

# AMPATH LAB UPDATE

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## The Genital Ulcer Multiplex PCR



### Introduction

The majority of genital ulcers are caused by sexually transmitted infections (STI). The pathogens most commonly responsible for genital ulcers include: Herpes simplex type 1 and 2, *Treponema pallidum*, *Haemophilus ducreyi*, *Chlamydia trachomatis* serovar L 1-3, as well as *Klebsiella granulomatis*. The presence of genital ulcers increases the risk of acquiring HIV. These patients may also be co-infected with other sexually transmitted pathogens.

Diagnosis and appropriate management is therefore important. In addition to the above pathogens, varicella zoster virus may rarely involve the genital area, and cytomegalovirus may present with genital ulceration in immune-compromised patients. Table 1 outlines the genital ulcer pathogens screened for using the newly implemented genital ulcer multiplex assay at Ampath laboratories.

**Table 1: Genital ulcer disease multiplex PCR test details**

Organism detected	Comments
Herpes simplex virus type 1	Causative agents of genital herpes. Multiple vesicular lesions that rupture and become shallow painful ulcers. Constitutional symptoms may be present in primary infection. Generally regarded as the most common cause of genital ulcers.
Herpes simplex virus type 2	
Varicella zoster virus	Herpes zoster may involve the genital area. Clinically, it resembles genital herpes.
Cytomegalovirus	May present as genital ulceration in immuno-compromised patients.
<i>Treponema pallidum</i>	The causative agent of syphilis. It classically presents as a single, painless, well-demarcated ulcer (chancre) with a clean base and indurated border. The presentation may be atypical with multiple ulcers in HIV-positive patients.
<i>Haemophilus ducreyi</i>	The causative agent of chancroid. It presents with painful genital ulcer/s with a necrotic base and tender fluctuant inguinal lymphadenopathy.
<i>Chlamydia trachomatis</i> serovar L 1-3	The causative agent of lymphogranuloma venereum. It presents as a small, painless genital or rectal papule or ulcer without induration. Tender inguinal lymphadenopathy. Outbreaks have been described among men having sex with men (MSM). May present with rectal pain, bleeding or discharge if rectal involvement. Tenesmus and constipation may also be present in these cases.
Validated specimen types	Genital ulcer swabs, bubo aspirate and rectal swabs.
Mnemonic	GENULPCR
Turnaround time	48-72 hours

It should be noted that this assay does not test for *Klebsiella granulomatis*, the causative agent of granuloma inguinale/donovanosis. This pathogen is difficult to culture and can be detected by observing Donovan bodies on stained smears prepared from tissue biopsy.