Micro Health Laboratories

.....for precious life

MicroPlex Detects

- 16 Bacteria
- 7 Viruses
- 1 Parasite
- 7 Candida spp.
- 28 HPV (19 high / 9 low risk)

MicroPlex Sexually Transmitted Infections [STI]

Qualitative & Quantitative Real-Time PCR Panels

MHL KIS Keeping you Informed Series...

Diagnosis Education Research

MicroPlex Sexually Transmitted Infections (STI) Panels

[Qualitative and Quantitative Real-Time PCR]

Ordering MicroPlex panels

Panel 1

MicroPlex STI Vital RT-PCR Panel

- Chlamydia trachomatis (CT)
- Mycoplasma genitalium (MG)
- Mycoplasma hominis (MH)
- Neisseria gonorrhoeae (NG)
- Trichomonas vaginalis (TV)
- Ureaplasma parvum (UP)
- Ureaplasma urealyticum (UU)

Panel 2

MicroPlex Genital Ulcer RT-PCR Panel

- Cytomegalovirus (CMV)
- Haemophilus ducreyi (HD)
- Herpes simplex virus type 1 (HSV1)
- Herpes simplex virus type 2 (HSV2)
- Lymphogranuloma venereum (LGV) -Chlamydia trachomatis Serovar L
- Treponema pallidum (TP)
- Varicella-zoster virus (VZV)

Panel 3

MicroPlex Candidiasis RT-PCR Panel

- Candida albicans (CA)
- Candida dubliniensis (CD)
- Candida glabrata (CG)
- Candida krusei (CK)
- Candida lusitaniae (CL)
- Candida parapsilosis (CP)
- Candida tropicalis (CTp)

Panel 4

MicroPlex Bacterial Vaginosis RT-PCR Panel

- Bacterial vaginosis–associated bacteria 2 (BVAB2)
- Bacteroides fragilis (BF)
- Megasphaera Type 1 (Mega 1)
- Mobiluncus spp (Mob) - (Mobiluncus mulieris, Mobiluncus curtisii)
- Atopobium vaginae (AV) (Quantitative)
- Gardnerella vaginalis (GV) (Quantitative)
- Lactobacillus spp (Lacto) (L.crispatus, L.gasseri, L. jensenii) (Quantitative)

Panel 5

MicroPlex Triple-H [HIV 1 & 2 , HBV & HCV] RT-PCR Panel

- HIV 1 & 2 - Viral Load
- HBV - Viral Load
- HCV - Viral Load

[Quantitative Detection of HIV 1 & 2, HBV & HCV]

Panel 6

MicroPlex Human Papillomavirus [HPV] 28 Genotypes RT-PCR Panel

High-risk HPV (19) genotypes: 16, 18, 26, 31, 33, 35, 39, 45 ,51, 52, 53, 56, 58, 59, 66, 68, 69, 73, 82.

Low-risk HPV (9) genotypes: 6, 11, 40, 42, 43, 44, 54, 61, 70.

[Detection, Differentiation & Quantification of 28 HPV genotypes]

12 - 24 Hours* TAT varies respective to branches, pls call your nearest Micro Health Laboratories for further clarifications

If you have not been tested for infections but are experiencing symptoms,

we strongly recommend all STI panels tests to find the root cause.

MICRO Diagnosis Education Research

Sexually Transmitted Infections (STIs)

STIs, also termed sexually transmitted diseases (STDs), represent a group of diseases that affect sexual and reproductive health. More than 1 million STIs are acquired every day worldwide, the majority of which are asymptomatic. To date, more than 30 bacterial, viral, and parasitic pathogens are transmissible sexually and constitute a group of infections called STIs. Some STIs can increase the risk of HIV acquisition threefold or more. Some of these microorganisms are eliminated after a period of time, while others are recurrent, and some remain in the body asymptomatically, allowing the progress of the disease and generating consequences such as inflammations of the genitourinary tract, infertility, and even the development of cancer.

Genital Ulcer

The majority of Genital Ulcers are caused by STIs, although there are noninfectious etiologies that should be considered once STIs have been ruled out. Genital Ulcer diagnosis depends only on the patient's medical history and physical examination, which is inaccurate.

Candidiasis

Vulvovaginal candidiasis (VVC) usually is caused by Candida albicans; however, other species of Candida such as glabrata, parapsilosis, and tropicalis are emerging. Typical symptoms of VVC include pruritus, vaginal soreness, dyspareunia, external dysuria, and abnormal vaginal discharge. None of these symptoms is specific for VVC. An estimated 75% of women will have at least one episode of VVC, and 40%–45% will have two or more episodes in thier lifetime. On the basis of clinical presentation, microbiology, host factors, and response to therapy, VVC can be classified as either uncomplicated or complicated. Approximately 10%–20% of women will have complicated VVC, requiring special diagnostic and therapeutic considerations. In pregnancy, VVC can be prolonged and associated with more severe symptoms, and resolution of symptoms typically requires longer courses of therapy.

Bacterial Vaginosis

Bacterial vaginosis (BV) is considered to be the most frequent vaginal infectious disorder in women of childbearing age. BV is characterized by: decreased or absent Lactobacillus spp.; a logarithmically increased concentration of G. vaginalis; and a set of potentially pathogenic bacteria, including A. vaginae, Megasphaera types 1 and 2, bacterial vaginosis–associated bacteria 2 (BVAB2), Bacteroides spp., Mobiluncus spp., Mycoplasma spp., and U. urealyticum/parvum. BV is related to considerable and possibly preventable infectious morbidity in non-pregnant women. The presence of these microorganisms along with a depletion of the protective lactobacilli suggests that vaginal microbial conditions are abnormal. Clinical symptoms of BV include an increase in vaginal pH, vaginal discharge, and an unpleasant fishy odor. BV is associated with an increased risk of sexually transmitted infections, endometritis, pelvic inflammatory disease, post-surgical abortion infections, post-hysterectomy infections, an increased risk of HIV acquisition, and serious pregnancy complications, including miscarriage and preterm birth. BV is very common in women of reproductive age and is one of the most common reasons that women seek treatment from health care providers.

Clinical utility of STI / GU / CA / BV panels

Clinical requirement		STI Vital Panel	Genital Ulcer Panel	Candidiasis Panel	Bacterial Vaginosis Panel
Asymptomatic Patient	STI/BV screening for woman	●	●	●	●
	STI screening for man	●	●	●	
	STI screening	●			
Symptomatic Patient	Genital ulcer		●		
	Vaginal discharge			●	●
	Cervicitis / Urethritis	●	●		
	Pelvic inflammatory disease	●			●

Human Papillomavirus (HPV)

Human papillomavirus (HPV) is the most common STI. HPV is a group of more than 200 related viruses; kind of non-enveloped double-stranded circular DNA virus with small molecular weight. It infects and parasitizes epithelial cells in human reproductive organs and other organs. Clinically, HPV falls into two types, including high-risk and low-risk HPV, according to the different degrees of pathogenicity or carcinogenic risk of different subtypes. Low-risk HPV mainly causes pathological changes such as exogeneity warts in the anal

skin, male external genitalia, female labia, urethral orifice, and vaginal lower segment, and low-grade cervical intraepithelial neoplasia. High-risk HPV can cause not only external genital warts but, more seriously, external genital cancer, cervical carcinoma, and high-grade cervical intraepithelial neoplasia. Cervical cancer, which progresses from the precancerous stage to invasive cancer, has a 7–20-year precancerous stage; consequently, an early diagnosis is possible when HPV infection is suspected.

HPV tracking management:

1. Genotyping of 28 HPV types;

- A high-risk HPV group may lead to the development of cervical cancer; Especially, HPV16 &18 are associated with 70% of cervical cancer.
- HPV31, HPV33- showed significantly low clearance rate.
- HPV52, HPV31, HPV58- reported frequently following HPV16 in precancerous stage.
- The 10-most prevalent HPV types detected in cervical cancer HPV16, 18, 45, 53, 58, 31, 52, 35, 39, & 59.
- Low-risk HPV groups, including HPV6 & 11, may cause genital warts.

2. Identification of Co-Infection with multiple HPV types (HPV66, HPV11, HPV16);

- Co-infection is reported frequently in cervical cancer and precancerous lesion.
- Co-infection accelerates the rate of progression into cervical cancer and precancerous lesion.
- Co-infection accelerated progression and development into cervical cancer with cumulative number of HPV types.
- Co-infection increases the risk of cervical cancer significantly.

3. Viral load information of infected HPV;

- The viral load information of HR-HPV has a significant relationship with the degree of cervical intraepithelial neoplasia (CIN).
- A 10-fold increase in HPV viral load is associated with a significantly increased risk of acquiring and developing an incident cervical cytologic abnormality in women during follow-up.
- HR-HPV viral load information should be reported in the routine molecular HPV test.

Human immunodeficiency virus (HIV) 1 & 2

The human immunodeficiency virus (HIV) is a lentivirus (a subgroup of retrovirus) that causes the disease known as AIDS (Acquired Immunodeficiency Syndrome), a syndrome where the immune system begins to fail, leading to many life-threatening opportunistic infections. While AIDS cannot be transmitted from one person to another, the HIV virus can. Transmission of HIV occurs primarily sexually; however, HIV infections are also caused by contaminated blood transfusions, the reuse of injection needles, perinatal transmission during pregnancy, and breastfeeding. HIV-1 is more virulent, more easily transmitted, and is the cause of the majority of HIV infections globally, while HIV-2 infection has milder outcomes than HIV-1 infection, and 75% of HIV-2-infected patients have been found to be asymptomatic. The HIV-1 and HIV-2 qualitative tests only identify whether someone is HIV positive or negative. The HIV-1 and HIV-2 viral load test is a quantitative test that tells us the amount of HIV virus in the blood sample. This test is done in those who are known to be HIV positive and is a way of monitoring their infectiousness and response to HIV treatment.

Hepatitis B virus (HBV)

The hepatitis B virus (HBV) causes the disease hepatitis B. The hepatitis B virus is unique among human viral pathogens as it is a DNA virus that replicates via an RNA intermediate and thus belongs to the reverse transcribing DNA and RNA viruses. HBV is part of the Hepadnaviridae family of viruses, which consists of genotypes A–H. HBV, which affects around two billion people globally and causes around 6,00,000 deaths each year. The infection, which can be acute or chronic, occurs in the liver. Acute infections are mostly asymptomatic, but sometimes they may cause symptoms such as jaundice, extreme fatigue, vomiting, and abdominal pain. A chronic infection can develop into cirrhosis of the liver and liver cancer. Transmission occurs from contact with infected blood or other body fluids through perinatal, transfusion, injection, and sexual routes, as well as through close contact with infected family members, especially in early childhood. Despite the availability of effective vaccination and antiviral drugs, Hepatitis B remains a major global health problem. The most common methods of diagnosing Hepatitis B are serology-based assays and molecular tests. HBV DNA is detectable about three weeks before the appearance of serological markers. Quantitation of HBV DNA is useful in the evaluation and management of patients with chronic HBV infection. Current WHO guidelines also recommend HBV DNA viral load testing in disease response and/or treatment response.

Hepatitis C virus (HCV)

Hepatitis C Virus (HCV) belongs to the genus Hepacivirus, a member of the family Flaviviridae. The HCV is classified into six major genotypes (1-6) with several subtypes within each genotype. It is the cause of Hepatitis C and some cancerous lymphomas in humans. Unlike Hepatitis A and B, there is no vaccine as of yet that protects against contracting Hepatitis C. Globally, genotype 1 (specifically subtypes 1a and 1b) is the most prevalent, causing almost half of all HCV infections. Nucleic acid amplification tests (NAAT) for the detection of HCV RNA are recommended to be performed directly following a positive HCV serological test to establish the diagnosis of chronic HCV infection. This is because a portion of the infected population spontaneously clears the infection with a strong immune response and without any treatment. They will continue to test positive for anti-HCV antibodies despite clearing the infection. Quantitative NAATs are also important in order to make clinical decisions on starting treatment for HCV infection.

MicroPlex Panels

New age testing approach

MicroPlex panels:

Diagnosing STI pathogens has several limitations. STI pathogens often co-infect their hosts. Most STIs do not show noticeable symptoms; therefore, it is important to screen for a wider range of pathogens. Further complicating STI diagnosis is that different pathogens can cause similar symptoms, but the antibiotic treatment regimen may differ depending upon the pathogen. This complexity of issues makes simultaneous and accurate STI detection a major key to cost-effective patient care. Therefore, methods enabling the simultaneous detection of multiple target pathogens are essential for accurate diagnosis. Early and correct diagnosis of the pathogens reduces complications, the need for antibiotics, and laboratory testing, and enables the doctor to decide on the best course of therapy for the patient.

Sexually Transmitted Infections **STIs**

In order to treat STIs effectively, you need to have a **Comprehensive STI test**

- 16 Bacteria
- 7 Viruses
- 1 Parasite
- 7 Candida
- 28 HPV

Powered by:

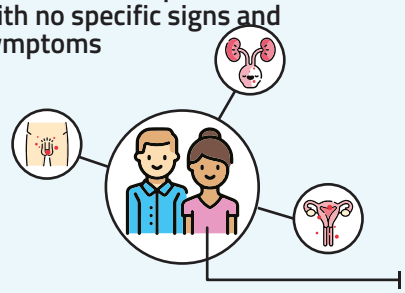
MICRO MolD™ department of molecular biology

Classical methods of microorganism identification are often extremely time-consuming. MicroPlex testing addresses this specific concern where sensitive and quick results are the need of the hour. MicroPlex assay is a real-time PCR assay that permits simultaneous amplification and detection of target nucleic acids of the pathogens. Our panels will cover a wide range of microorganisms that can cause the particular symptoms, also called syndromic testing. Reports are delivered in hours instead of days, which provides the critical lead time for the physician providing critical care.

MicroPlex testing is a qualitative and quantitative Real-time PCR assay for the detection of pathogens. This assay may provide a quick and easy method for clinical diagnostics. As per the published scientific literature, RT-PCR assays have better sensitivity than traditional bacterial or viral cultures.

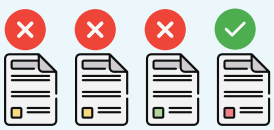
Advantages of MicroPlex STI panels:

Most of the STI patients are with no specific signs and symptoms



CLASSICAL METHODS IDENTIFICATION

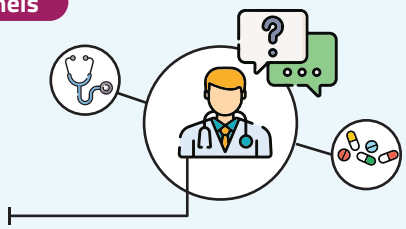
Multiple episode of testing prolongs the process of diagnosis.



MicroPlex STI Panels

ONE test with comphrehensive results within 12 to 24 hours*

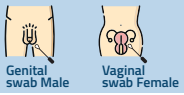
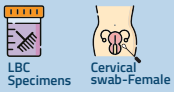
Clinicians have difficulty managing the patient based on symptoms alone



* Pls Call Micro Health Laboratories

Specimen Required

New age testing approach

Panel 1 2 3	**MicroPlex** STI - Vital RT-PCR Panel Genital ulcer RT-PCR Panel Candidiasis RT-PCR Panel	Urine Genital/Vaginal swab Liquid based cytology specimens	
Panel 4	**MicroPlex** Bacterial Vaginosis RT-PCR Panel	Genital/Vaginal swab Liquid based cytology specimens	
Panel 5	**MicroPlex** Triple H RT-PCR Panel	EDTA blood or Plasma	
Panel 6	**MicroPlex** Human Papillomavirus (HPV) 28 RT-PCR Panel	Cervical swab Liquid based cytology specimens Male patients: Require both genital swab and urine	

Specimen Handling:

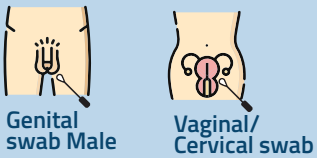
Urine specimen:

Urine

The patient should be advised not to urinate for at least two hours prior to specimen collection.

Collect 10~30 mL of first-catch urine in a clean polypropylene container. Close and label the sample containers. Strictly adhere to the instructions given for storage and transport.

Swab specimen:



Genital swab Male

Vaginal/ Cervical swab

Genital/Vaginal/Cervical swabs can be collected in a dry swab and transported to lab properley labeled . Strictly adhere to the instructions given for storage and transport. (Do not Freez)

Please follow a recommended protocol to collect columnar and squamous epithelium cells after removal of the cervical mucus.

Liquid based cytology specimen:

LBC Specimens

Use liquid-based cytology media.

Follow the manufacturer's instructions for collecting cervical cell specimens into media.

Blood specimen:

EDTA Blood or Plasma

3-5 ml of blood have to be drawn into a K2EDTA vacutainer.

Plasma is stable for up to five days at 2 to 8 °C and longer if frozen at -20 °C or -70 °C or lower. Do not store plasma samples in a "frost-free" freezer, as the temperature is cycled several times per day on this type of freezer, causing degradation of nucleic acid targets. Sample material should be transported in a leak-proof, unbreakable transport container to avoid leakage.

Note: Specimen Storage & Transport: 2~8 °C

About Us

Micro Health Laboratories (MHL) is a state-of-the-art facility that offers top-notch medical laboratory diagnostics, genomics, and research services. MHL represents experienced medical and scientific professionals; cutting-edge technology, uncompromising quality, and unrivalled customer service. MHL started in Kerala, India, in 1997. In this two decades, MHL has expanded its operations to Qatar, Dubai, Bangladesh, and Ghana. We offer the broadest range of tests in chromosomal analysis (Cytogenetics), molecular cytogenetic analysis- Fluorescent in situ hybridization (FISH), biochemical genetics, molecular, Microarray and Next Generation Sequencing (NGS). Our services are always cost-effective, high-quality, and with quick turnaround time.

Other Services Offered

New age testing approach

Reproductive Health Tests

- Carrier Screening
- Karyotyping
- Fluorescent in Situ Hybridization (FISH)
- Genetic diagnosis Package [Karyotyping, FISH, Microarray, NGS]
- Male Infertility
- Infectious Panel
- Female Infertility
- Preimplantation Genetic Test (PGT)
- Non-invasive Prenatal Testing (NIPT)
- Newborn Screening (NBS)
- Postnatal Tests - Metabolic disorders and cardiovascular diseases Panel

Genetics and Genomics Laboratory Team

Dr. Justin Carlus
Laboratory Consultant
& Clinical Scientist
PhD, PDF Human Molecular Genetics

Dr. Sajit Khan
Specialist Laboratory
Medicine and Microbiology
M.B.B.S., M.D

Dr. Lakshmanan L
Bioinformatician
PhD Bioinformatics

Anilda Mary
Microbiologist
MSc Medical Microbiology

Sandhiya Babu
Molecular Cytogeneticist
MSc Medical Genetics

Surabhi Ganga
Molecular Cytogeneticist
MSc Human Genetics

Neelam Kamble
Molecular Cytogeneticist
MSc Life Sciences (Biotechnology)

Aswathy Arun
Molecular Biologist
MSc Medical Microbiology

MICRO LABS @Home | MICRO GEN NIPT | Micropap | MicroCare | MICRO Cytogenetics | MICRO HEALTH Club

Micro Health Laboratories
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INDIA* | QATAR* | DUBAI | GHANA | BANGLADESH

Client Reports Powered by :
MICRO connectPortal

QATAR
(+974) 66544369
44596040 - Al Mamoura
44596041 - C Ring Road
44596042 - Duhail

UAE
(+971) 545810777
045474549

INDIA
(+91) 75919 84777
(+91) 738000 4000

www.microhealthcare.com | info@microhealthcare.com | microhealthreferencelaboratories | microhealthlaboratories