

2026 GVN Annual International Scientific Meeting

TAMPA, FLORIDA, U.S.A.
March 4–6, 2026



USF Health

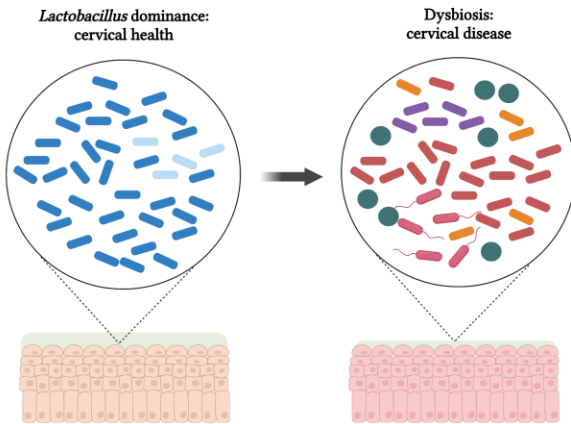
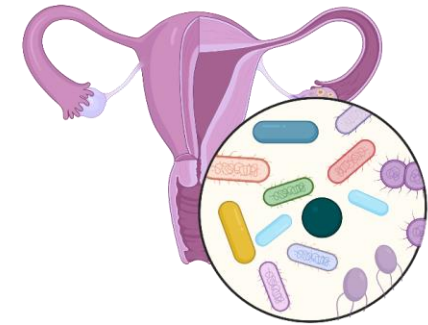


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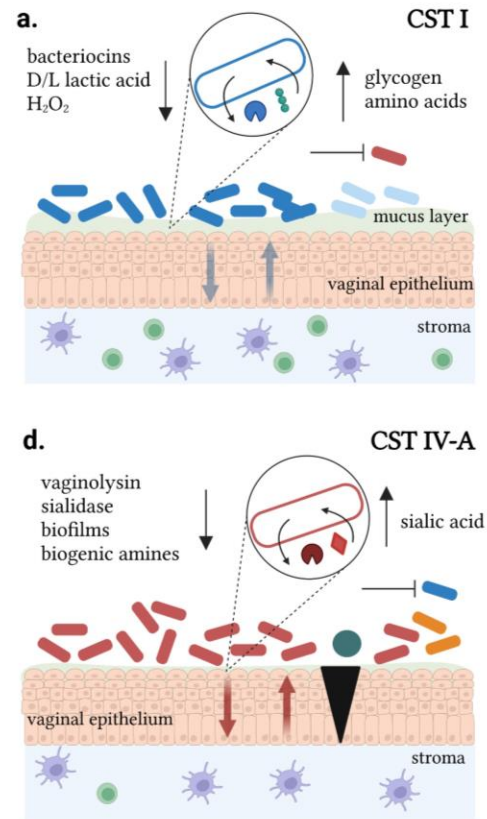
Longitudinal microbiome profiling identifies early microbial signatures associated with high-risk HPV infection outcomes in a screening population

Dr. Mariano Molina, PhD,
Department of Laboratory Medicine,
Karolinska Institutet, Sweden

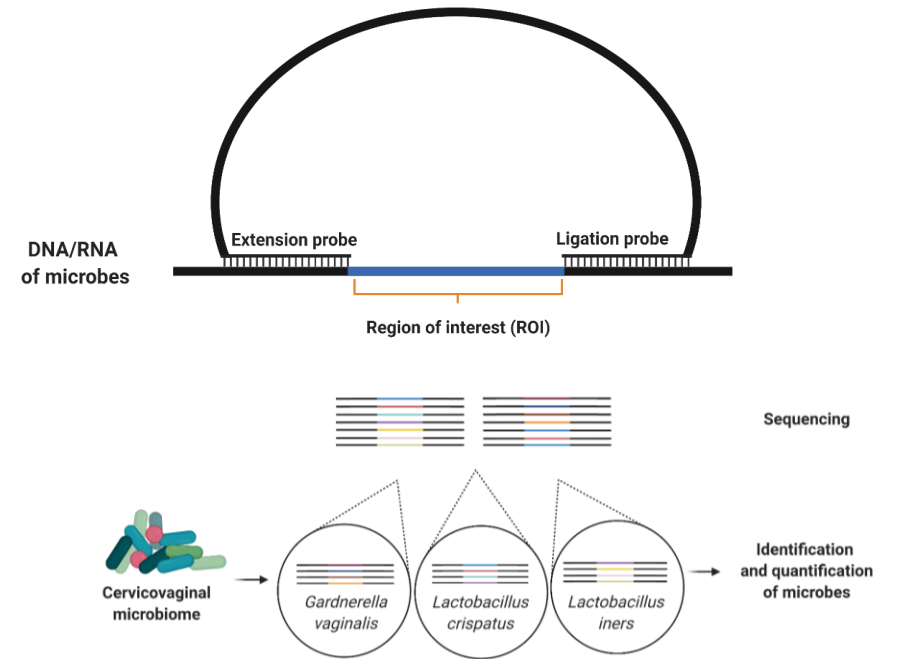
The cervicovaginal microbiome



Molina MA, et al., *mBio* (2022)



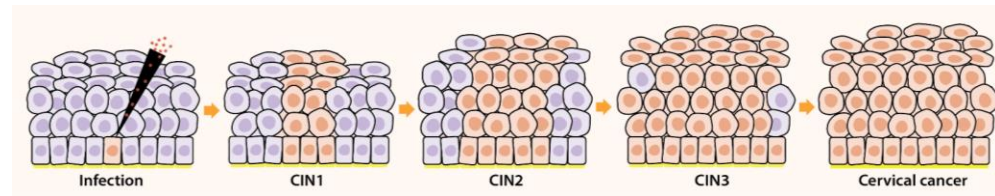
High-resolution microbiome profiling



Circular probes-based RNA sequencing (ciRNAseq)

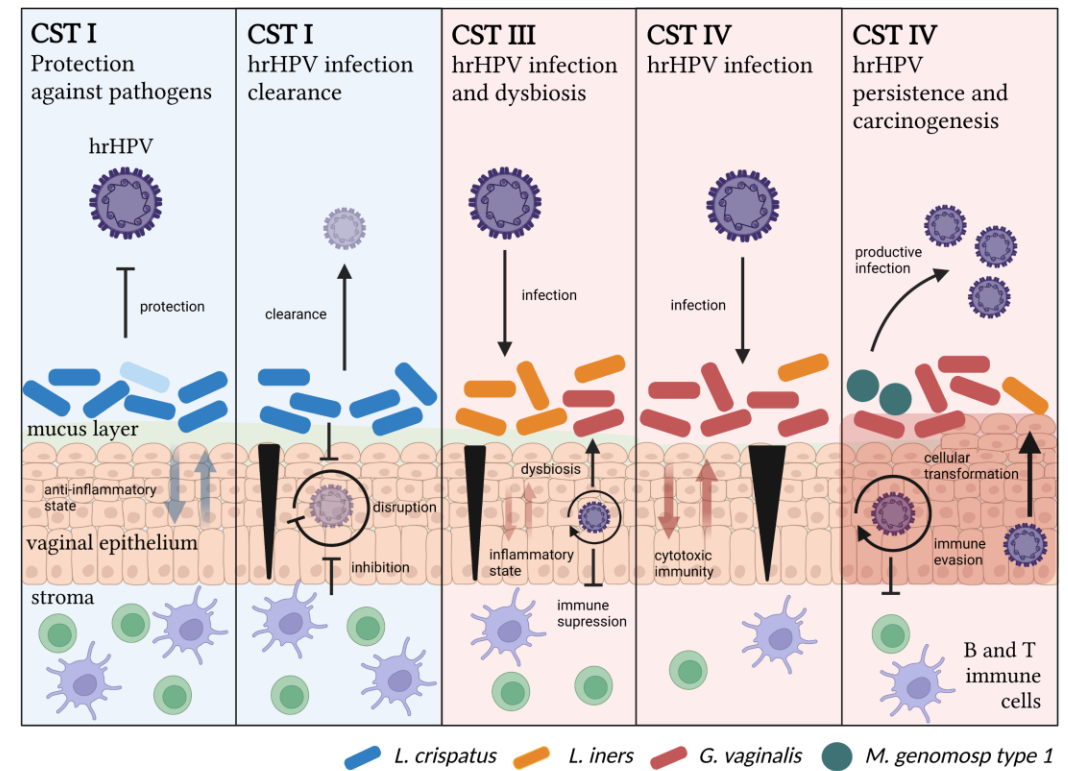
Andralojc KM, et al., *BMC Biology* (2021)

HPV infections

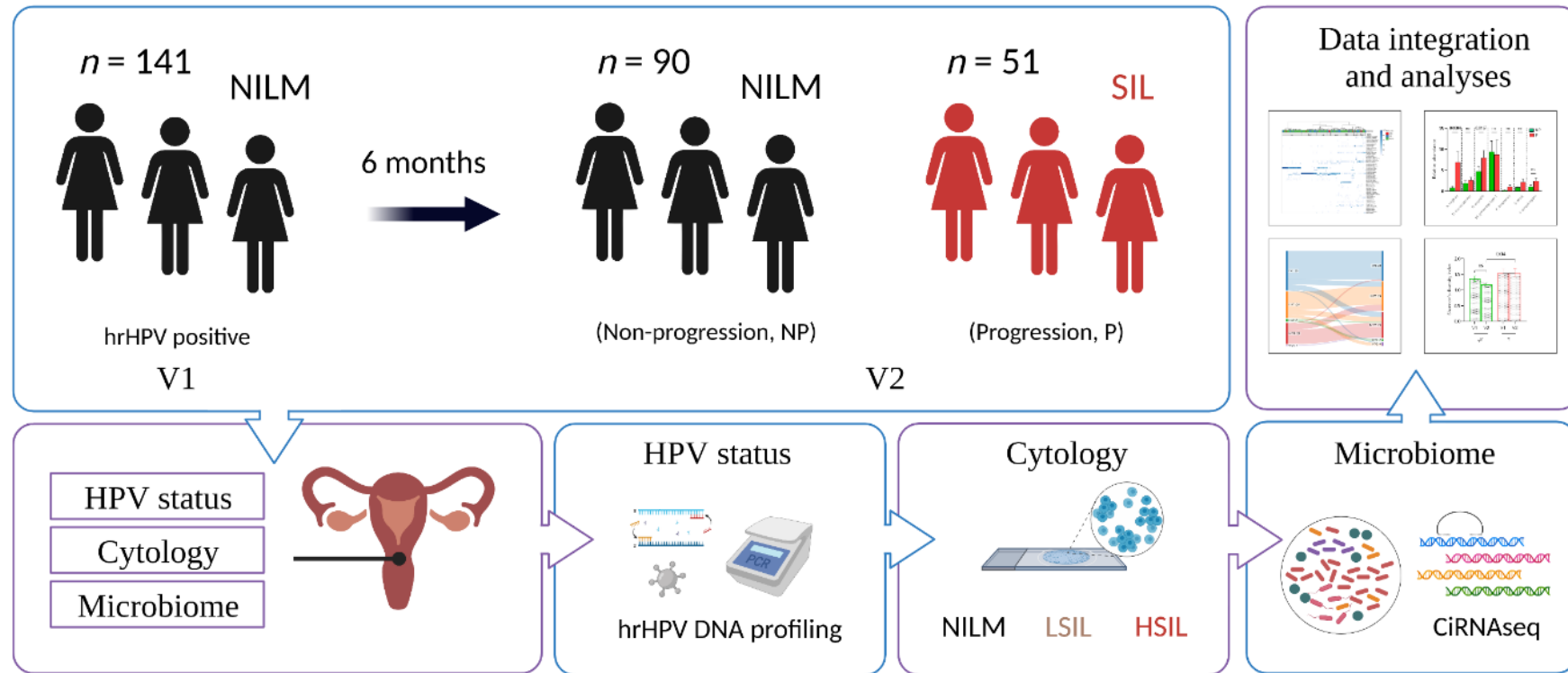


- Lack of biomarkers for hrHPV infection progression
- Association of microbial communities and species
- Prediction of infection progression

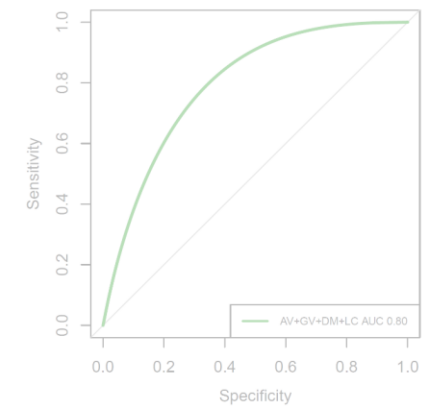
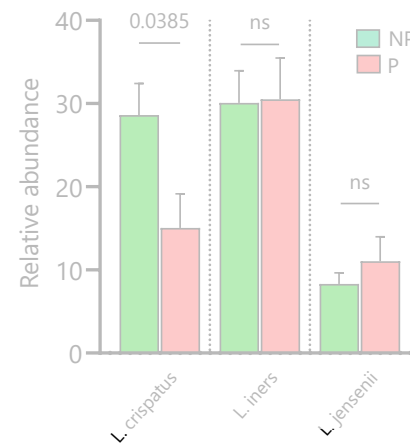
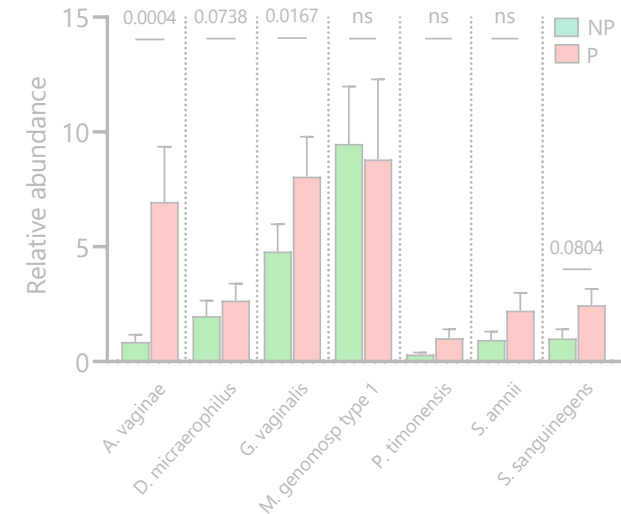
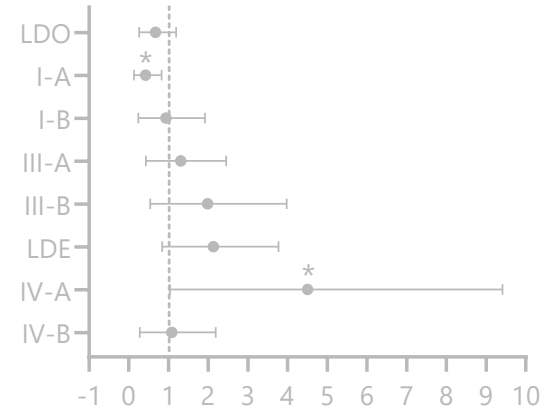
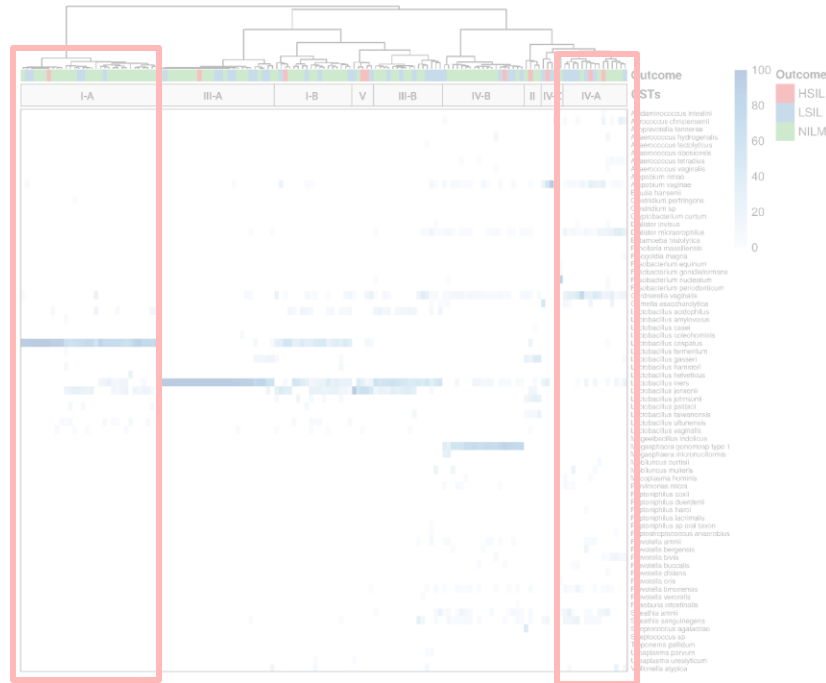
Does the microbiome composition correlate with hrHPV infection outcomes in a six-month period in a screening population?



Study design

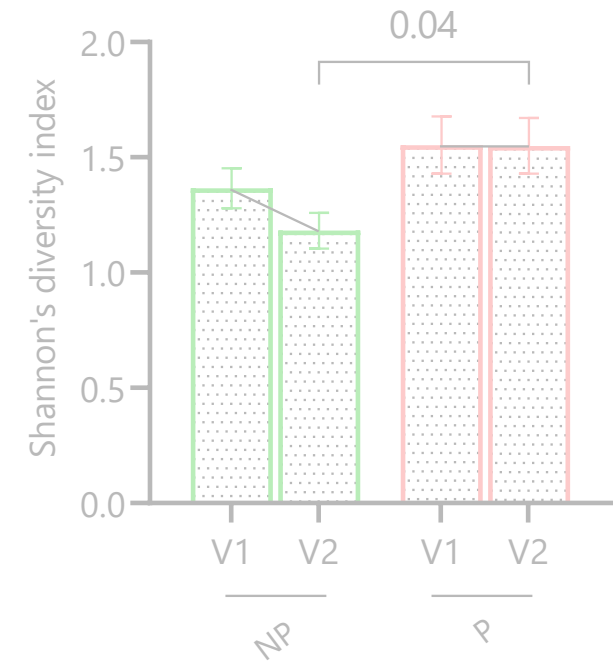
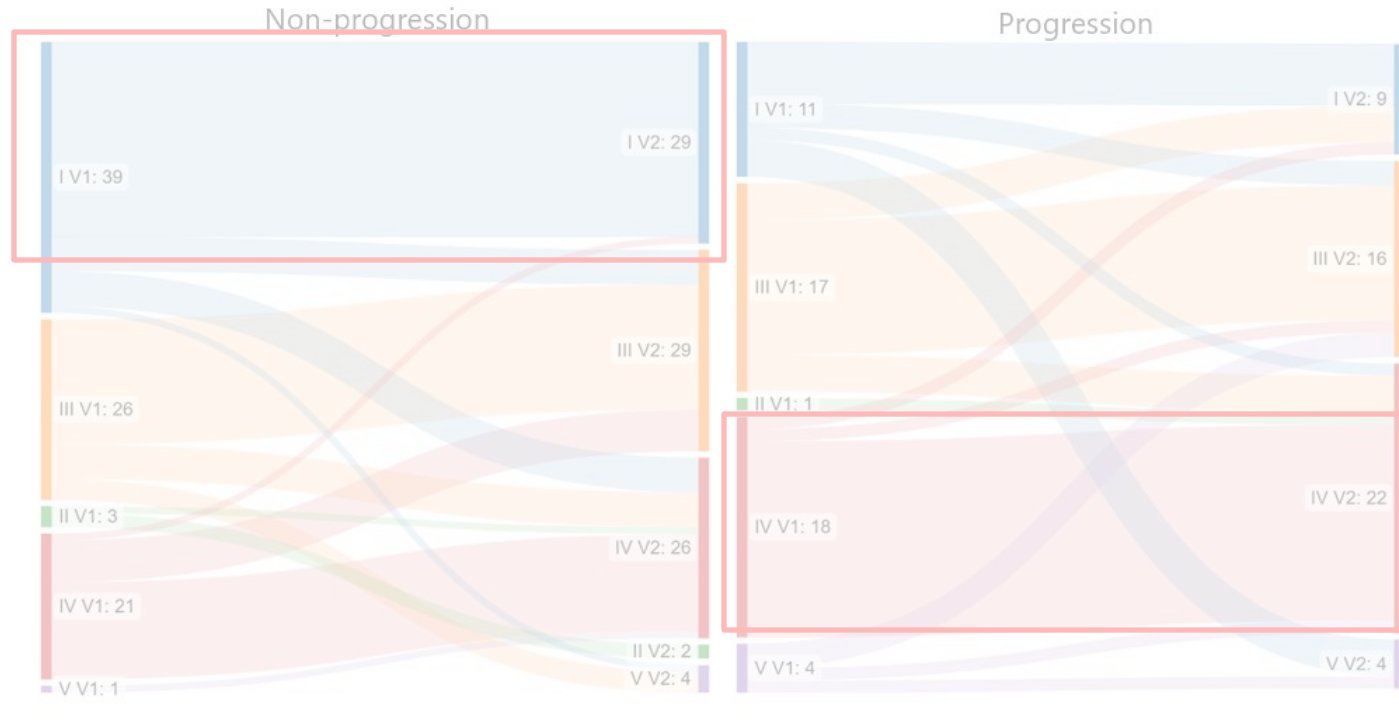


Early microbiome composition



Microbial composition at V1 associates with hrHPV infection outcomes six months later

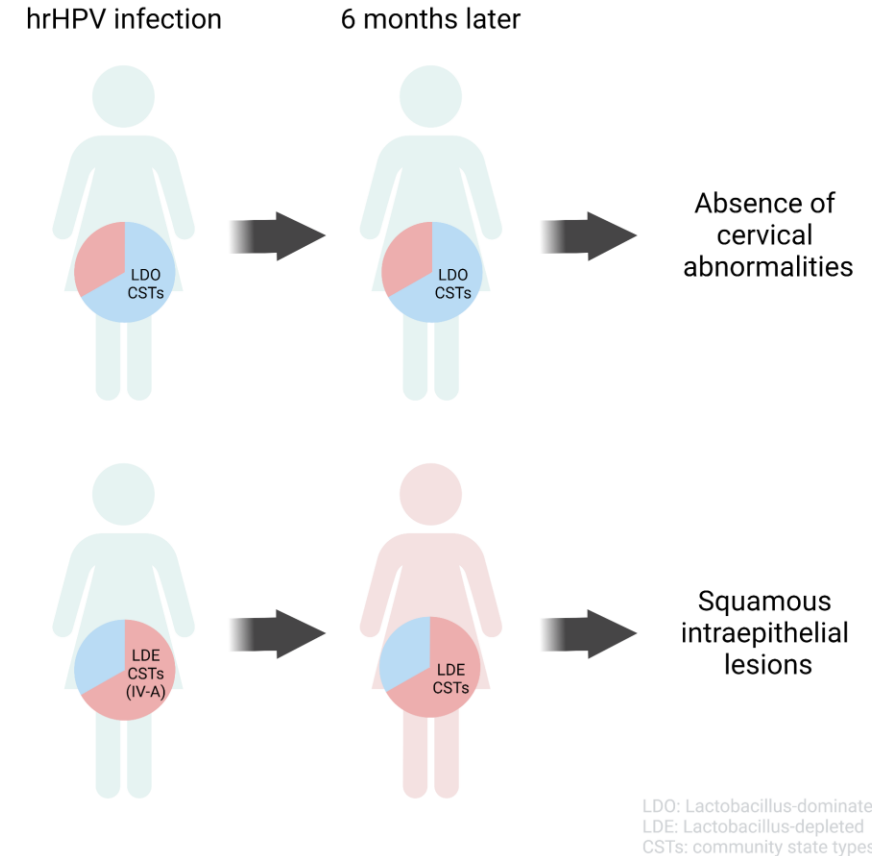
Microbiome dynamics



The stability of microbial communities between both visits associates with HPV infection outcomes

Take-home messages

- *Lactobacillus* dominance and high *L. crispatus* abundance associate with a stable microbiome composition and non-progression of HPV infections
- Increased abundance for *G. vaginalis*, *A. vaginae*, and *D. micraerophilus*, and high microbial diversity associate with a progressive HPV infection
- These findings highlight the potential value of integrating microbial biomarkers into viral surveillance frameworks



Acknowledgements



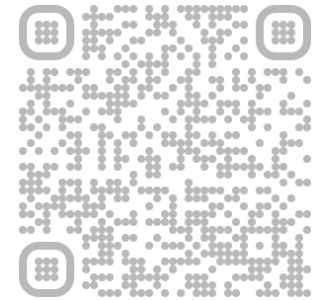
- Department of Medical Microbiology
- Center for Molecular and Biomolecular Informatics
- Predica Diagnostics BV
- Willem Melchers, PhD
- Karolina Andralojc, PhD
- William Leenders, PhD
- Martijn Huijnen, PhD



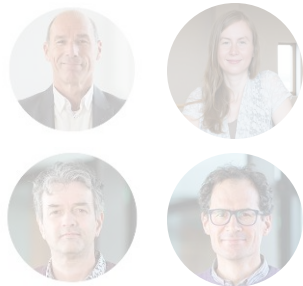
ciRNAseq (2021)



CSTs-hrHPV (2022)



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