

The Role Of Antimicrobial Peptides On Infant Gut Microbiota Assembly

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Introduction

Gut microbiota and mucosal immune system co-develop after birth, influencing susceptibility to immune-related diseases (1).

Little is known about the role of host-derived factors in early gut colonization.

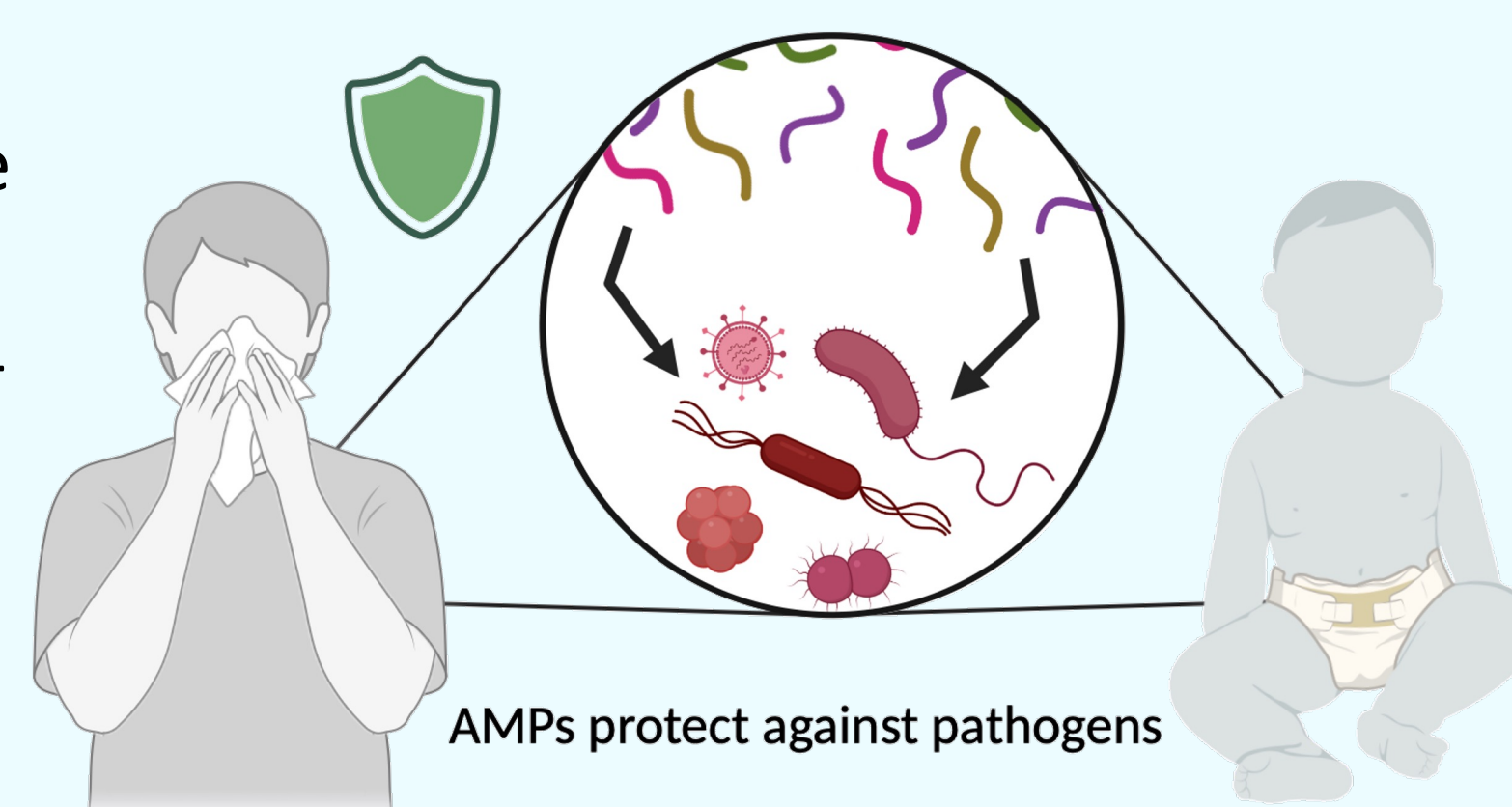


Figure 1: The protective function of AMPs visualized.*

This research aimed to investigate the postnatal dynamics of AMPs and their impact on neonatal microbiota composition.

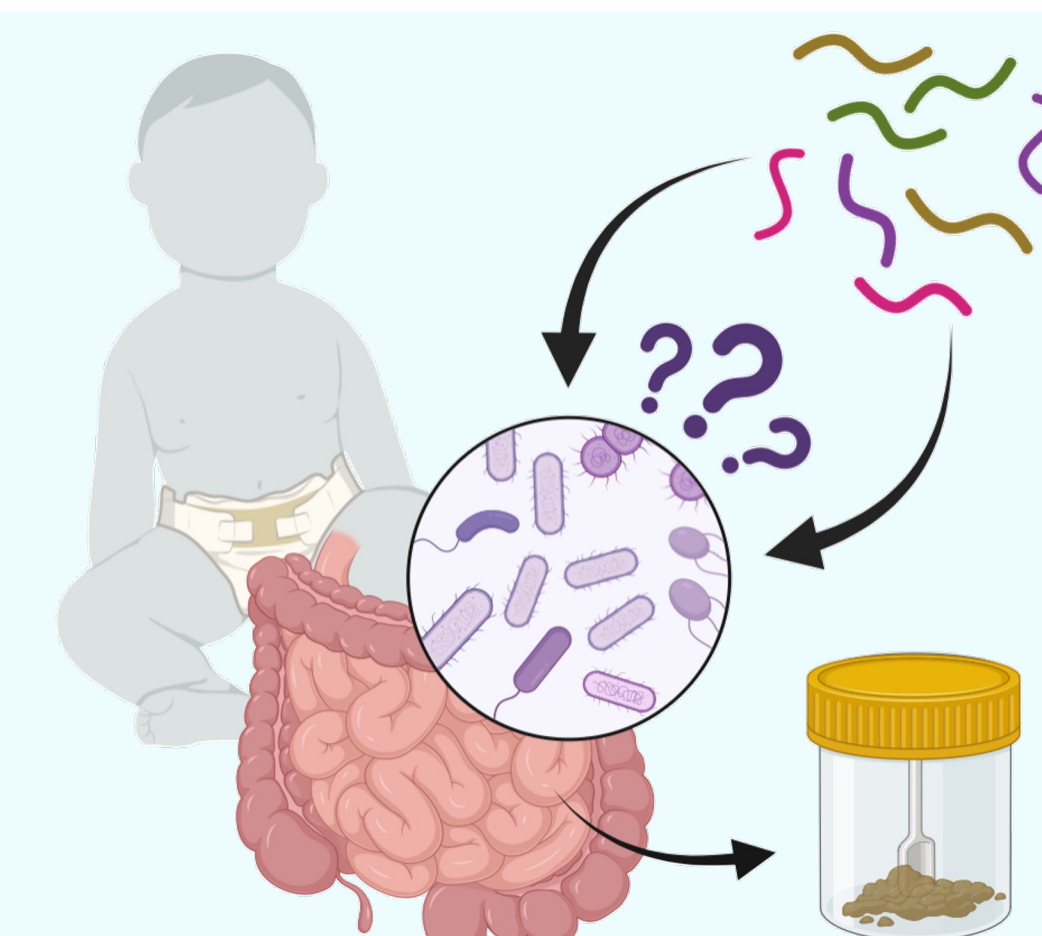


Figure 2: Graphical overview of the objective.*

Methodology

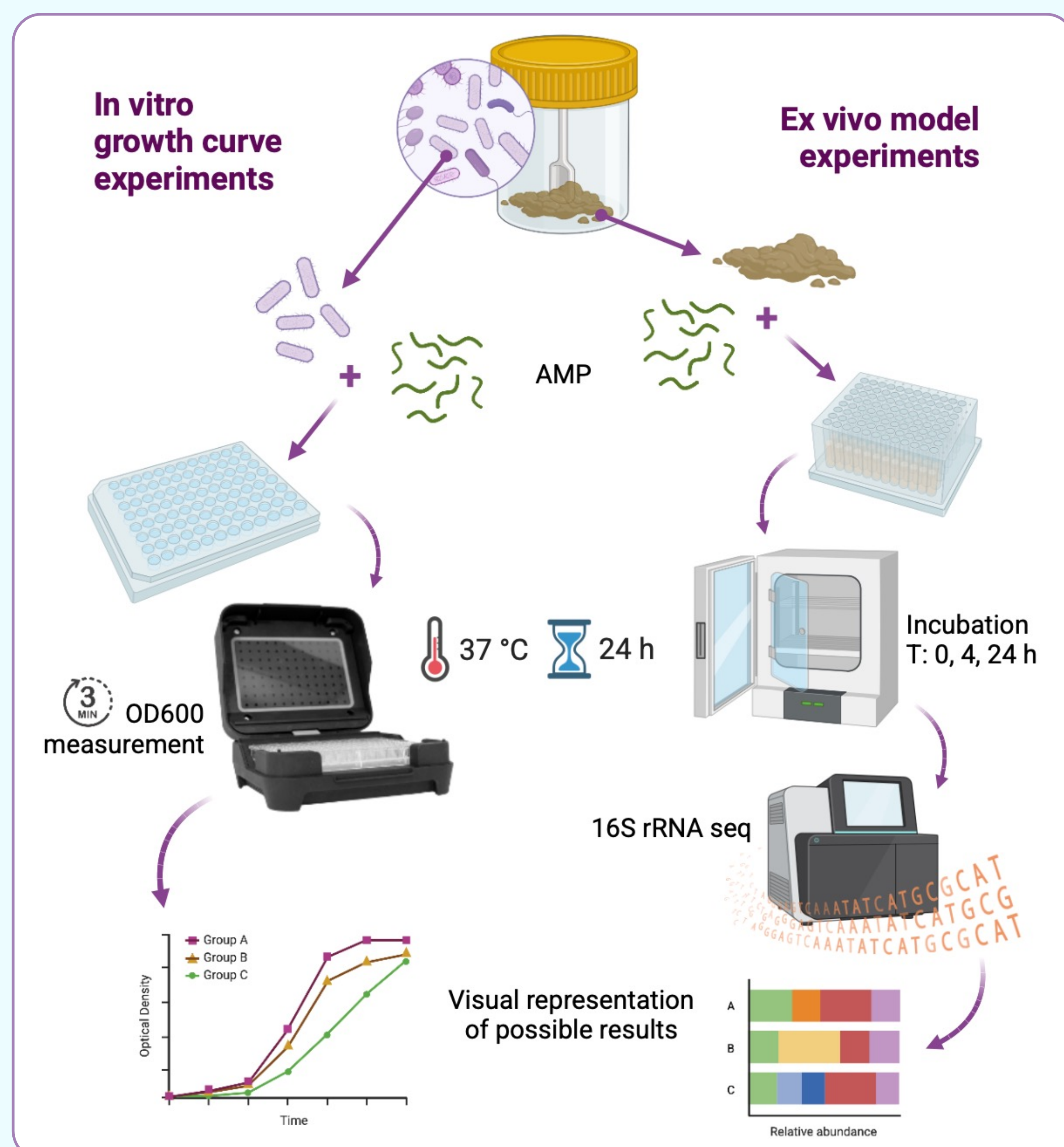


Figure 3: Graphical summary of the methods used in this study.*

Results

Enterococcus strains showed no (drastic) inhibition at 10 and 20 µg/mL, whereas most *Bifidobacterium* strains exhibited some degree of inhibition.

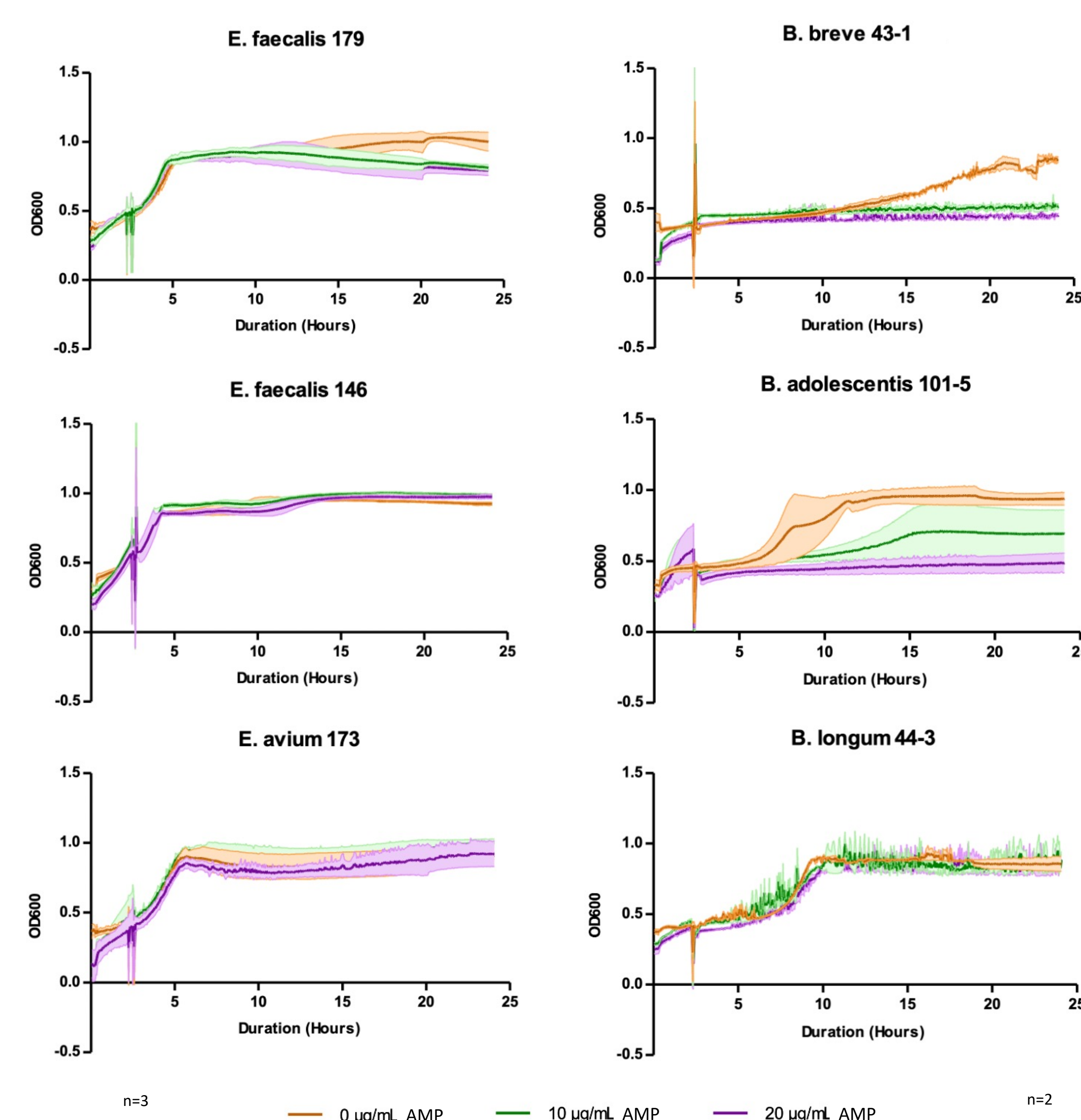


Figure 4: Growth curves for various tested strains. Data visualized using GraphPad.

References

- 1) Shi, N., Li, N., Duan, X. et al. Interaction between the gut microbiome and mucosal immune system. Military Med Res 4, 14 (2017). <https://doi.org/10.1186/s40779-017-0122-9>

Conclusion

- Overall, *Enterococcus* strains possess a **higher tolerance to AMPs** compared to *Bifidobacterium* strains.
- AMPs could play a role in shaping the microbial composition in the infant gut by selectively inhibiting specific bacterial groups.**

Future research will focus on the *ex vivo* feces model experiment to provide deeper insights into this concept and contribute to a more complete understanding of AMPs' impact on microbial composition.

* Figures created in BioRender

