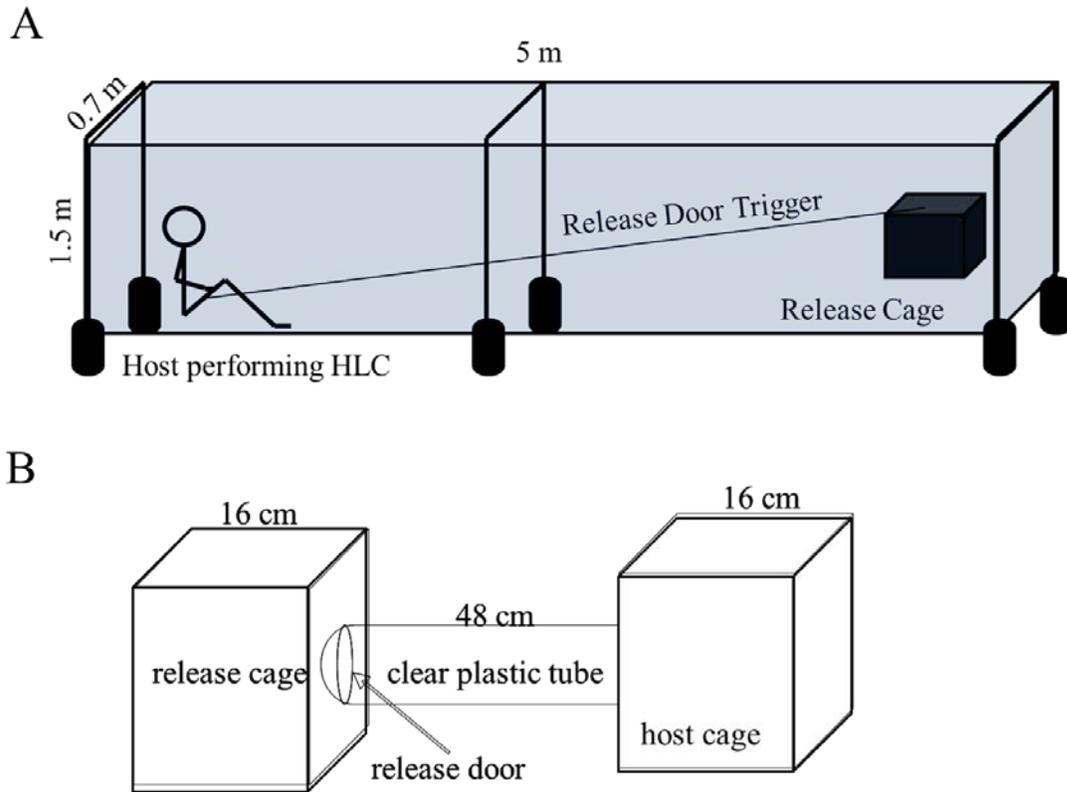


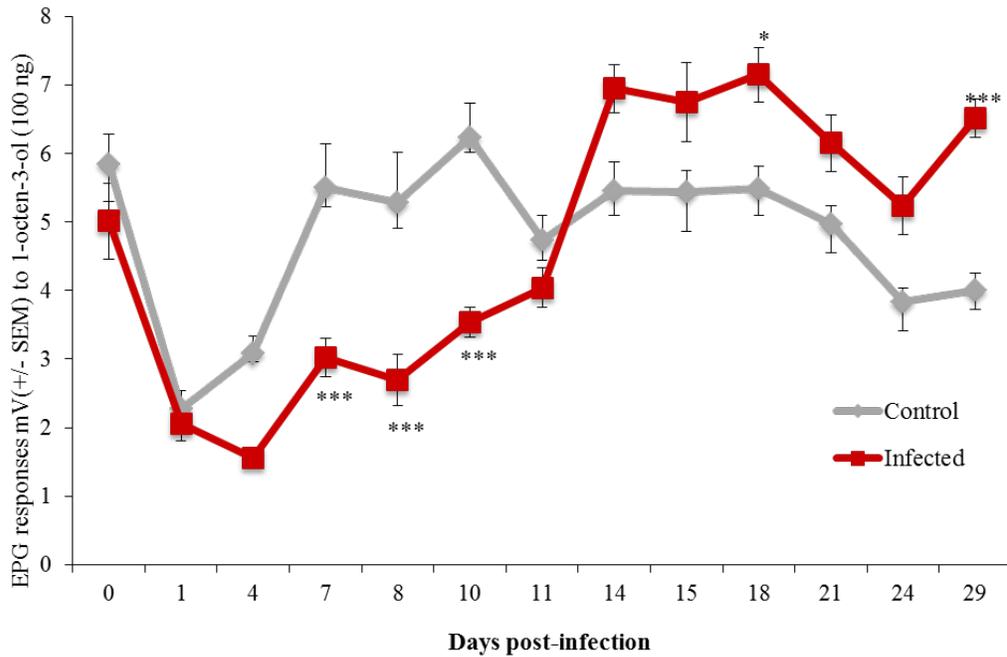
## Supplementary Information

### S1: Diagrams of behavioural assays

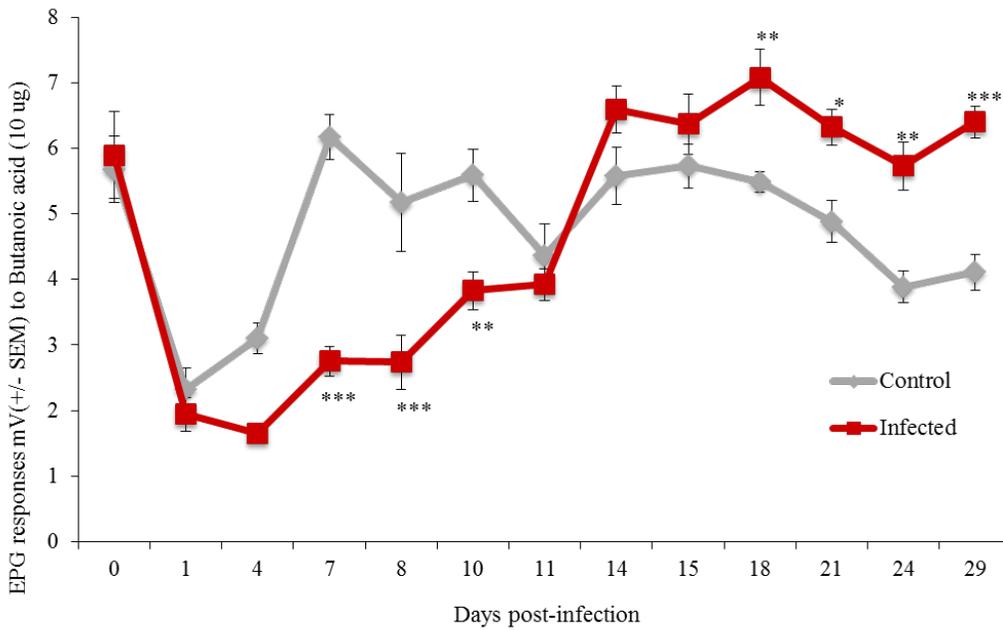


**Figure S1. Experimental set-ups for behavioral assays.** A. Dimensions of the tunnel used for long-range host seeking experiments. The tunnel frame was constructed of plastic piping (50 mm diameter), the side of the cage were made of fine holed mesh. Females from test groups were placed in a 30 x 30 x 30 cm mosquito cage outfitted with a release door connected to a 5m rope. This allowed the host to start each trial while positioned at the opposite end of the tunnel. Females were allowed a 15 minute acclimation period prior to the experimenter starting the trial. B. Schematic of short-range host-seeking assay. Mosquitoes were individually moved into the release cage using a mouth aspirator and allowed 10-15 seconds to settle. The trial began when the release door was lifted and the female was allowed to move into the plastic tube and approach the human hand (LJC) in the host cage.

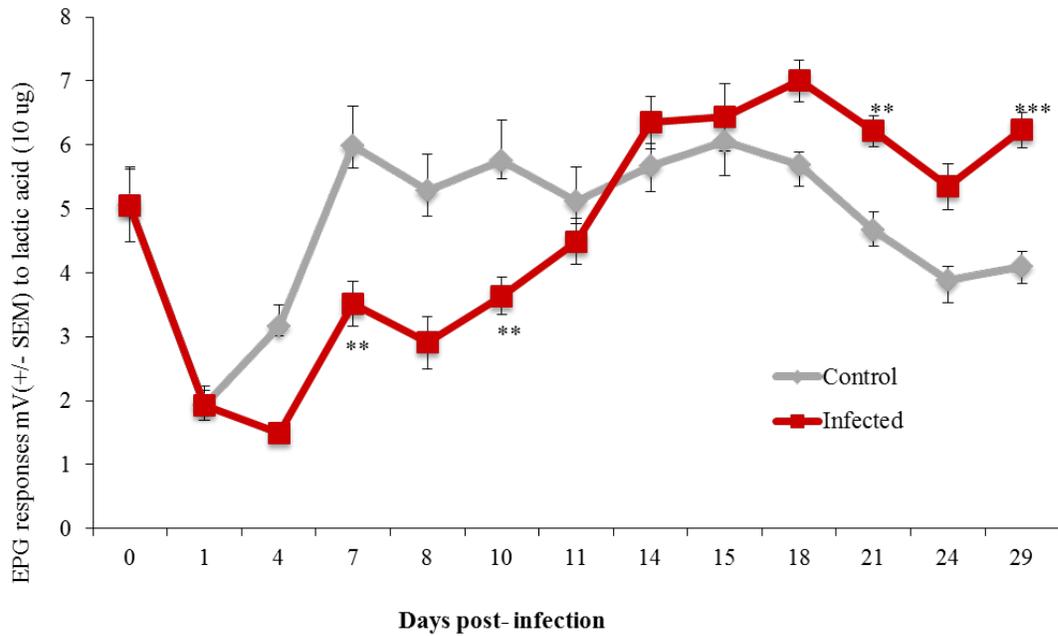
## S2: Electropalogram data from additional stimuli and concentrations



**Figure S2. The effect of *P. yoelii* infection on neurophysiological response 1-octen-3-ol (100ng)** . Line graph showing electropalogram responses during different stages of *P. yoelii* development within *An. stephensi* mosquitoes. The grey line denotes EPG responses to 1-octen-3-ol (100 ng) in blood-fed, uninfected *An. stephensi* females and the red line represents EPG responses of blood-fed, infected. \* indicate significant difference after Bonferroni correction at  $\alpha = 0.05$ ; \* $P < 0.05$ ; \*\* $P < 0.01$ ; \*\*\* $P < 0.001$



**Figure S3. The effect of *P. yoelii* infection on neurophysiological response to Butanoic acid (10 µg) .** Line graph showing electropalpogram responses during different stages of *P. yoelii* development within *An. stephensi* mosquitoes. The grey line denotes EPG responses to Butanoic acid (10 µg) in blood-fed, uninfected *An. stephensi* females and the red line represents EPG responses of blood-fed, infected females. \* indicate significant difference after Bonferroni correction at  $\alpha = 0.05$ ; \* $P < 0.05$ ; \*\* $P < 0.01$ ; \*\*\* $P < 0.001$



**Figure S4. The effect of *P. yoelii* infection on neurophysiological response to lactic acid (10µg).** Line graph showing electropalpogram responses during different stages of *P. yoelii* development within *An. stephensi* mosquitoes. The grey line denotes EPG responses to lactic acid (10 µg) in blood-fed, uninfected *An. stephensi* females and the red line represents EPG responses of blood-fed, infected females. \* indicate significant difference after Bonferroni correction at  $\alpha = 0.05$ ; \* $P < 0.05$ ; \*\* $P < 0.01$ ; \*\*\* $P < 0.001$

### S3: Table of prevalence and intensity for all experiments

Table S1. Intensities and prevalence of infections in all experiments.

<b>Experiment</b>	<b>Replicate</b>	<b>Oocyst Prevalence</b>	<b>Oocyst #</b>	<b>Sporozoite Prevalence</b>
Short-Range Host-Seeking	1	40.58%	16.24 ± 21.91	42.68%
	2	57.53%	66.09 ± 33.55	65.00%
Long-Range Host-Seeking	1	19.74%	7.69 ± 27.45	14.29%
	2	52.21%	39.25 ± 62.42	23.13%
	3	22.52%	2.43 ± 1.78	6.78%
Immune Challenge	1	26.67%	46.67 ± 66.33	20.00%
Immune Challenge	2	16.28%	4.40 ± 4.98	20.00%
EPGs Infection	1	78.90%	56.93 ± 64.90	83.33%
EPGs Challenge	1	57.14 %	-	12.5 %