $\pm$ 0.04	0.89 $\pm$ 0.23*	0.82	87.87
10	PvTRAg43.1	6.55	0.90 $\pm$ 0.22	1.81 $\pm$ 0.29*	0.97 $\pm$ 0.23	2.51 $\pm$ 0.21*	1.12 $\pm$ 0.23	2.82 $\pm$ 0.47*	0.25 $\pm$ 0.05	0.64 $\pm$ 0.15*	0.64	93.93
11	PvTRAg42.9	6.94	0.77 $\pm$ 0.21	1.62 $\pm$ 0.25*	0.92 $\pm$ 0.21	2.74 $\pm$ 0.56*	0.82 $\pm$ 0.22	2.29 $\pm$ 0.33*	0.37 $\pm$ 0.20	0.87 $\pm$ 0.20	0.7	75.75
12	PvTRAg39.9	6.97	0.90 $\pm$ 0.09	1.63 $\pm$ 0.22*	1.32 $\pm$ 0.16	3.29 $\pm$ 0.93	1.2 $\pm$ 0.17	2.21 $\pm$ 0.29	0.52 $\pm$ 0.22	1.34 $\pm$ 0.46	0.73	90.9
13	PvTRAg32.4	6.45	0.67 $\pm$ 0.20	1.35 $\pm$ 0.26	0.95 $\pm$ 0.06	1.57 $\pm$ 0.20	0.97 $\pm$ 0.17	2.1 $\pm$ 0.41*	0.27 $\pm$ 0.08	0.48 $\pm$ 0.09	0.64	90.9
14	PvTRAg35.2	8.8	0.85 $\pm$ 0.13	2.12 $\pm$ 0.37*	0.95 $\pm$ 0.25	2.48 $\pm$ 0.44*	1 $\pm$ 0.26	3.08 $\pm$ 0.44*	0.35 $\pm$ 0.18	0.84 $\pm$ 0.24	0.68	96.96
15	PvTRAg33.5	8.38	0.70 $\pm$ 0.19	1.68 $\pm$ 0.43	0.97 $\pm$ 0.21	1.94 $\pm$ 0.43	1.32 $\pm$ 0.25	2.52 $\pm$ 0.58	0.3 $\pm$ 0.13	0.55 $\pm$ 0.14	0.66	100
16	PvTRAg38.7	6.88	1.06 $\pm$ 0.08	2.06 $\pm$ 0.19*	0.51 $\pm$ 0.10	3.03 $\pm$ 0.56*	0.98 $\pm$ 0.19	2.35 $\pm$ 0.22*	0.33 $\pm$ 0.09	1.19 $\pm$ 0.33*	0.88	66.66
17	PvTRAg35.2a	5.54	0.78 $\pm$ 0.11	1.7 $\pm$ 0.26*	0.87 $\pm$ 0.09	2.01 $\pm$ 0.20*	0.84 $\pm$ 0.13	2.41 $\pm$ 0.3*	0.22 $\pm$ 0.04	0.55 $\pm$ 0.08*	0.7	66.66
18	PvTRAg35.7	6.16	0.84 $\pm$ 0.17	2.16 $\pm$ 0.21*	0.93 $\pm$ 0.11	2.54 $\pm$ 0.32*	0.98 $\pm$ 0.12	2.80 $\pm$ 0.30*	0.41 $\pm$ 0.09	0.67 $\pm$ 0.18	0.77	68.51
19	PvTRAg38.8	6.54	0.97 $\pm$ 0.09	2.02 $\pm$ 0.18*	0.88 $\pm$ 0.13	2.37 $\pm$ 0.28*	1.27 $\pm$ 0.20	2.35 $\pm$ 0.24*	0.33 $\pm$ 0.08	0.52 $\pm$ 0.08	0.86	70.37
20	PvTRAg40.8	6.11	0.82 $\pm$ 0.08	2.01 $\pm$ 0.30*	1.17 $\pm$ 0.13	3.04 $\pm$ 0.53*	0.7 $\pm$ 0.15	3 $\pm$ 0.43*	0.25 $\pm$ 0.04	0.66 $\pm$ 0.11*	0.67	88.88
21	PvTRAg33.6	5.35	0.87 $\pm$ 0.10	2.17 $\pm$ 0.20*	1.49 $\pm$ 0.12	3.21 $\pm$ 0.42*	1.18 $\pm$ 0.15	2.87 $\pm$ 0.25*	0.49 $\pm$ 0.10	0.81 $\pm$ 0.15	0.76	94.44
22	PvTRAg37.4	7.88	0.76 $\pm$ 0.12	2.20 $\pm$ 0.19*	1.08 $\pm$ 0.07	2.89 $\pm$ 0.44*	1.02 $\pm$ 0.17	3.45 $\pm$ 0.49*	0.32 $\pm$ 0.06	0.76 $\pm$ 0.16*	0.72	81.48
23	PvTRAg34.9	6.16	0.92 $\pm$ 0.10	2.03 $\pm$ 0.16*	1.16 $\pm$ 0.23	2.72 $\pm$ 0.50*	0.62 $\pm$ 0.17	3.12 $\pm$ 0.37*	0.44 $\pm$ 0.09	0.95 $\pm$ 0.17*	0.65	64.81
24	PvTRAg56.2	5.38	0.79 $\pm$ 0.11	1.68 $\pm$ 0.15*	0.89 $\pm$ 0.11	2.25 $\pm$ 0.34*	1.09 $\pm$ 0.13	2.40 $\pm$ 0.40*	0.31 $\pm$ 0.07	0.53 $\pm$ 0.11	0.7	48.14
25	PvTRAg309	7.35	0.97 $\pm$ 0.09	1.9 $\pm$ 0.16*	0.94 $\pm$ 0.13	2.50 $\pm$ 0.42*	1.24 $\pm$ 0.21	2.81 $\pm$ 0.28*	0.33 $\pm$ 0.05	0.97 $\pm$ 0.15*	0.68	37.03
26	PvTRAg38.5	6.63	0.69 $\pm$ 0.12	1.34 $\pm$ 0.16*	0.74 $\pm$ 0.13	3.53 $\pm$ 0.52*	1.19 $\pm$ 0.25	2.25 $\pm$ 0.27*	0.53 $\pm$ 0.11	1.05 $\pm$ 0.33	0.6	85.18
27	PvTRAg39.8a	7.91	0.74 $\pm$ 0.09	2.15 $\pm$ 0.24*	1.01 $\pm$ 0.15	3.17 $\pm$ 0.52*	1.2 $\pm$ 0.17	2.75 $\pm$ 0.34*	0.34 $\pm$ 0.06	1.03 $\pm$ 0.21*	0.78	59.25
28	PvTRAg42.9a	5.78	0.98 $\pm$ 0.08	2.05 $\pm$ 0.18*	0.81 $\pm$ 0.11	2.61 $\pm$ 0.30*	1.08 $\pm$ 0.18	2.12 $\pm$ 0.28*	0.39 $\pm$ 0.07	0.96 $\pm$ 0.23*	0.97	81.48
29	PvTRAg157	6.11	0.83 $\pm$ 0.11	2.17 $\pm$ 0.36*	0.79 $\pm$ 0.13	2.64 $\pm$ 0.47*	1.27 $\pm$ 0.22	2.78 $\pm$ 0.25*	0.37 $\pm$ 0.06	0.77 $\pm$ 0.16*	0.78	59.25
30	PvTRAg26.3	5.33	0.89 $\pm$ 0.11	2.54 $\pm$ 0.17*	0.62 $\pm$ 0.13	2.62 $\pm$ 0.35*	1 $\pm$ 0.18	2.55 $\pm$ 0.18*	0.45 $\pm$ 0.07	0.69 $\pm$ 0.16	0.97	66.66
31	PvTRAg73.4	6.52	0.94 $\pm$ 0.09	1.85 $\pm$ 0.28*	0.74 $\pm$ 0.11	2.34 $\pm$ 0.26*	1.03 $\pm$ 0.25	1.95 $\pm$ 0.25*	0.25 $\pm$ 0.05	0.87 $\pm$ 0.16*	0.95	38.88
32	PvTRAg36.6	6.28	0.9 $\pm$ 0.10	1.78 $\pm$ 0.17*	0.96 $\pm$ 0.13	2.89 $\pm$ 0.42*	1.05 $\pm$ 0.19	2.17 $\pm$ 0.17*	0.28 $\pm$ 0.04	0.47 $\pm$ 0.07	0.82	53.7
33	PvTRAg36	6.01	0.81 $\pm$ 0.10	2.07 $\pm$ 0.14*	0.8 $\pm$ 0.10	2.7 $\pm$ 0.56*	0.95 $\pm$ 0.24	2.46 $\pm$ 0.26*	0.26 $\pm$ 0.04	0.89 $\pm$ 0.17*	0.89	72.22
34	PvTRAg99.6	5.64	0.75 $\pm$ 0.12	1.44 $\pm$ 0.21*	0.78 $\pm$ 0.12	2.93 $\pm$ 0.35*	0.83 $\pm$ 0.13	2.12 $\pm$ 0.32*	0.46 $\pm$ 0.08	0.68 $\pm$ 0.13	0.68	50
35	PvTRAg34	6.13	0.84 $\pm$ 0.09	2 $\pm$ 0.17*	0.74 $\pm$ 0.14	2.09 $\pm$ 0.23*	0.78 $\pm$ 0.14	2.42 $\pm$ 0.25*	0.21 $\pm$ 0.03	0.55 $\pm$ 0.11*	0.82	81.48
36	PvTRAg36.7	7.45	0.76 $\pm$ 0.09	2.21 $\pm$ 0.20*	0.86 $\pm$ 0.11	2.38 $\pm$ 0.41*	1.11 $\pm$ 0.14	2.49 $\pm$ 0.19*	0.22 $\pm$ 0.03	0.75 $\pm$ 0.15*	0.89	53.7

MFI, Mean Fluorescence Index

Values for cytokines are 'mean SEM' percentages of CD3<sup>+</sup>CD4<sup>+</sup> cells.Abbreviations: IL, interleukin; INF, interferon; PvTRAGs, *P. vivax* tryptophan-rich antigens.\*Values that are statistically different ( $P < 0.05$ ) between *P. vivax* exposed and malaria-naive healthy individuals.