

Exploring the interplay of the seminovaginal microbiome

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INTRODUCTION & AIM

The microbial communities inhabiting the reproductive tract play an important role in reproductive health. During unprotected sexual intercourse, the microorganisms present in the semen and vagina of heterosexual couples interact closely with each other. The concept of "seminovaginal microbiome" has recently emerged to refer to all microorganisms present in both environments. Each partner influences the microbial composition of the other, even sharing several bacterial taxa.

Therefore, to improve the understanding of this interaction, we aimed to analyse the microbial composition of semen and vagina samples from heterosexual couples and to assess their similarity in terms of composition and diversity.

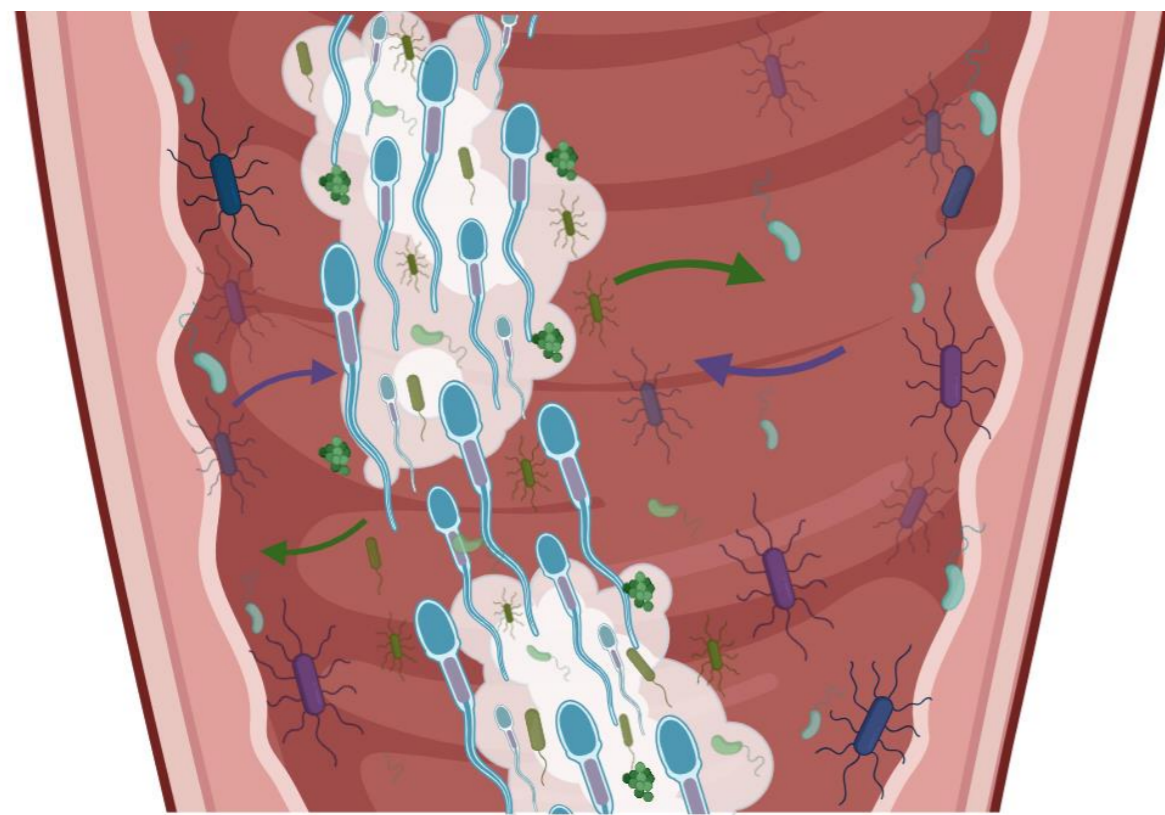
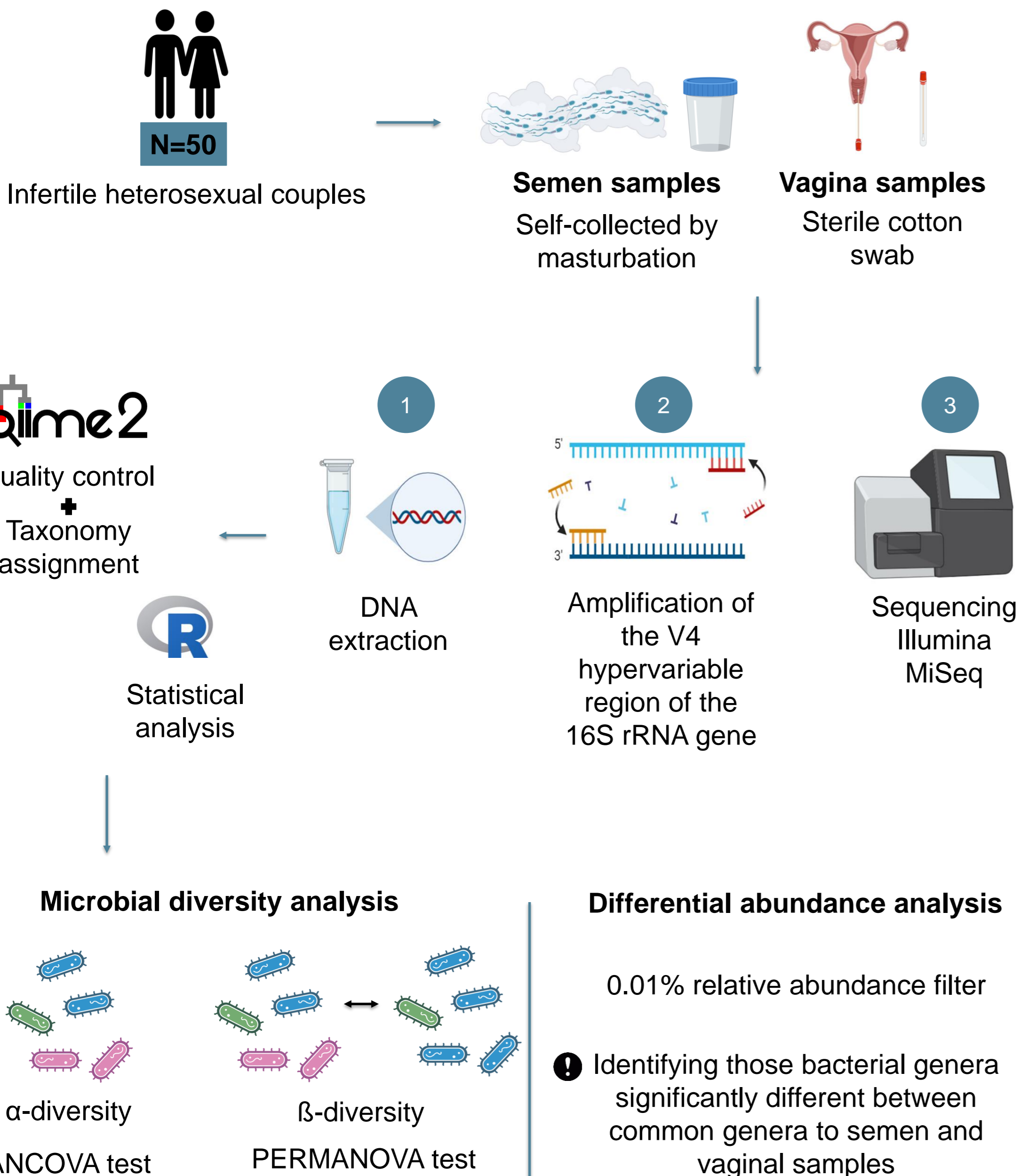


Figure 1. Interaction of the seminal and vaginal microbiome.

METHOD



RESULTS & DISCUSSION

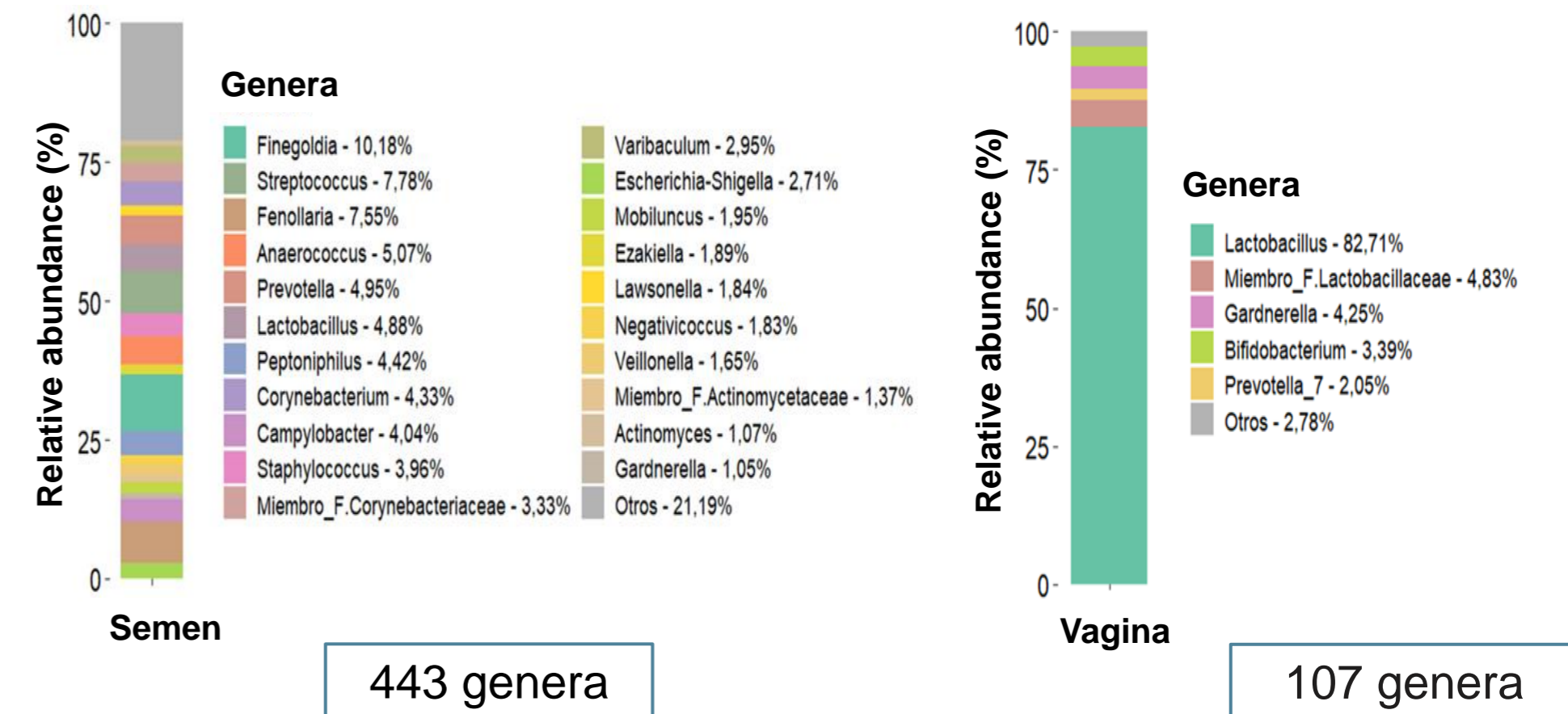


Figure 2. Graphic representation of the bacterial genera with the highest mean relative abundance in the semen and vagina samples.

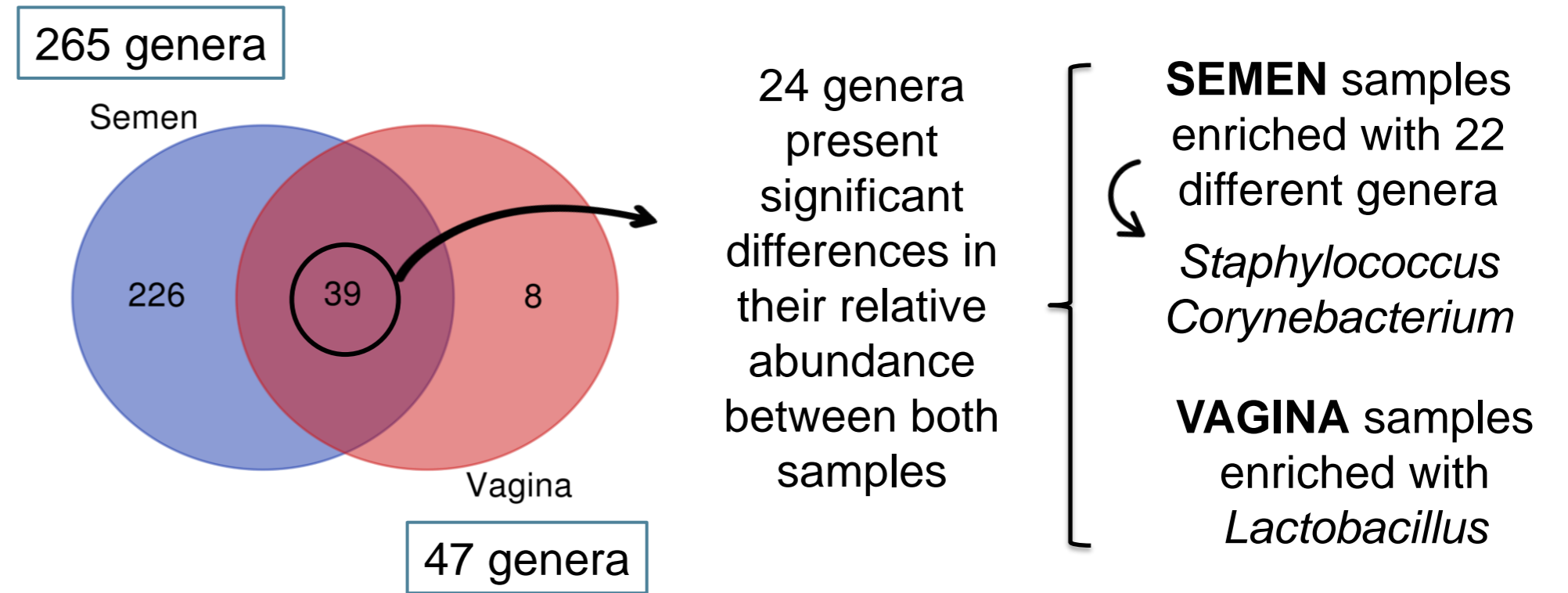


Figure 3. Venn diagram illustrating the number of genera specific to each sample type as well as those shared, after applying the 0.01% relative abundance filter.

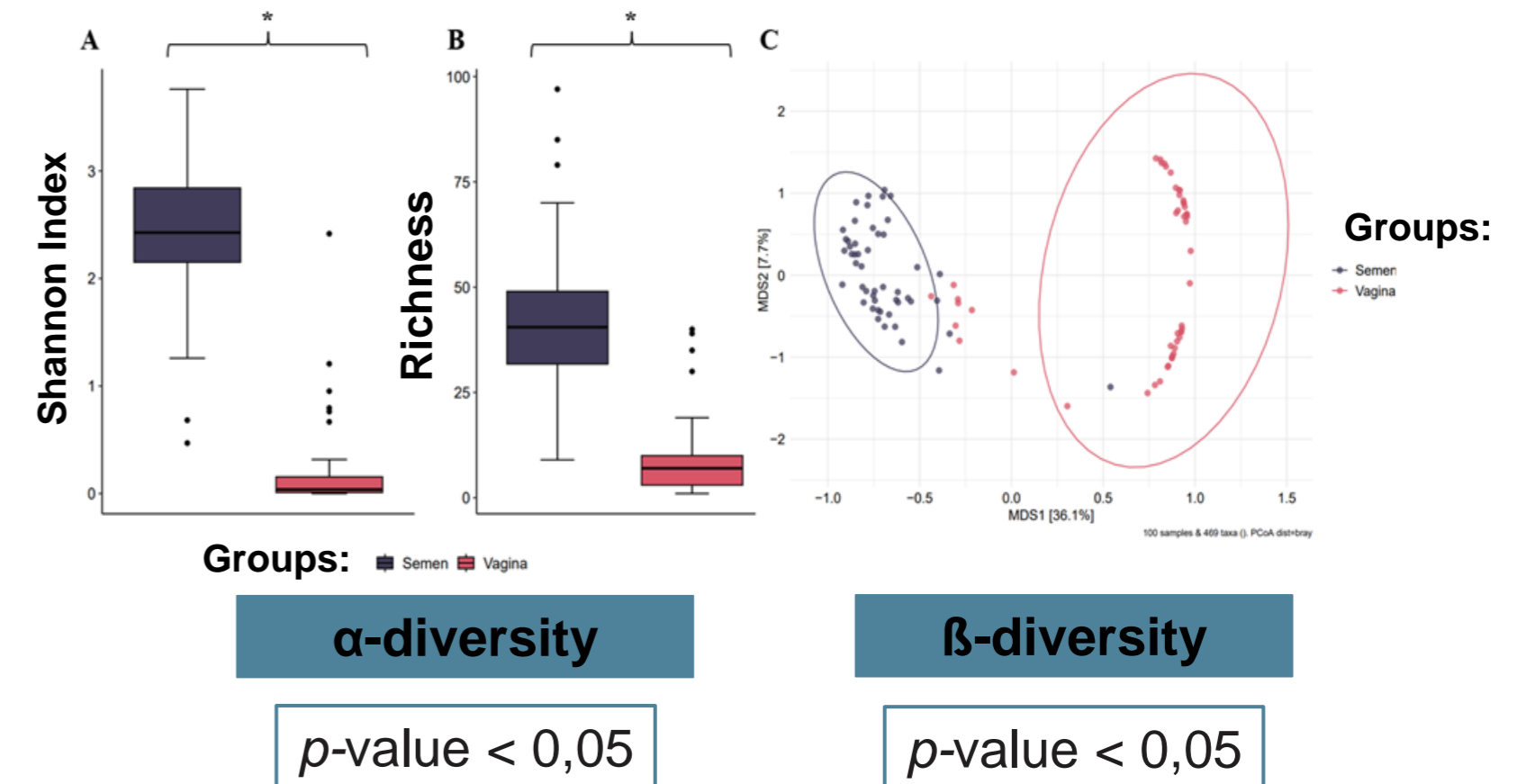
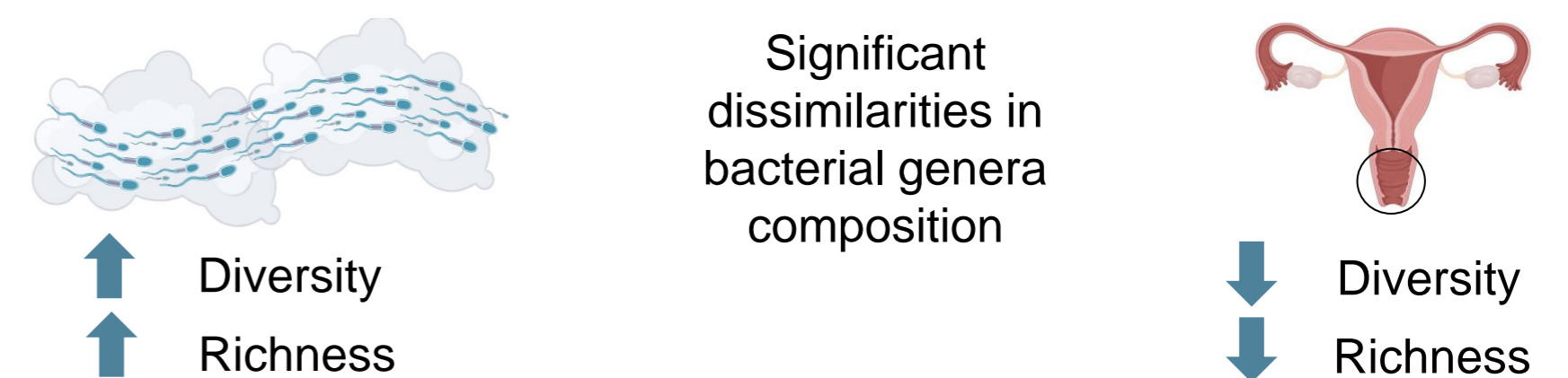


Figure 4. Comparative graphs of α-diversity and β-diversity of the semen and vagina samples of the couples. A: Shannon-Weaver index. B: Richness. C: PCoA. *** indicates that p -value < 0.05.



CONCLUSION

- There are significant differences in terms of diversity, richness and similarity of bacterial genera between semen and vaginal samples from couples who have unprotected sex.
- There are different bacterial genera shared between both microbiomes.
- Studying the couple's microbiome together provides a deeper understanding of their interaction.

FUTURE WORK / REFERENCES

Mändar, R., Punab, M., Borovkova, N., Lapp, E., Kiiker, R., Korrovits, P., Metspalu, A., Krjutškov, K., Nivak, H., Preem, J. K., Oopkaup, K., Salumets, A., & Truu, J. (2015). Complementary seminovaginal microbiome in couples. *Research in Microbiology*, 166(5), 440–447. <https://doi.org/10.1016/j.resmic.2015.03.009>