

Simple Sample Processing Enhances Malaria Rapid Diagnostic Test Performance

Supporting Information

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Table 1. Specifications of the individual blood samples used for the surrogate patient study

Patient	Lot #	Gender	Age	Race
1	BRH701920	Male	46	Black
2	BRH701915	Male	29	Black
3	BRH701919	Male	41	Black
4	BRH701918	Male	66	Hispanic
5	BRH701916	Male	50	Black

Table 2. Specifications of the RDTs used for this study.

Brand	WHO PDS	Catalog #	Lot #	Date of Manufacture	Expiration Date	Manufacturer
Paracheck Pf	96.0	30301025	311310	02/12	01/14	Orchid Biomedical Systems
One Step Pf	67.7	522352	201209025	N/A	09/14	Blue Cross Biomedical
ParaHit Pf	80.8	551C101-50	4000006366	3/24/11	3/24/13	Span Diagnostics
ParaHit Total	35.4	551C204-50	4000007699	11/24/11	1/24/13	Span Diagnostics
			4000010071	12/31/12	12/31/14	Span Diagnostics
ICT Dual	78.8	ML03	50130	09/12	09/14	ICT Diagnostics
ICT Pf	86.9	ML01	10006	05/12	05/14	ICT Diagnostics
			50131	05/12	05/14	ICT Diagnostics

Figure 1. ICT Pf Lot #50131 (top photo) ICT Pf Lot #10006 (bottom photo). The control line for Lot #10006 is missing. The tests in the Figure were analyzed at 100 parasites/ μ L.

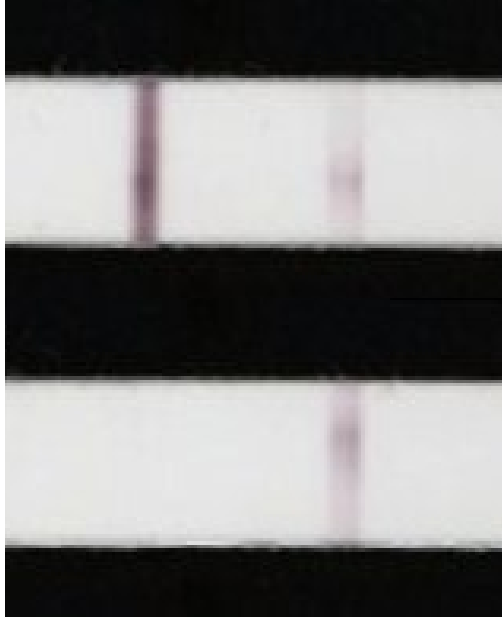


Figure 2. The integrated area of the RDT signal for extracted (black bars) and unextracted (gray bars) samples at 200 parasites/ μ L. These areas were used for the calculation of the enhancement factor.

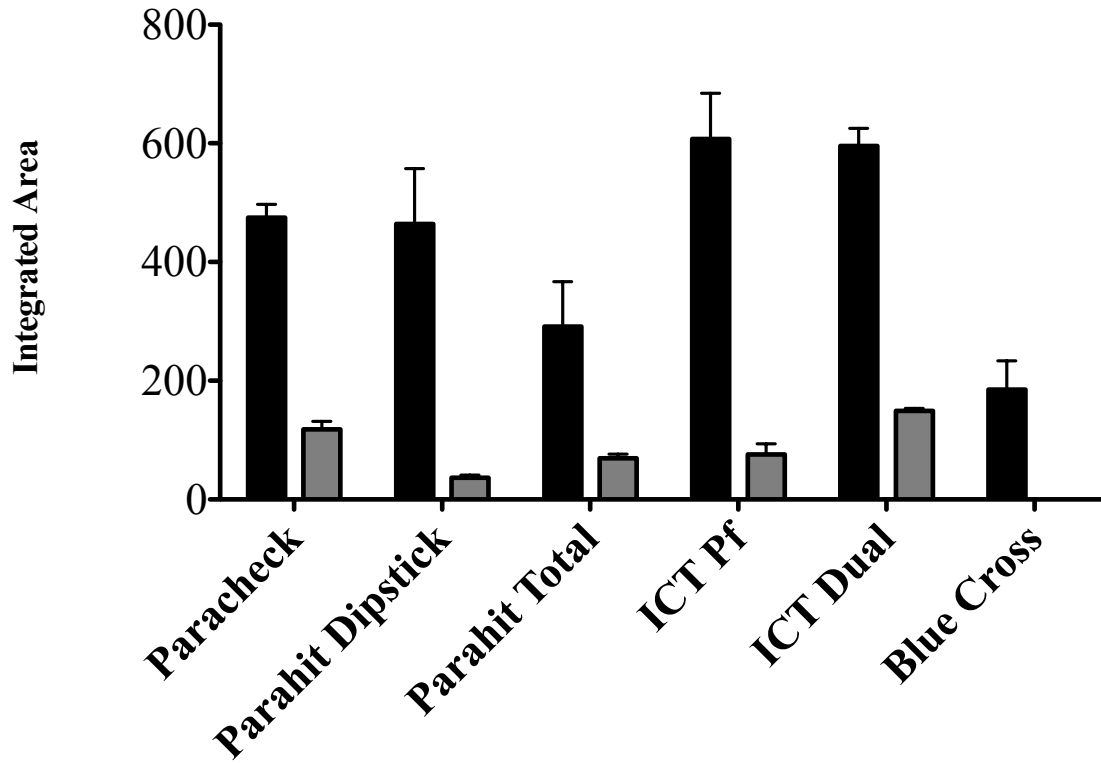


Figure 3. Comparison of the calculated limits of detection for extracted (black bars) and unextracted (gray bars) samples based upon the presented pixel analysis algorithm.

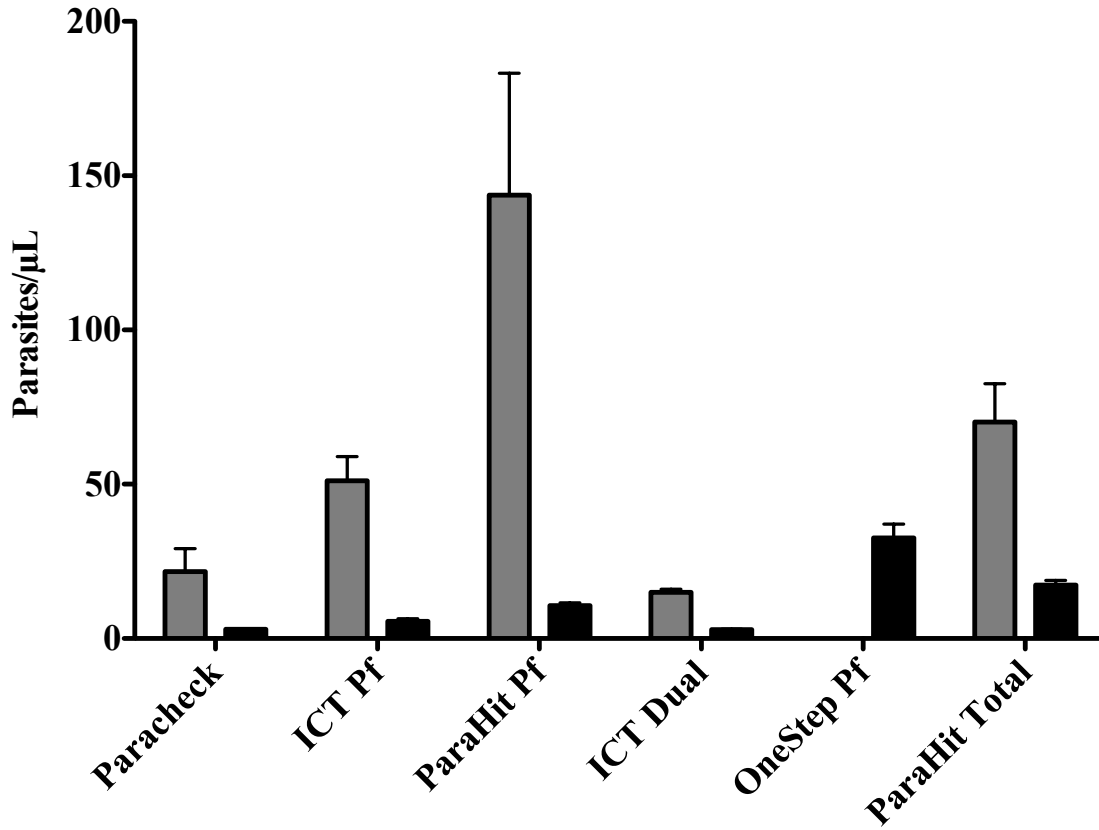


Figure 4. Calculated enhancement in the limit of detection for each RDT brand.

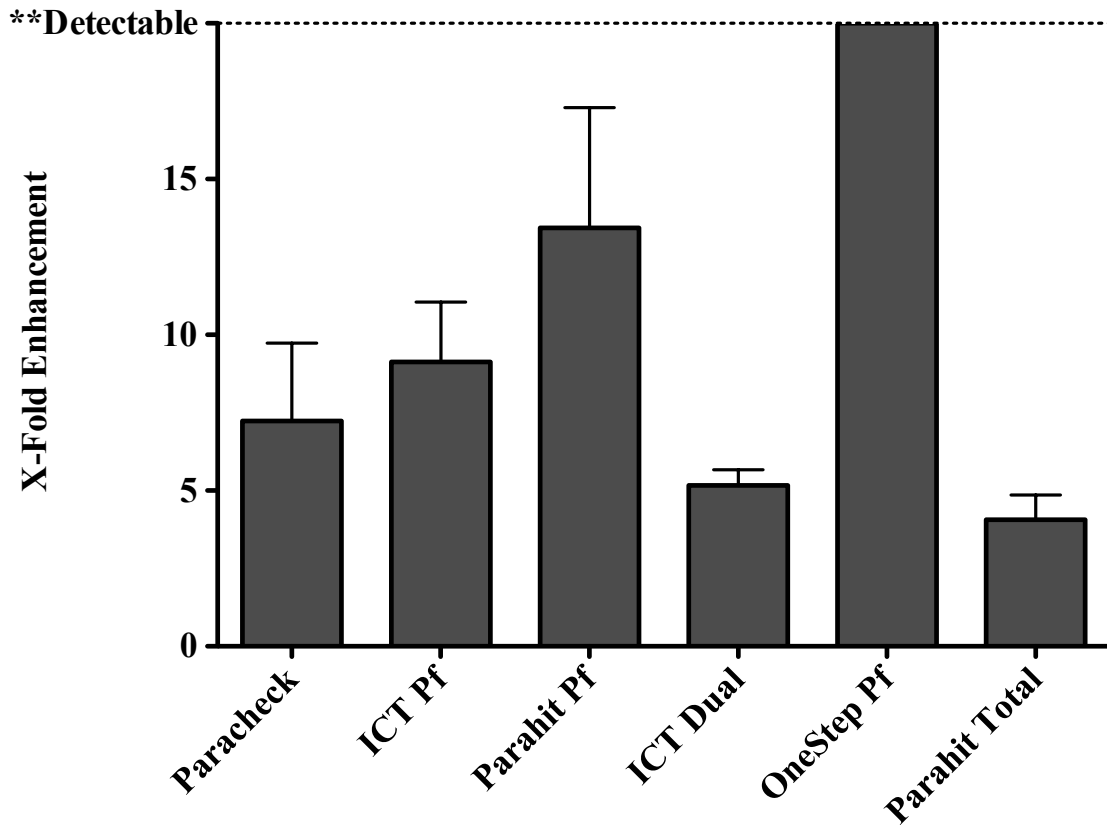


Figure 5. The integrated area of the RDT signal for unextracted samples at 2000 parasites/ μ L. All brands are able to detect *PfHRPII* at this level of parasitemia.

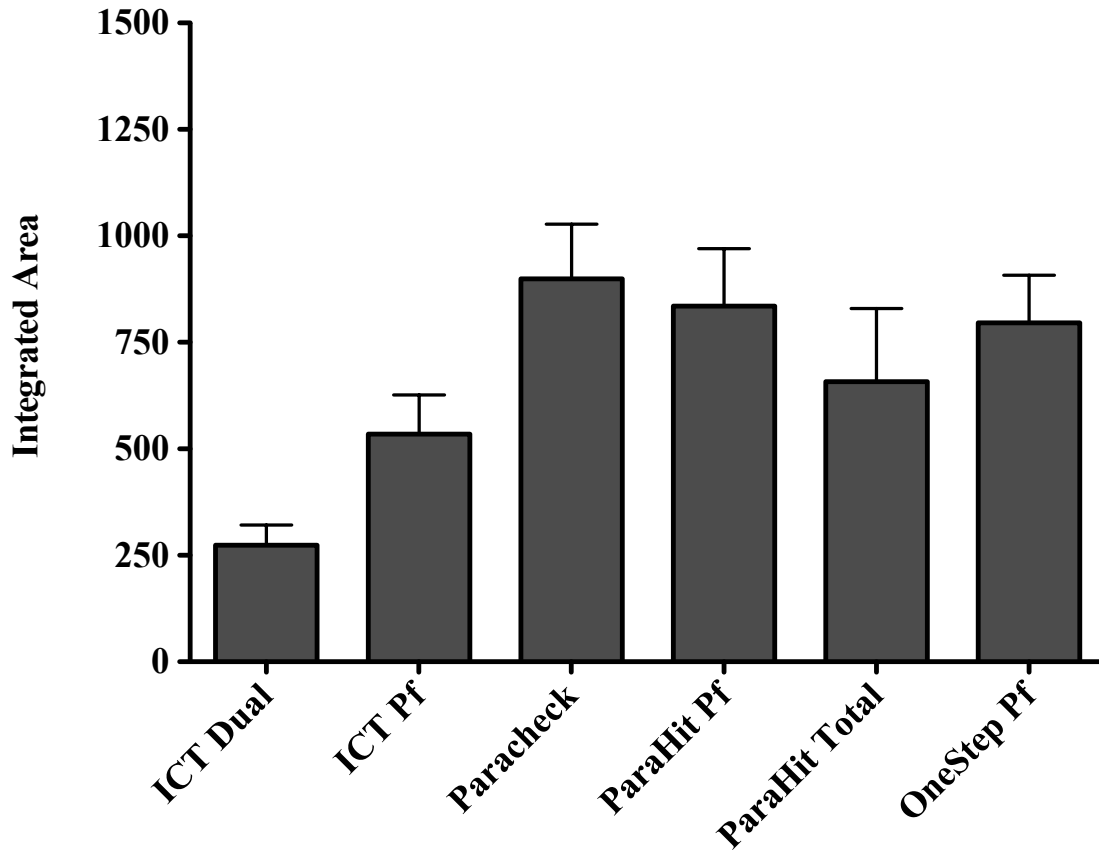


Figure 6. One Step RDTs with 200 parasite/ μ L samples unextracted (top photo) and extracted (bottom photo). Smearing of residual blood (when unextracted) and gold nanoparticles (when extracted) caused difficulty in test analysis.

