

Assessment of different genotyping markers and algorithms for distinguishing *Plasmodium falciparum* recrudescence from reinfection in Uganda

Table S1: Number of samples genotyped per treatment arm

Drug	AL Treatment arm			DP Treatment arm			
Study site	Aduku	Arua	Masafu	Aduku	Arua	Masafu	Total
Number retrieved	60	78	120	24	40	50	372 (186 pairs)
Number genotyped	60	78	108	24	40	48	358 (179 pairs)
Number analyzed	56	78	106	22	40	46	348 (174 pairs)

Table S2: *msp-1*, *msp-2* and *glurp* genotyping

Master mix components and preparation

Component	Stock concentration	Final concentration	Volume for one reaction (µL)
PCR water			16.8
Forward primer	1010 µM	0.2 µM	0.5
Reverse primer	10 µM	0.2 µM	0.5
Buffer	10X	1X	2.5
dNTPs (2 mM), 0.75 MgCl ₂ (50mM),		200 µM	2.5

Taq Polymerase	5 U/μL	1.5 mM	0.2
Template DNA			2
Final Volume			25

PCR conditions

Msp-1

Stages	Steps	Primary round			Nested round		
		Temperature (°C)	Time	Cycles	Temperature (°C)	Time	Cycles
Initial denaturation		95	5 min	1	95	2 min	1
2. PCR	1. Denaturation	94	1 min	25	94		30
	2. Annealing	61	45 sec		61	30 sec	
	3. Extension	72	1.5 min		72	1 min	
3. Final elongation & Hold	1. Final elongation	72	5 min	1	72	5 min	
	2. Hold	4	∞		4	∞	

Msp-2

Stages	Steps	Primary round			Nested round		
		Temperature (°C)	Time	Cycles	Temperature (°C)	Time	Cycles
Initial denaturation		94	5 min	1	94	2 min	1
2. PCR	1. Denaturation	94	1.5 min	40	94	1.5	30
	2. Annealing	55	45 sec		55	45 sec	
	3. Extension	72	1.5 min		72	1.5 min	
3. Final elongation & Hold	Final elongation	72	10 min	1	72	10 min	
	2. Hold	4	∞		4	∞	

Glurp

Stages	Steps	Primary round			Nested round		
		Temperature (°C)	Time	Cycles	Temperature (°C)	Time	Cycles
Initial denaturation		95	5 min	1	95	2 min	1
2. PCR	1. Denaturation	94	1 min		94	1 min	30
	2. Annealing	58	2 min		58	2 min	

	3. Extension	72	2 min	25	72	2 min	
3. Final elongation & Hold	1. Final elongation	72	10 min	1	72	10 min	
	2. Hold	4	∞		4	∞	

Table S3: Mean expected heterozygosity and number of effective alleles of the genotyped markers.

Marker	Aduku		Arua		Masafu	
	H _e	N _e	H _e	N _e	H _e	N _e
K1	0.88	7.45	0.93	12.00	0.92	10.84
MAD20	0.89	6.67	0.93	11.59	0.90	8.29
RO33	0.63	2.56	0.56	2.21	0.68	2.99
IC/3D7	0.94	12.63	0.94	14.71	0.95	16.26
FC 27	0.87	6.92	0.87	6.92	0.85	6.23
<i>Glurp</i>	0.86	6.44	0.89	8.28	0.92	11.71
313	0.95	15.47	0.95	15.72	0.95	17.56
383	0.90	8.97	0.88	7.63	0.85	6.49
Poly- α	0.92	10.47	0.91	9.98	0.94	14.02
TA1	0.86	6.59	0.89	7.63	0.89	8.56
PfPK2	0.87	7.18	0.87	7.15	0.85	6.42
2490	0.56	2.20	0.60	2.47	0.68	3.03
TA109	0.83	5.39	0.88	7.70	0.88	7.78

Table S4. Recrudescence outcome based on the cumulative Bayesian probabilities.

Third marker	AL treatment arm				DP treatment arm			
	Arua	Aduku	Masafu	Total	Arua	Aduku	Masafu	Total
Poly- α	9	8	15	32	7	2	9	18
PfPK2	11	9	16	36	7	3	10	20
TA1	11	8	15	34	6	3	9	18
TA109	8	9	16	33	6	2	8	16
2490	10	9	15	34	5	2	10	17
313	11	9	15	35	6	3	9	18
383	11	14	15	40	6	3	10	19
<i>glurp</i>	11	8	14	33	5	3	8	16