

Table S1. Statistical parameters of statistically significant comparisons between two treatments for a given behaviour test. Z values are reported for glmer and T values for lmer tests.

	Comparisons	Estimate	Std. Error	Z value	T value	P value
Water Depth Preference	FLX – E-NI	-2.450	1.058	-2.316	–	0.021
	FLX – LPS	-3.354	1.254	2.674	–	0.008
	FLX – STRV	3.509	1.292	2.716	–	0.007
Sociability	CTRL – FLX	2.342	1.144	2.048	–	0.041
	CTRL – LPS	3.093	1.405	2.201	–	0.028
	CTRL – STRV	2.894	1.310	2.21	–	0.027
	INF – E-NI	-4.012	1.864	-2.152	–	0.031
	E-INF – FLX	-5.316	2.153	-2.47	–	0.014
Phototaxis	OXA – CTRL	83.7	25.80	–	3.24	0.002
	OXA – E-INF	119.9	43.63	–	2.75	0.008
	OXA – FLX	49.8	24.5	–	2.03	0.046
	OXA – STRV	86.5	24.5	–	3.53	0.0007
	OXA – LPS	80	25.57	–	3.13	0.003
Time spent frozen after the attack	E-INF – OXA	4.667	1.929	2.419	–	0.016
	E-INF – LPS	3.986	1.874	2.127	–	0.034
	E-NI – OXA	2.785	1.214	2.294	–	0.022
Distance travelled after the attack	LPS – E-NI	3.465	1.309	2.647	–	0.008
	LPS – E-INF	4.613	1.963	2.35	–	0.019
	LPS – FLX	2.596	1.211	2.11	–	0.032
	OXA – E-NI	1.9446	0.9031	2.153	–	0.031

Table S2. Complete dataset used in the analysis provided as a tab-delimited text file: Gracias_etal_Supp_table2.txt.

[Click here to Download Table S2](#)

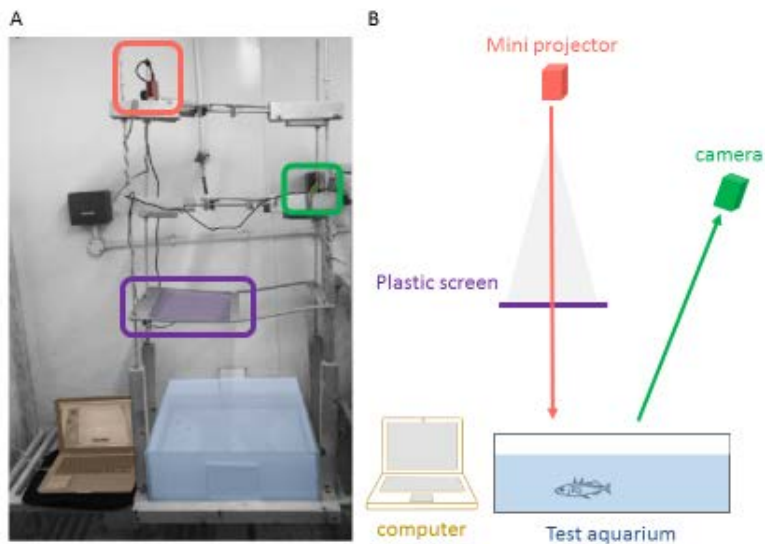


Fig. S1. Experimental setup. Shown is the experimental setup (A) as well as a schematic overview (B); the computer (yellow) operates a mini projector (pink) placed above a semi-opaque plastic screen (purple), which is placed over one half of the test aquarium (blue; d×w×h: 50×50×20cm; water depth: 15cm) at a height of 45cm. Tracks of test subjects are recorded with a webcam (green).

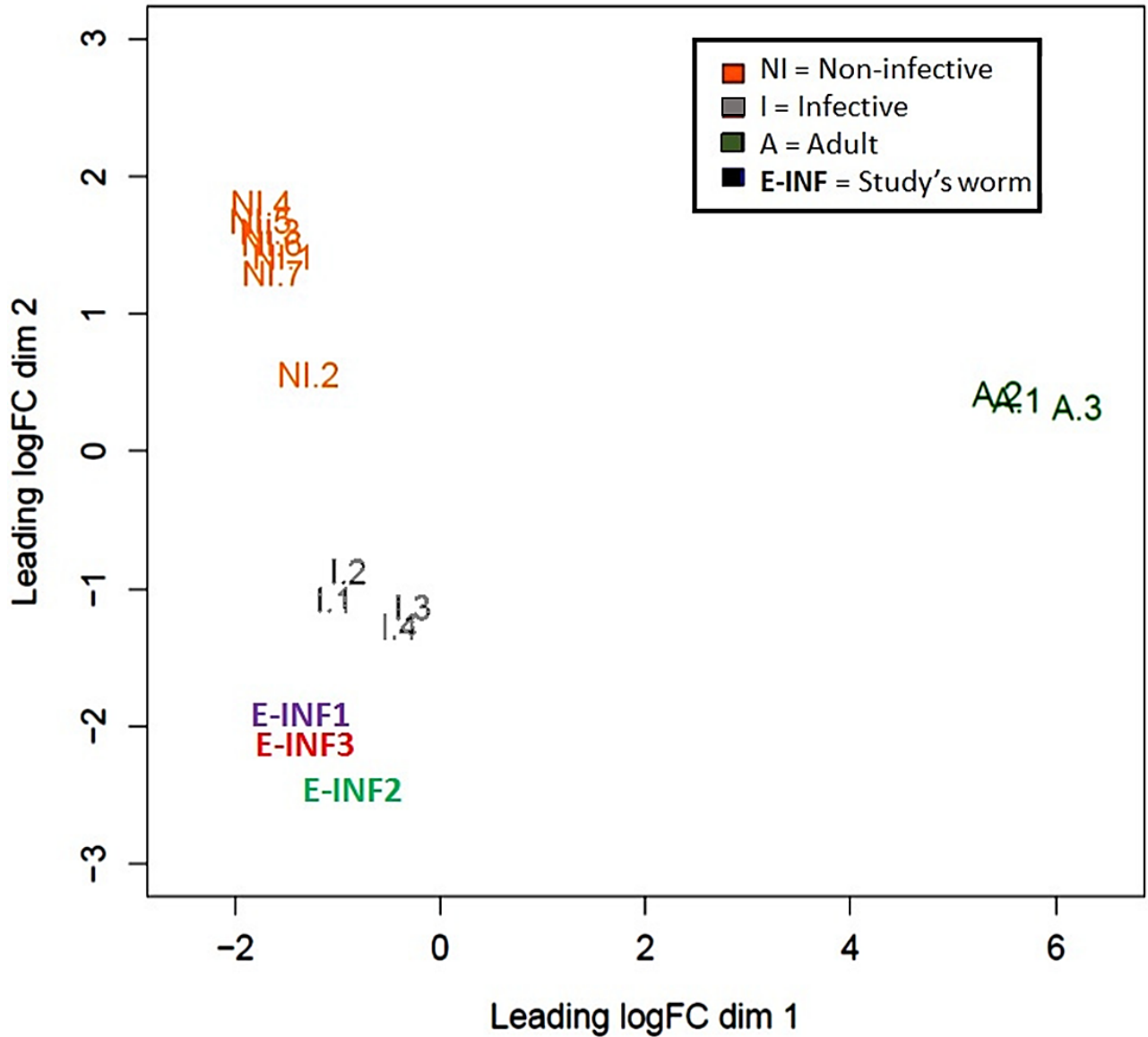


Fig. S2. Multidimensional scaling analysis performed on transcriptome of *S. solidus* sampled at different developmental stages (non-infective and infective stages in threespine sticklebacks, adult stage in the final host's digestive system, data from Hébert et al. 2016a and 2016c). Gene expression profiles of the three parasites used in this study (E-INF1, E-INF2 and E-INF3) each revealed a typical gene expression signature associated with the infective stage.

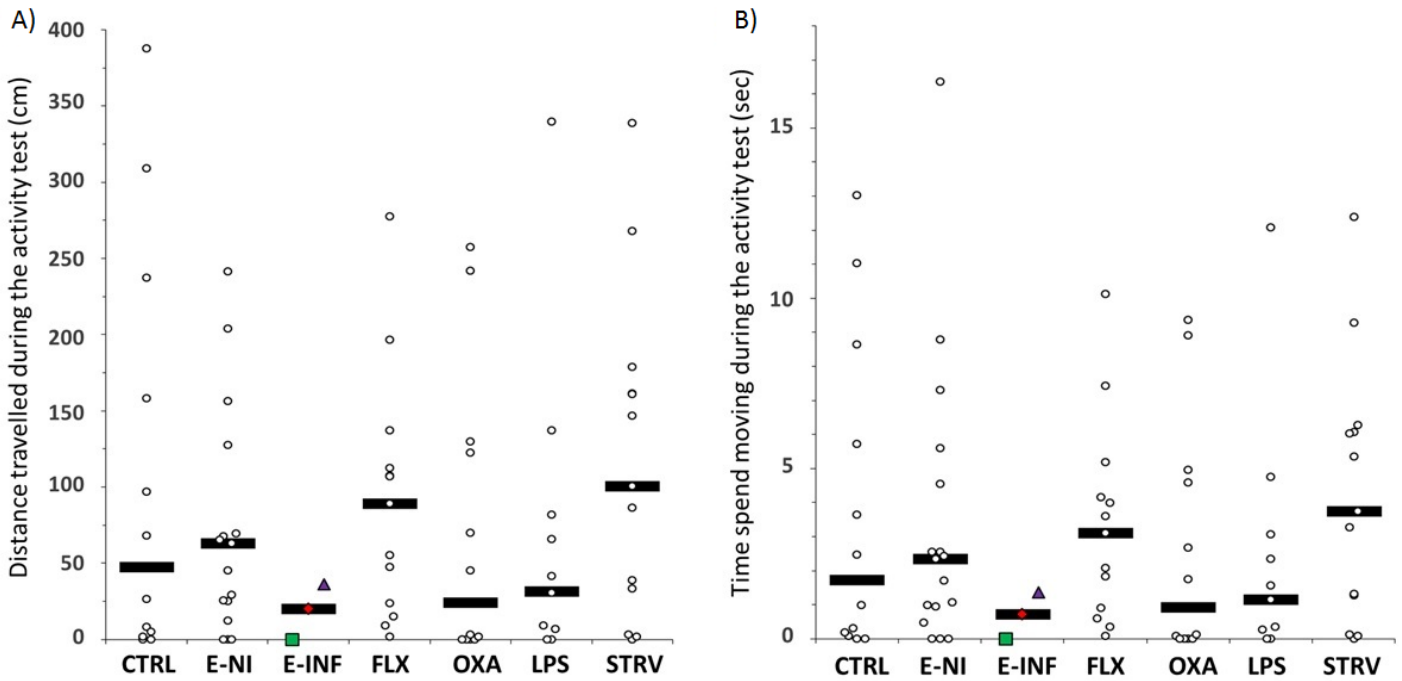


Fig. S3. Activity measured as a) distance travelled and b) time spent moving, for each treatment. Each circle represents an individual and the black bar represents the median. Infected fish (E-INF) are shown as E-INF1 (purple triangle), E-INF2 (green square) and E-INF3 (red diamond). Significant differences are represented by different letters (glmer, $p < 0.05$).

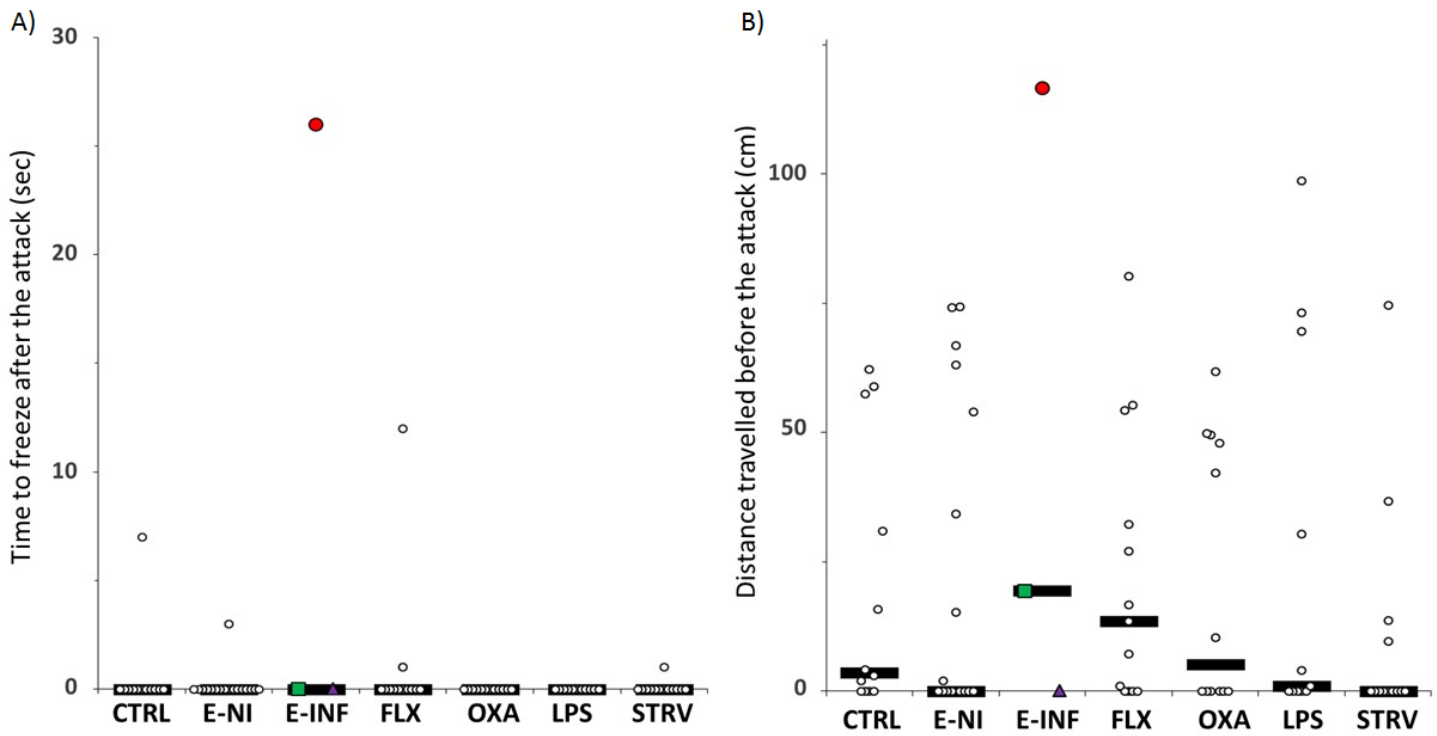


Fig. S4. Predator response measured as a) time to freeze after a predator attack and b) distance moved before a predator attack, for each treatment. Each circle represents an individual and the black bar represents the median. Infected fish (E-INF) are shown as E-INF1 (purple triangle), E-INF2 (green square) and E-INF3 (red diamond). Significant differences are represented by different letters (glmer, $p < 0.05$).

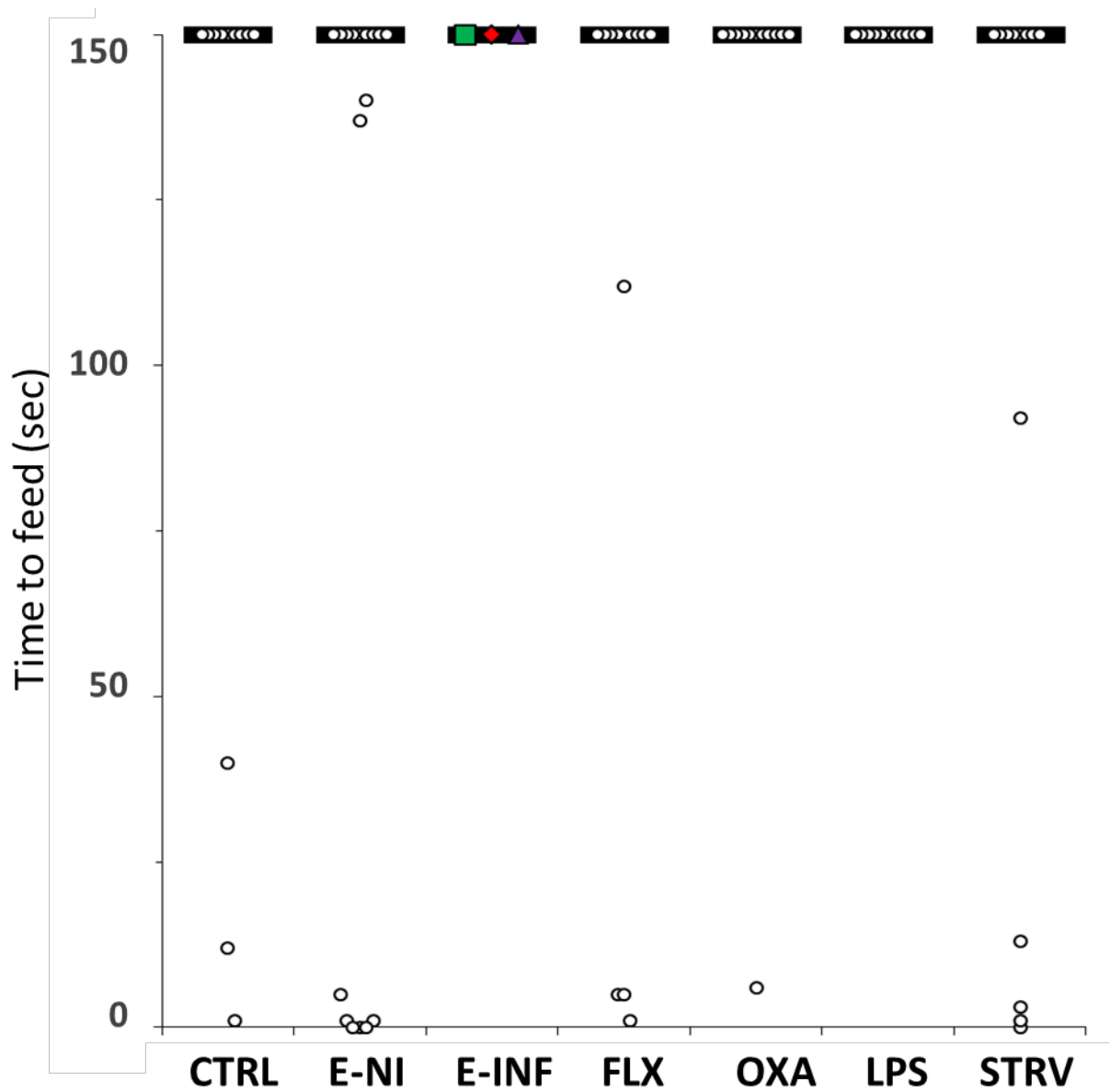


Fig. S5. Time before feeding for each treatment. Each circle represents an individual and the black bar represents the median. Infected fish (E-INF) are shown as E-INF1 (purple triangle), E-INF2 (green square) and E-INF3 (red diamond). Significant differences are represented by different letters (glmer, $p < 0.05$).