Date of Birth	w
External Barcode	
Barcode	
Request Code	
Specimen collection date	27.02.2020
Date of Receipt	27.02.2020 16:41
Reporting Date	06.03.2020

GANZIMMUN AG - Hans-Böckler-Straße 109 - 55128 Mainz

Bioclinica
Laboratoarele
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DAkkS Deutsche Akkreditierungsstelle D-ML-13147-01-00

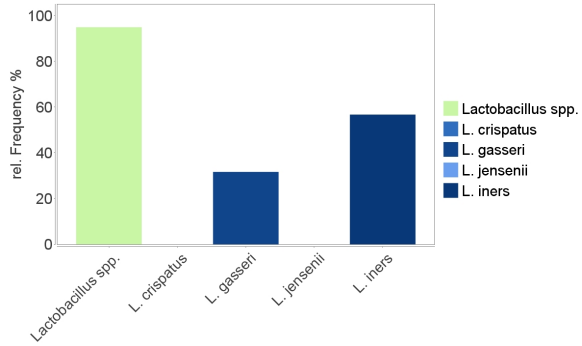
Laboratoryreport

Sample Material: Vaginalabstrich-Testset

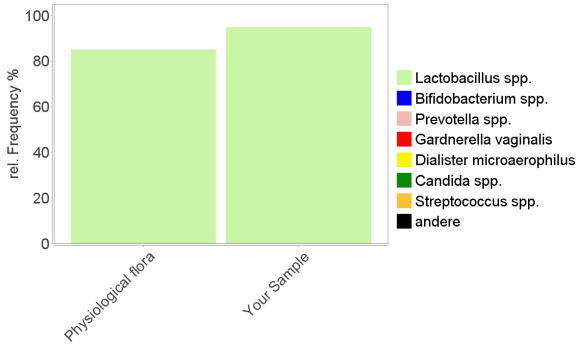
Vaginal microbiome - sequencing analysis of the vaginal flora

pH-Wert

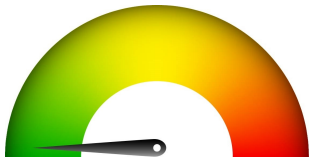
Vaginaltyp III



microbiocenosis

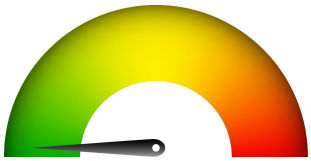


Vaginosis-Score



There is no evidence of bacterial vaginosis.

Biodiversity



Low diversity indicates physiological conditions.

Colonization / infections

Vaginal mycosis	pathogenic germs	Sexually transmitted pathogens

In your sample could be neither a pathological colonization by Candida, Geotrichum, streptococci or Staphylococci still be detected infection by sexually transmitted diseases.

bioindicators

pH-Wert	4,5		< 4,5
Biodiversität (Shannon Index)**	0,26		< 1,5
Vaginose-Score	0		< 4

Physiological flora

Test	Result		Initial Result	Norm
Lactobacillus spp.**	94,82	%		> 75
Lactobacillus acidophilus**	0.00	%		
Lactobacillus crispatus**	0.00	%		
Lactobacillus gasseri**	31,62	%		
Lactobacillus jensenii**	0.00	%		
Lactobacillus pentosus**	0.00	%		
Lactobacillus ultunensis**	0.00	%		
Lactobacillus iners**	56,67	%		
Bifidobacterium spp.**	0,01	%		

Vaginosis-associated bacteria

Test	Result		Initial Result	Norm
Aerococcus spp.**	0.00	%		< 0,10
Anaerotruncus spp.**	0.00	%		< 0,10
Atopobium vaginae**	0.00	%		< 0,10
Bacteroides spp.**	0,03	%		< 0,10
Dialister microaerophilus**	0.00	%		< 0,50
Eggerthella spp.**	0.00	%		< 0,10
Gardnerella vaginalis**	0.00	%		< 0,40
Gemella spp.**	0.00	%		< 0,10
Megasphaera spp.**	0.00	%		< 0,10
Mobiluncus spp.**	0.00	%		< 0,10
Peptoniphilus spp.**	0.00	%		< 0,50
Prevotella spp.**	0,01	%		< 0,10
Sneathia spp.**	0.00	%		< 0,10

Contamination flora

Test	Result		Initial Result	Norm
Clostridium spp.**	1,63	%		< 0,10
Escherichia spp.**	0.00	%		< 0,10
Kluyvera spp.**	0.00	%		< 0,10
Klebsiella spp.**	0.00	%		< 0,10
Ruminocoocus spp.**	0.00	%		< 0,10

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Potentially pathological flora

Test	Result		Initial Result	Norm
Acinomyces spp.**	0.00	%		< 2,3
Staphylococcus spp.**	0,01	%		< 1,00
Staphylococcus aureus**	0.00	%		< 0,10
Streptococcus spp.**	0,01	%		< 1,00
Streptococcus agalactiae**	0.00	%		< 0,10
Streptococcus pyogenes**	0.00	%		< 0,01

Vaginal mycosis

Test	Result		Initial Result	Norm
Candida spp.**	0.00	%		< 1,00
Candida albicans**	0.00	%		< 1,00
Candida glabrata**	0.00	%		< 1,00
Candida krusei**	0.00	%		< 1,00
Candida parapsilosis**	0.00	%		< 1,00
Candida tropicalis**	0.00	%		< 1,00
Geotrichum candidum**	0.00	%		< 1,00

Sexually transmitted pathogen

Test	Result	Initial Result	Norm
Chlamydia trachomatis**	negativ		negativ
Neisseria gonorrhoeae**	negativ		negativ
Mycoplasma genitalium**	negativ		negativ
Mycoplasma hominis**	negativ		negativ
Ureaplasma parvum**	negativ		negativ
Ureaplasma urealyticum**	negativ		negativ
Trichomonas vaginalis**	negativ		negativ

Molecular biological examination of the vaginal flora - interpretation

pH-Value

Your vaginal environment has a **pH-value** of 4.5 and thus lies in the borderline between physiological and dysbiotic area. This environment still offers a certain protective barrier against colonization by vaginosis-associated or pathogenic germs.
The pH has a regulating influence on the enzyme activity of the microorganisms colonizing the mucosa. Under the action of estrogen, glycogen is produced, which is fermented by lactobacilli to lactic acid.
An acidic environment (pH <4.5) facilitates the delivery of nitric oxide (NO), which has a bactericidal and virucidal activity.
Particular attention needs to be paid to the monitoring of pH due to its protective role in prenatal care.

Vaginaltyp

The **vaginal type III** is provided by Lactobacillus iners, not H_2O_2-forming Lactobacilli species, dominated. This type of vagina frequently correlates with transient states of vaginal flora between physiological and non-physiological, either as a result of hormonal changes (e.g., estrogens) or therapy (antibiotics, hormone therapy).

The vaginal microbiome is divided into five types (I-V) based on the proven bacterial species. The vaginal types I, II, III and V are characterized by a low diversity. They are distinguished by the dominant Lactobacilli species. The dominating species are *Lactobacillus crispatus* in type I, *Lactobacillus gasseri* in type II *Lactobacillus iners* in type III and *Lactobacillus jensenii* in type V. At physiological conditions, vaginal type I shows the greatest lactic acid formation and, correspondingly, the lowest pH. The lowest lactic acid formation and therefore higher pH values show type II and IV. In vaginal type IV or bacterial vaginosis, there is a reduction in the dominant lactobacilli flora in favor of other bacterial species such as *Gardnerella vaginalis* and anaerobics such as *Bacteroides, Prevotella, Atopobium vaginae* and *Mobiluncus* . Under these circumstances, biodiversity is increasing. This can be interpreted as an additional indication of a disturbed microbiome.

Vaginosis-Score

According to the molecular biological analysis of your vaginal flora, there are **normal physiological conditions** due to the bacteria detected.

The **diagnosis of bacterial vaginosis** (BV) is based on the study of germs whose ratio is shifted compared to healthy women. The vaginosis score is based on the determination and subsequent assessment of the relationship between the physiological flora (***lactobacilli***) and the BV-associated Germination (***Gardnerella vaginalis, Bacteroides, Prevotella*** and ***Mobiluncus***).

Assesment:
0-3 : no indication of BV
4-6 : no clear indication of BV
7-10: indication of BV

Biodiversity (Shannon-Index)

To measure the biodiversity within the vaginal flora, we use the "Shannon Index" (SI). This index is a commonly used weighted measure to indicate the diversity of bacteria in an ecological niche. For example, if there is only one bacterial species, the SI index is zero and there is no biodiversity
The physiological composition of the vaginal flora is dominated by different Lactobacillenspecies, other germs, however, are little or not present. Accordingly, such a microbiome has a **low biodiversity** .

Medically validated by Dr. med. Edith Lang