

Micro LifePipe®

An innovative pipeline to perform targeted microbiota quantitative analysis using next generation sequencing results.

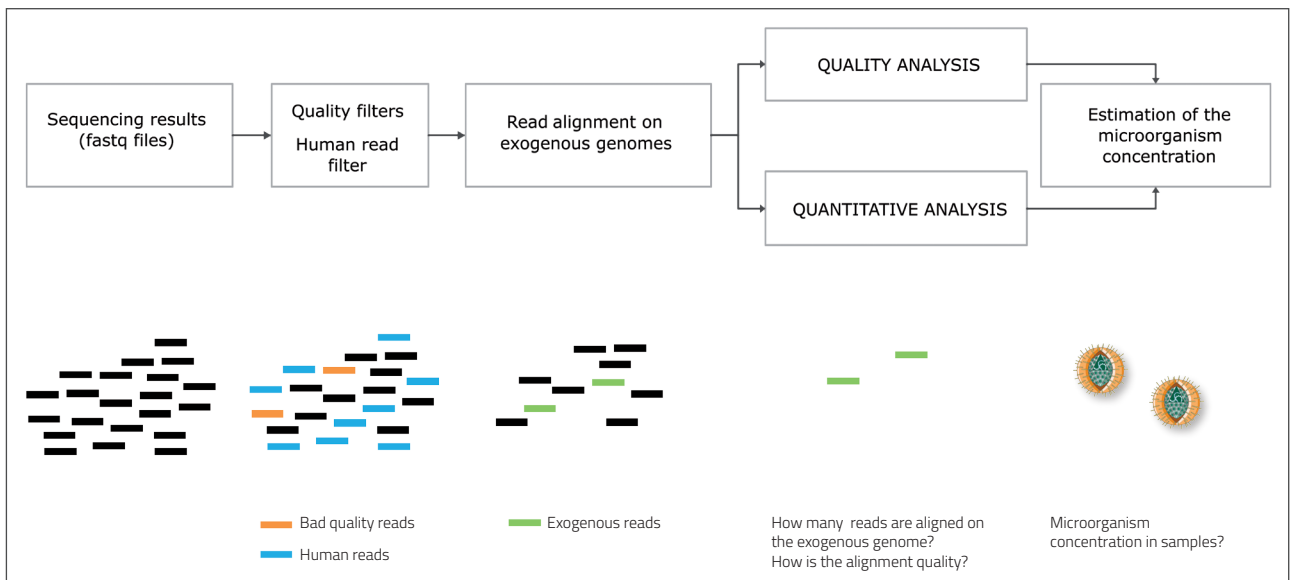
Micro LifePipe® is fast and accurate, it provides specific microorganism quantification for diagnostic and research applications.

Whole Genome Sequencing of biological samples triggered the emergence of new projects focusing on microbiota analysis. The influence of microorganisms on human health has been described in recent projects. Micro LifePipe® now brings absolute quantification which will become a new asset in microbiota analysis.

QUALITY TESTS ENABLE THE LIMITATION OF FALSE POSTIVE RESULTS

A first qualitative validation is performed on microorganism reference genomes. Low complexity DNA regions are masked to limit non-specific alignments.

Other quality tests are performed during the analysis process to check the samples sequencing quality and to filter out samples which do not pass our required quality criteria.



BETTER SENSITIVITY THAN CURRENT TECHNOLOGIES

Our tool is based on a calibration range of microorganism samples: a statistical model is built to determine microorganism concentration. This model is used to perform an absolute quantification of microorganisms present in a biological sample. Using this calibration, the detection threshold of our pipeline is very low - below the quantitative PCR threshold for virus detection and quantification.

MICRO LIFEPIPE® APPLICATIONS

The pipeline is used to study the microbiota from biological samples and quantify each species. It is also used for more targeted applications such as quantify a unique species like Cytomegalovirus quantification during pregnancy.

Detection and quantification of cytomegalovirus (CMV) from pregnant women based on plasmatic maternal samples.

Micro LifePipe® detects and quantifies CMV nucleic sequences from NIPT whole genome sequencing to prevent apparition of congenital CMV infection.

40% of CMV immunonegative women at the beginning of the pregnancy

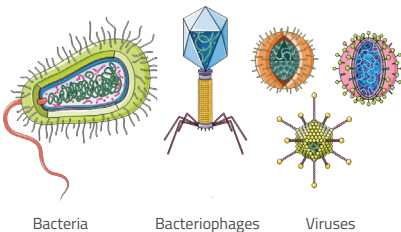
↳ 1% to 4% of maternal CMV infection during pregnancy

Micro LifePipe® detects viral sequences circulating in maternal plasma during active infection

↳ 40% (15% to 75%) of foetal CMV transmission of the virus

↳ 10% to 33% of congenital CMV infection in newborns

“ The microbiota represents all the microorganisms, like fungi, viruses or bacteria, living in a host environment. ”



Bacteria

Bacteriophages

Viruses

WHY CHOOSE MICRO LIFEPIPE® ?

Our bioinformatics pipeline is adapted to clinical diagnostics.

It has already been tested and validated for microbiota studies on next generation sequencing data. This innovative test is easily combined with other diagnostic and genetic tests using the same sequencing data.

Specific	Our tool provides detection sensitivity and specificity greater than 99% for one or more microorganisms.
Fast	The analysis is fast for the quantification of one microorganism : it takes about 5 minutes per sample.
Supported	The tool is supported by our expert team and updated regarding the new published genomes. We also provide training and support for users .
Flexible	Our pipeline is fully cutomizable to better achieve the goal of the analysis: species to quantify, detection threshold.
Compliant with all sequencing platforms	Our tool can be used with different sequencing technologies and all analysis platforms . The test can be performed independently or simultaneously with other genetic tests based on the same sequencing data.



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