

Supplementary material

Test comparison between SD-Bioline Ov-16 rapid diagnostic test and microscopy

The prevalence of onchocerciasis determined by the SD-Bioline Ov-16 rapid diagnostic test (RDT) and microscopy varied across districts and communities. Adaklu district recorded the lowest RDT positivity, with 20 of 345 participants testing positive (5.8%; 95% CI: 3.6-8.8), while no participants were positive by microscopy (0%; 95% CI: 0-1.1). Hohoe district recorded an RDT positivity of 24.8% (25/101; 95% CI: 16.7-34.3) and a microscopy positivity of 5.0% (5/101; 95% CI: 1.6-11.2). Nkwanta North district had the highest RDT positivity, with 203 of 455 participants testing positive (44.6%; 95% CI: 40.0-49.3), while microscopy detected infection in 11 participants (2.4%; 95% CI: 1.2-4.3) (Table S1).

At the community level, Abunyanya recorded the highest RDT positivity at 53.6% (186/347; 95% CI: 48.2-58.9), followed by Abledzie at 24.8% (25/101; 95% CI: 16.7-34.3) and Lancha at 16.5% (15/91; 95% CI: 9.5-25.7). Lower RDT positivity was observed in Gborsike (11.8%; 95% CI: 1.5-36.4), Dawanu (7.6%; 95% CI: 3.3-14.5), Afeyeame (5.1%; 95% CI: 1.4-12.6), and Hlihave (4.9%; 95% CI: 2.2-9.5). Positive microscopy cases were detected only in Abledzie (5.0%; 95% CI: 1.6-11.2) and Abunyanya (3.2%; 95% CI: 1.6-5.6), whereas no positives were detected in Afeyeame, Dawanu, Gborsike, Hlihave, or Lancha (Table S1).

Table S1. Prevalence of onchocerciasis by district and community

Variable	Total	RDT Positive (%; 95% CI)	Microscopy Positive (%; 95% CI)
District			
Adaklu District	345	20 (5.8; 3.6-8.8)	0 (0; 0-1.1)
Hohoe District	101	25 (24.8; 16.7-34.3)	5 (5; 1.6-11.2)
Nkwanta North District	455	203 (44.6; 40-49.3)	11 (2.4; 1.2-4.3)
Community			
Abledzie	101	25 (24.8; 16.7-34.3)	5 (5; 1.6-11.2)
Abunyanya	347	186 (53.6; 48.2-58.9)	11 (3.2; 1.6-5.6)
Afeyeame	78	4 (5.1; 1.4-12.6)	0 (0; 0-4.6)
Dawanu	105	8 (7.6; 3.3-14.5)	0 (0; 0-3.5)
Gborsike	17	2 (11.8; 1.5-36.4)	0 (0; 0-19.5)
Hlihave	162	8 (4.9; 2.2-9.5)	0 (0; 0-2.3)
Lancha	91	15 (16.5; 9.5-25.7)	0 (0; 0-4)

Diagnostic performance between SD-Bioline RDT and microscopy based on endemicity

The sensitivity and specificity of the SD-Bioline Ov-16 RDT compared with microscopy for each endemic district is presented in Table S2. Adaklu district (low-endemic district) recorded a specificity of 94.2% and a sensitivity of 0.0%. Nkwanta and Hohoe Districts (high endemic districts) recorded a sensitivity of 68.8% and a specificity of 59.8%. The kappa values were 0.000 ($p=0.8038$) for the low-endemic district and 0.0385 ($p=0.0221$) for the high-endemic districts, indicating no agreement in the low-endemic district and only slight but statistically significant agreement in the high-endemic districts.

Table S2. Diagnostic performance of SD-Bioline Ov-16 RDT and microscopy in two endemic settings.

Endemic districts	Sensitivity (%)	Specificity (%)	Kappa (p-value)
Low (Adaklu)	0 (0.0-97.5)	94.2 (91.2-96.4)	0 (0.8038)
High (Nkwanta & Hohoe)	68.8 (41.3-89.0)	59.8 (55.5-64.0)	0.0385 (0.0221)

Diagnostic performance between Microscopy and qPCR

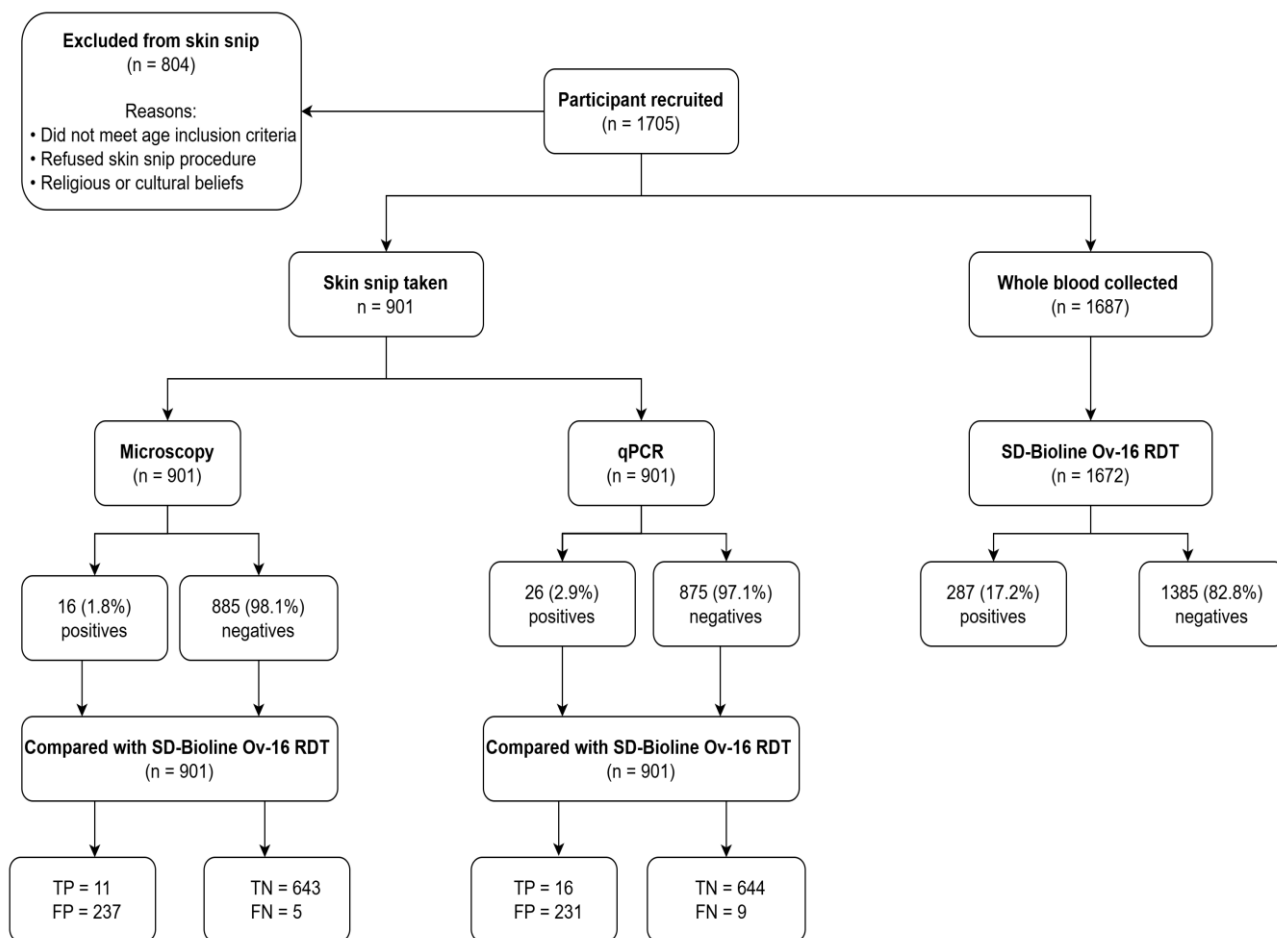
Table S3 presents the diagnostic performance of microscopy compared with qPCR, using qPCR as the gold standard. Table S4 presents the same comparison, but with microscopy used as the gold standard.

Table S3. Diagnostic performance of microscopy and qPCR (as the gold standard).

		qPCR		Total
		Positive	Negative	
Microscopy	Positive	4	12	16
	Negative	22	863	885
	Total	26	875	901
Sensitivity: 15.38% (95% CI: 4.35-34.87), Specificity: 98.63% (97.62-99.29), Kappa: 0.1722 (95%: 0.0109-0.3337)				

Table S4. Diagnostic performance of qPCR and microscopy (as the gold standard).

		Microscopy		
		Positive	Negative	Total
qPCR	Positive	4	22	26
	Negative	12	863	875
	Total	16	885	901
Sensitivity: 25.0% (95% CI: 7.27-52.38), Specificity: 97.51% (96.26-98.44), Kappa: 0.1722 (95%: 0.0109-0.3337)				



Flow Diagram of the Inclusion and Exclusion Criteria

