

Performance characteristics of the *PlexPCR*[®] *VHS* assay for the detection of *Treponema pallidum* and other pathogens in genital and extragenital lesions

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Background

- Genital or extragenital lesions are caused by different microorganisms that may present as co-infections.
- We implemented the *PlexPCR*[®] *VHS*, a qualitative real-time PCR (qPCR) assay for simultaneous detection of four pathogens:
 1. *Treponema pallidum* (TP),
 2. and 3. Herpes simplex virus (HSV) types 1/2
 4. Varicella zoster virus (VZV)
- In genital and extragenital lesions of STI-clinic users diagnosed with early syphilis.

Methods

- We collected lesion exudates in microtubes with lysis buffer, following by DNA extraction and amplification using conventional PCRs to detect *tp0574* and *tp0548* target genes for TP screening
- DNA samples were also amplified using the *PlexPCR*[®] *VHS* kit (SpeeDx, Australia) (Figure 1)

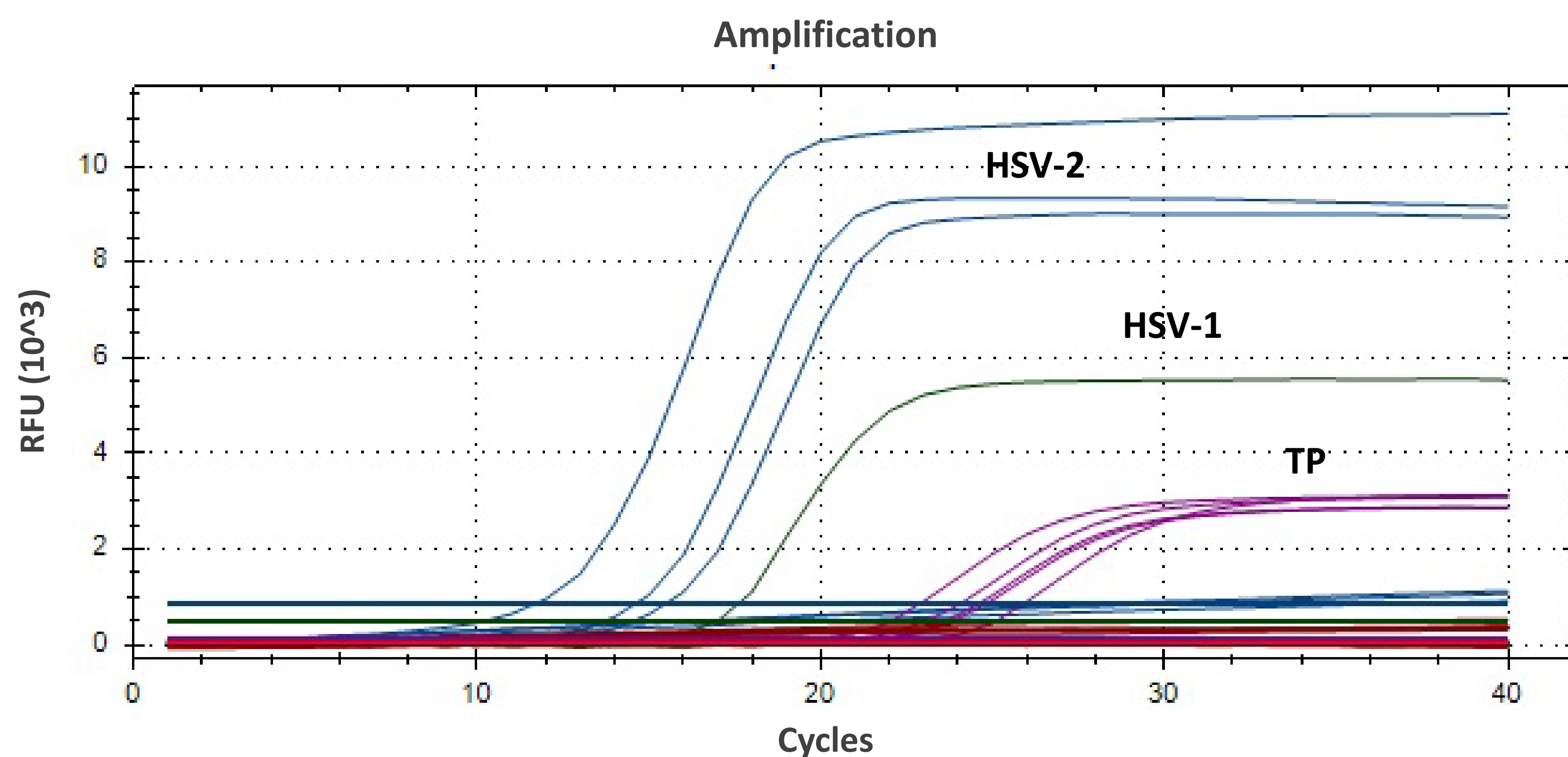
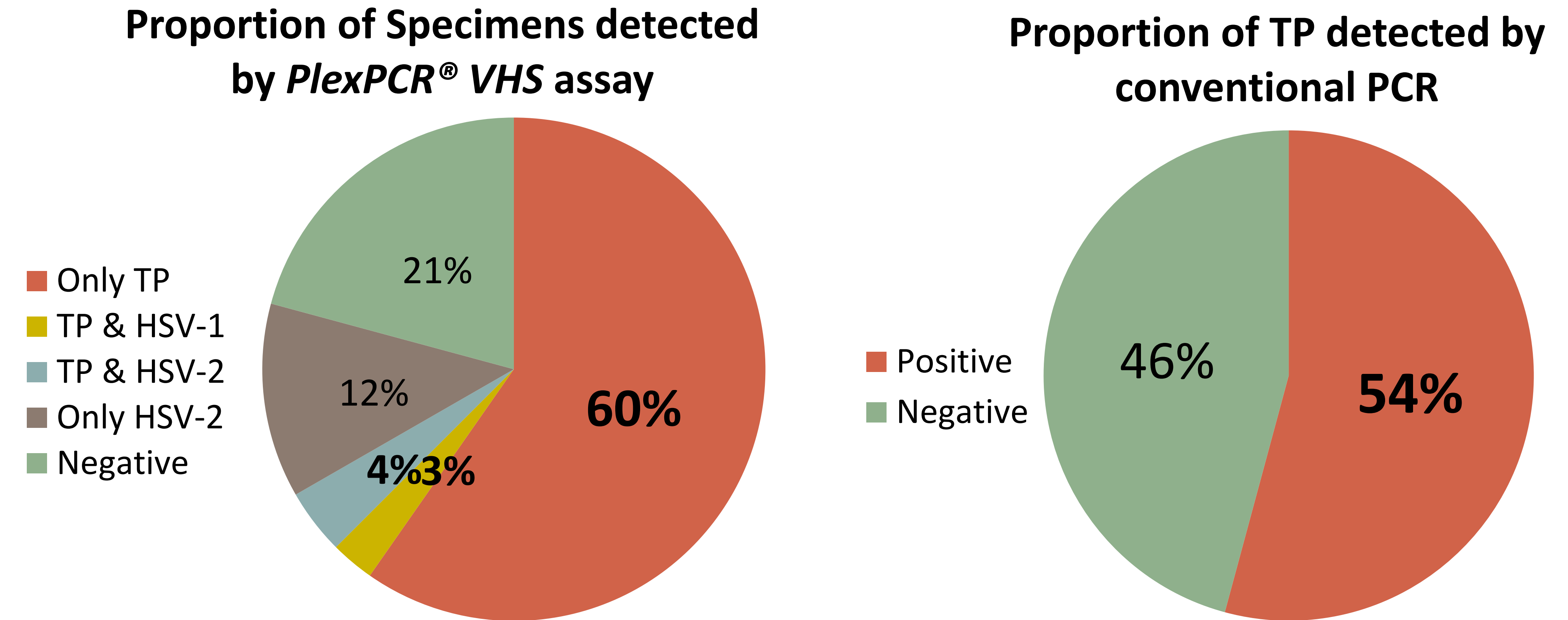


Figure 1. Amplification curves of qPCR assay using *PlexPCR*[®] *VHS* kit

Results

- We screened 72 lesions, most (92%) from patients diagnosed as primary syphilis



- Among the sixteen painful lesions, *PlexPCR*[®] *VHS* found nine TP positive and two HSV-2 positive, while conventional PCR detected only eight TP positive.

Table 1: Percent agreement of *PlexPCR*[®] *VHS* kit TP component and conventional PCR with clinical diagnosis for primary syphilis cases and for painful lesions

	<i>PlexPCR</i> [®] <i>VHS</i> -TP target	Conventional TP PCR
Primary syphilis (n=66)	44 (67%)	37 (56%)
Painful lesion (n=16)	9 (56%)	8 (50%)

Conclusions

- The *PlexPCR*[®] *VHS* kit increase the detection of TP and other STI pathogens from lesion samples of patients diagnosed with early syphilis

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