

# Supplementary Material

## Rapid low-resource detection of *Plasmodium falciparum* in infected *Anopheles* mosquitoes.

Leon E. Hugo<sup>1</sup>, Karla van Huyssteen,<sup>2,3</sup> Olamide Oloniniyi<sup>2,3</sup>, Laura Donnelly<sup>2,3</sup>, Anna Conn<sup>2,3</sup>, Katharine A. Collins,<sup>4</sup> Hayley Mitchell,<sup>5</sup> James S. McCarthy,<sup>4</sup> and Joanne Macdonald<sup>2,3\*</sup>

1. Mosquito Control Laboratory, QIMR Berghofer Medical Research Institute, Herston, QLD, Australia

2. Centre for Bioinnovation, University of the Sunshine Coast, Sippy Downs, QLD, Australia

3. School of Science and Engineering, University of the Sunshine Coast, Sippy Downs, QLD, Australia

4. Clinical Tropical Medicine Laboratory, QIMR Berghofer Medical Research Institute, Herston, QLD, Australia

5. Clinical Malaria Laboratory, QIMR Berghofer Medical Research Institute, Herston, QLD, Australia

\*Corresponding author: Joanne Macdonald ([jmacdon1@usc.edu.au](mailto:jmacdon1@usc.edu.au))

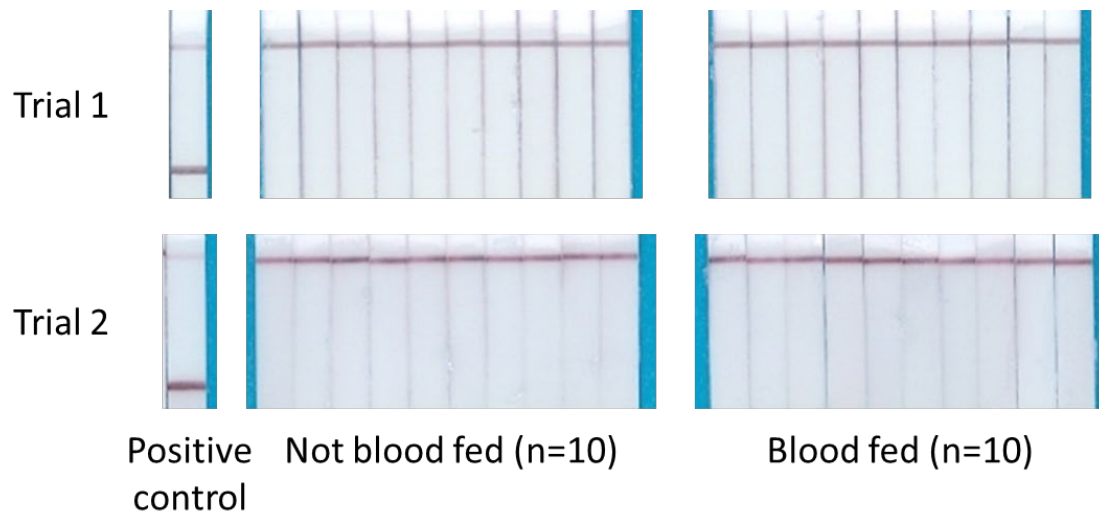
**Table S1. Microscopy and qPCR testing results.**

# Microscopy (midgut)			<i>Pf</i> 18S qPCR <sup>1</sup>							Combined result
Oocysts	Infected (0/1)		Ct	Ct STDEV	Copies/μl	Calc. concentration [95% CI]	Copies/midgut	Infected (0/1)	Infected (0/1)	
1	4	1	32	0.68	5.03E+02	[7.39E+01 , 3.42E+03]	5.03E+04	1	1	
2	1	1	32	0.20	5.86E+02	[8.66E+01 , 3.97E+03]	5.86E+04	1	1	
3	0	0	36	1.19	4.73E+01	[6.27E+00 , 3.57E+02]	4.73E+03	1	1	
4	6	1	33	0.33	4.19E+02	[6.12E+01 , 2.87E+03]	4.19E+04	1	1	
5	4	1	34	0.39	1.21E+02	[1.68E+01 , 8.70E+02]	1.21E+04	1	1	
6	9	1	33	0.29	2.27E+02	[3.24E+01 , 1.59E+03]	2.27E+04	1	1	
7	8	1	32	0.66	4.67E+02	[6.86E+01 , 3.19E+03]	4.67E+04	1	1	
8	19	1						0	1	
9	0	0						0	0	
10	9	1	34	0.29	1.82E+02	[2.57E+01 , 1.28E+03]	1.82E+04	1	1	
11	1	1	31	0.22	9.80E+02	[1.47E+02 , 6.53E+03]	9.80E+04	1	1	
12	0	0						0	0	
13	7	1	33	0.03	3.49E+02	[5.07E+01 , 2.41E+03]	3.49E+04	1	1	
14	0	0						0	0	
15	1	1	35	0.45	6.25E+01	[8.41E+00 , 4.65E+02]	6.25E+03	1	1	
16	0	0	39	0.05	7.07E+00	[8.38E-01 , 5.97E+01]	7.07E+02	1	1	
17	1	1	34	0.12	1.85E+02	[2.62E+01 , 1.31E+03]	1.85E+04	1	1	
18	6	1	31	0.21	1.04E+03	[1.56E+02 , 6.91E+03]	1.04E+05	1	1	
19	0	0						0	0	

# Microscopy (midgut)			Pf 18S qPCR <sup>1</sup>						Combined result
Oocysts	Infected (0/1)		Ct	Ct STDEV	Copies/μl	Calc. concentration [95% CI]	Copies/midgut	Infected (0/1)	Infected (0/1)
20	0	0						NT	0
21	2	1						NT	1
22	5	1						NT	1
23	0	0						NT	0
24	1	1						NT	1
25	4	1						NT	1
26	0	0						NT	0
27	2	1						NT	1
28	4	1						NT	1
29	1	1						NT	1
30	2	1						NT	1
31	0	0						NT	0
32	0	0						NT	0
33	7	1						NT	1
34	0	0						NT	0
35	0	0						NT	0
36	1	1						NT	1
37	2	1						NT	1
38	0	0						NT	0
39	0	0						NT	0

NT = Not tested

1. Sensitivity of *Pf* 18S qPCR was determined to be 2 copies/μL.



**Figure S1. Uninfected blood testing using the Rapid *Pf* test.** Plasmid DNA (Left) was tested as a positive control with each batch tested. Known uninfected mosquitoes were either not blood fed (middle) or blood fed (right), and tested using the Rapid *Pf* test in batches of 10 per group as indicated. Photographs of resultant lateral flow strips show none of the mosquitoes tested positive.