



**Supplementary Figure S1.** Location of fixed sentinel sites for therapeutic efficacy monitoring in Angola, 2019

**Supplementary Table S1:** Microsatellite lengths of paired Day 0 - Day of Failure samples from cases of recurrent parasitemia observed during 2019 round of therapeutic efficacy monitoring in Angola. Last column shows posterior probability of recrudescence obtained from Bayesian analysis of observed data and reflects the statistical support that the recurrent parasitemia is due to a recrudescence (posterior probability = 1) or reinfection (posterior probability = 0).

Chromosome Marker Name Sample ID	2 313 C2	3 383 C3	6 TA1	4 POLYA	12 PFPK2	10 2490	6 TA109	Posterior Probability of Recrudescence
BD19009D0	228	123 139	171	153	168 186	81 84	175	0.27
BD19009D28	216	123 145	168 177	150 168	168	84	175 199	
BD19010D0	218	137	177	168	165	84	172	0.35
BD19010D28	218 228	123	165 180	150 168 177	162 168	84	172 184	
BD19016D0	228	123	165	171	162	81	160	0.00
BD19016D21	244	145 157	174	135 165	162 171	81 84	178 199	
BD19017D0	220	145	159	162	162	84	163	0.00
BD19017D21	246	145	165	162	171 186	84	175 199	
BD19020D0	252	145	171	150	162	84	163	0.00
BD19020D28	230	137	162 171	168	174 201	81	163	
BD19026D0	244	171	189	165	189	81	160	0.00
BD19026D28	238	145	168	159	180	84	175	
BD19031D0	220 264	123 149	159 177	141 159	168 177	81 84	172 184	0.00
BD19031D28	216	139	165 171	144 165	165 168	81 84	178	
BD19042D0	236	123	177 180	156	180 186	81 84	175	0.00
BD19042D21	NA	NA	189	162	162 204	84	163 199	
BD19065D0	220	137	204	156	195	84	172	0.00
BD19065D28	230 252	137	162 168 174	153 168	162 186	84	160	
BD19066D0	226	145	204	168	171	84	163	1.00
BD19066D14	226	145	204	168	171	84	163 199	
BD19094D0	216	147	171	153	165	84	178	1.00
BD19094D21	216	147	171	153	165	84	178	
ZL19201D0	232	123	168	159	180	84	175	0.00
ZL19201D21	236	143	183	150	174	72	175	
ZL19203D0	238	137	162	NA	162	84	172	0.00
ZL19203D14	242	125	165 168	138 180	159 192	81 84	160 172 199	
ZL19204D0	250	143	168	129	165 180	81	172	0.64
ZL19204D21	220	123	195	153 171	180	81	175	
ZL19209D0	240	143	159	156	183	84	175	1.00

ZL19209D21	240	143	159	156	183	84	175	
ZL19218D0	262	141	168	156	186	84	190	0.00
ZL19218D28	234	123	174	144	174	84	160	
ZL19231D0	220 248	123 151	168	153 165	159	84 93	160	0.81
ZL19231D28	218 224 248	NA	165	156	NA	84	199	
ZL19235D0	214 252	165	162 180	138	171	81	175	0.00
ZL19235D28	218	137	168	150	159	87	163	
ZL19236D0	226	125 139	174	150	168	81 84	160	1.00
ZL19236D14	226	139	174	150	168	84	160 199	
ZL19244D0	238	147	159	147	174	84	163	1.00
ZL19244D21	238	147	159	147	174	84	163	
ZL19246D0	236	139	159	165	165	84	172	0.00
ZL19246D21	234	123	174	153	174	81	172	
ZL19251D0	218 224 240	123 139	159 165	171	165 186 192	84	175	0.90
ZL19251D28	240	139	159	177	159	84	175 184 199	
ZL19260D0	238	125	186	150	165 186	84	175	0.69
ZL19260D21	212	125	177	180	159	72 84	160	
ZL19262D0	242	125	162 192	138 177	168 186	84	172	0.26
ZL19262D28	220	125	168	141	165	81 84	163	
ZL19274D0	224	123	174	141 147	171 183 192	81 84	160	1.00
ZL19274D21	224	123 153	174	141 147 177	171 183	81 84	160	
ZL19293D0	248	139	162	153	165	84	181	0.00
ZL19293D29	248	141	162	153	165	84	160	
ZL19294D0	252	157	174	153	174	84	160	0.00
ZL19294D28	236	135	138	168	165	84	184	
LL19000D0	244	123	192	114	165	84	160	1.00
LL19000D21	244	123	192	114	165	84	160	
LL19007D0	244	165	174	141	189	81	172	1.00
LL19007D28	244	165	174	141	189	81	172	
LL19013D0	246	141	174	141	165	84	163	1.00
LL19013D21	246	141	174	141	165	84	163	
LL19014D0	230	123	183	171	168	72	175	1.00
LL19014D21	230	123	183	171	168	72	175	
LL19016D0	226	123	180	150	165	87	199	0.00
LL19016D14	228	141 149	186	150 171	156 171	84	160 199	
LL19017D0	240	123	174 177	150	162 174	84	160 184	1.00
LL19017D21	240	123	174	150	174	84	160	

LL19033D0	228	169	159	144	183	84	172	
LL19033D21	228	169	159	144	177 183	84	172	1.00
LL19054D0	238	123 135	168 171	150 156	162 174	84	160 175	
LL19054D21	220 228 234 260	125	168 171	153	162 171 174	81 84	160 175	0.80
LL19062D0	238	149	165	171	162	84	172	
LL19062D14	244	139	171	147 156	168	84	175 199	0.00
LL19071D0	274	149	165	162	177	72	160	
LL19071D21	274	149	165	162	177	75	160	0.99
LL19073D0	236	123	171	150	162 174	81 84	172	
LL19073D21	236	123	171	150	162	84	172	1.00
LL19081D0	226 232	123 135 145	162 165 168	153 162 177	165 180	84	172	
LL19081D21	226	145	168	177	180	84	172	1.00
LL19089D0	256	137	177	150	159 177	84	163	
LL19089D14	NA	137	165	144	159 171 177	84	172 184 199	0.82
LL19091D0	214	123 145	159 171	147 156 171	162 171	81 84	175 190	
LL19091D14	232	123	159	147	171	NA	175 184 199	0.88
ZD19017D0	238	165	195	144	189	81	184	
ZD19017D28	238	165	195	144	189	81	184	1.00
ZD19028D0	244	141	162	156 171	171	84	172	
ZD19028D21	250	135	159	156	165	84	160	0.00
ZD19031D0	258	139	162	171	189	84	163	
ZD19031D21	238	139	171	156	168	84	175	0.00
ZD19039D0	236	145	162	153	186	84	172	
ZD19039D14	212 242	139 147	159 168	150 159	168	84	160 175	0.00
ZD19043D0	224	139	168 183	132 138	159 168 186	84 90	160	
ZD19043D28	224	133	168 180	168	186	84	172 184	0.74
ZD19047D0	254	147	195	168	174	84	160	
ZD19047D28	226	149	171	150	165	84	172	0.00
ZD19066D0	234 250	123 133	168	150 153 162	162 177 189	84	172 184	
ZD19066D21	258	135 139	141 168	153 162	162	81 84	172	0.86
ZD19072D0	234	139	177	150	165	84	160	
ZD19072D28	218	123	162	150	180	81	178 187	0.00
ZD19075D0	226	145	165	150	156	81	172	
ZD19075D21	252	123	168	153	165	84	175	0.00
ZD19081D0	222	147	171 183	153	168	81 84	172	
ZD19081D21	224 238	145 153	165 168	132 150 177	162 168 189	81 84	172	0.25
ZD19092D0	242	123	177	150	165	84	163	0.00

ZD19092D28	242	123	168 174	141 150	168 183	84	166 175	
ZD19098D0	236	151	174	150	159	84	160	
ZD19098D21	238	139	159 183	150 162 165	159 192	81 84	172	0.06
ZD19100D0	252	139	159	159	186	84	160	
ZD19100D28	250	123	174	165	186	87	160	0.00

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**Supplementary Table S2:** Diversity characterized using Simpson's index for neutral microsatellite loci observed during 2019 round of therapeutic efficacy monitoring in Angola.

Microsatellite marker	Site		
	Zaire	Benguela	Lunda Sul
313 C2	0.062 (0.059–0.065)	0.074 (0.069–0.078)	0.070 (0.065–0.074)
383 C3	0.122 (0.110–0.131)	0.174 (0.157–0.187)	0.151 (0.129–0.168)
TA1	0.099 (0.092–0.104)	0.119 (0.111–0.125)	0.114 (0.105–0.122)
POLYA	0.086 (0.080–0.091)	0.107 (0.100–0.113)	0.098 (0.088–0.105)
PFPK2	0.105 (0.098–0.110)	0.121 (0.110–0.130)	0.120 (0.111–0.128)
2490	0.381 (0.354–0.406)	0.572 (0.523–0.618)	0.382 (0.338–0.422)
TA109	0.159 (0.148–0.169)	0.173 (0.163–0.180)	0.158 (0.147–0.167)

Numbers in parentheses represent 95% credible intervals. Simpson's index is defined as  $\sum f_i^2$ , where  $f_i$  is the frequency of the  $i$ th allele. The index varies from 0 (highest diversity) to 1 (lowest diversity).

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