



**Clinical Notes:**

## Vaginal Microbiome Profile

Vaginal pH.

5.5 \*H

3.5 - 4.5



Opportunistic Bacteria	Result	Range	Units	
Enterococcus faecalis:	0.10	< 1.0	x10 <sup>5</sup> CFU/ml	
Escherichia coli:	<DL	< 1.00	x10 <sup>5</sup> CFU/g	
Klebsiella pneumoniae:	0.10	< 1.00	x10 <sup>5</sup> CFU/ml	
Proteus mirabilis:	<DL	< 1.00	x10 <sup>5</sup> CFU/ml	
Pseudomonas aeruginosa:	<DL	< 1.00	x10 <sup>5</sup> CFU/ml	
Streptococcus agalactiae:	<DL	< 1.00	x10 <sup>5</sup> CFU/ml	
Staphylococcus aureus:	<DL	< 1.00	x10 <sup>5</sup> CFU/ml	
Gardnerella vaginalis:	<DL	< 1.00	x10 <sup>5</sup> CFU/ml	
Atopobium vaginae:	0.01	< 1.00	x10 <sup>5</sup> CFU/ml	
Prevotella species:	<DL	< 1.00	x10 <sup>5</sup> CFU/ml	
Megasphaera species:	<DL	< 1.00	x10 <sup>5</sup> CFU/ml	
Ureaplasma species	<DL	< 1.00	x10 <sup>6</sup> CFU/ml	
Mycoplasma species	<DL	< 1.00	x10 <sup>6</sup> CFU/ml	

### Sexually Transmitted Infections

Trichomonas vaginalis:	Not Detected
Chlamydia trachomatis:	Not Detected
Neisseria gonorrhoeae:	Not Detected
Herpes Simplex Virus-1:	Not Detected
Herpes Simplex Virus-2:	Not Detected

**COMMENT:**

Not Detected results indicate the absence of detectable DNA in this sample. A negative result does not completely exclude infection.

### Opportunistic Fungal pathogens

Candida albicans:	<DL	< 1.00	x10 <sup>5</sup> CFU/ml	
Candida glabrata:	10.00 *H	< 1.00	x10 <sup>5</sup> CFU/ml	
Candida krusei:	<DL	< 1.00	x10 <sup>5</sup> CFU/ml	
Candida parapsilosis:	<DL	< 1.00	x10 <sup>5</sup> CFU/ml	
Candida tropicalis:	<DL	< 1.00	x10 <sup>5</sup> CFU/ml	

### Beneficial Bacteria:

Total Lactobacillus:	0.91 *L	> 1.00	x10 <sup>6</sup> CFU/ml	
Lactobacillus crispatus:	0.15 *L	> 1.00	x10 <sup>6</sup> CFU/ml	
Lactobacillus gasseri:	<DL *L	> 1.00	x10 <sup>6</sup> CFU/ml	
Lactobacillus iners:	<DL *L	> 1.00	x10 <sup>6</sup> CFU/ml	
Lactobacillus jensenii:	0.76 *L	> 1.00	x10 <sup>6</sup> CFU/ml	
Lactobacillus rhamnosus:	<DL *L	> 1.00	x10 <sup>6</sup> CFU/ml	
Lactobacillus salivarius:	<DL *L	> 1.00	x10 <sup>6</sup> CFU/ml	
Lactobacillus vaginalis:	<DL *L	> 1.00	x10 <sup>6</sup> CFU/ml	

### Bacterial Vaginosis:



P: 1300 688 522  
E: [info@nutripath.com.au](mailto:info@nutripath.com.au)

-.ALEXANDRA MIDDLETON  
6 EDWARDS BAY ROAD  
MOSMAN NSW 2088

**KRITIKA GUPTA**  
**11-Nov-1986**      **Female**

801/9 ALBANY STREET  
ST LEONARDS NSW 65

LAB ID :                    3819208  
UR NO. :                    6607455  
Collection Date :   30-May-2022  
Received Date:01-Jun-2022



3819208

**Clinical Notes:**

**Bacterial vaginosis**

**Negative**



**Clinical Notes:**

**Vaginal Microbiome Comments**

**VAGINAL pH ELEVATED:**

Vaginal pH can be elevated by the presence of pathogenic infection, blood, semen, vaginal medications, using certain soaps and douches. In the absence of the latter, an elevated pH may be the result of decreased serum oestradiol and is suggestive of menopause or hormone imbalance and may require further pathology investigation.

The typical vaginal pH is 3.5-4.5. Prepubertal and postmenopausal pH levels are normally >5 pH. With the increase of the oestrogen levels around puberty, the genital mucosa thickens and becomes colonized with *Lactobacillus* species which produce lactic acid and hydrogen peroxide to lower the pH below 4.5.

**References:**

Caillouette et. al., 1997, American Journal of Obstetrics and Gynaecology, 176(6)1270-1277.

Panda et. al., 2014, Journal of Mid-Life Health, 5(1):34-37.

Kaambo et. al., 2018, Front Public Health, 6:78.

**LACTOBACILLUS:**

*Lactobacillus* is the predominant genus in a healthy vaginal microbiota, and functions to inhibit the adhesion and proliferation of opportunistic and primary pathogens.

The presence of different *Lactobacillus* species is a major factor in the stability of the vaginal microbiome. Women with *L. iners*-dominant microbiomes are more likely to harbor *Candida* than women with *L. crispatus*-dominant microbiomes (due to higher production of lactic acid by *L. crispatus* compared to *L. iners*), leading to better anti-*Candida* activity (impeding *Candida* colonization) than *L. iners* through a greater production of lactic acid.

Furthermore, *L. iners* dominance has been associated with other negative health outcomes such as increased risks of *Chlamydia trachomatis* infection, incident Bacterial Vaginosis and defects in vaginal mucus that compromise antiviral barrier function.

**TOTAL LACTOBACILLUS LEVELS LOW:**

Total *Lactobacillus* quantification should be  $>1 \times 10^6$  CFU/ml in a healthy Vaginal Microbiome. Production of  $H_2O_2$  by *Lactobacillus* species is essential in inhibiting the overgrowth of pathogens. In cases where total *Lactobacillus* levels are low, presence of pathogenic bacteria should be reviewed and probiotic therapy should be considered.

Microorganisms not belonging to the *Lactobacillus* genus with the population equal to or greater than  $1 \times 10^5$  CFU/ml is considered to be disturbing the vaginal ecosystem equilibrium.

**References:**

Pacha-Herrera et. al., 2020, Frontiers in Cellular and Infection Microbiology, 10:303.

Oerlemans et. al., 2020, Europe PMC, 10(11).

Tomusiak et. al., 2013, Polish Society of Gynaecologists, 84:352-358.



**3819208**

**Clinical Notes:**

**Sex. Transmitted Infection Comments**

TRICHOMONAS VAGINALIS – Not Detected:

This does not completely exclude the possibility of infection as is dependent on an adequate specimen collection. If you have symptoms, please consult with your healthcare practitioner.

CHLAMYDIA TRACHOMATIS – Not Detected:

This does not completely exclude the possibility of infection as is dependent on an adequate specimen collection. If you have symptoms, please consult with your healthcare practitioner.

NEISSERIA GONORRHOEAE – Not Detected:

This does not completely exclude the possibility of infection as is dependent on an adequate specimen collection. If you have symptoms, please consult with your healthcare practitioner.

HERPES SIMPLEX VIRUS Type 1 – Not Detected:

This does not completely exclude the possibility of infection as is dependent on an adequate specimen collection. If you have symptoms, please consult with your healthcare practitioner.

HERPES SIMPLEX VIRUS Type 2 – Not Detected:

This does not completely exclude the possibility of infection as is dependent on an adequate specimen collection. If you have symptoms, please consult with your healthcare practitioner.

**Vaginal Candidiasis Comment:**

VAGINAL CANDIDIASIS (VC):

Candida sp. are both opportunistic fungal pathogens and commensal members of the vaginal microbiome.

VC is defined by disruption in Lactobacillus dominance (Total Lactobacillus  $<10^6$  CFU/ml) and high levels of Candida sp. ( $>10^5$  CFU/ml).

VC is predominantly caused by Candida albicans, with other species (C. glabrata, C. krusei, C. tropicalis, C. parapsilosis) also causative, although with milder symptoms.

VC is not associated with elevated vaginal pH levels. It is rare for fungal infections to be present combined with bacterial vaginosis.

VC symptoms include itching, discharge (typically white), burning sensation, dysuria (painful urination), dyspareunia (pain during sexual intercourse) and reddening of vaginal tissue due to invasion of the epithelium by Candida species. Asymptomatic vaginal candidiasis is also relatively common and does not require treatment. Risk factors include antibiotic use, poorly controlled diabetes mellitus, low immunity and oestrogen therapies.