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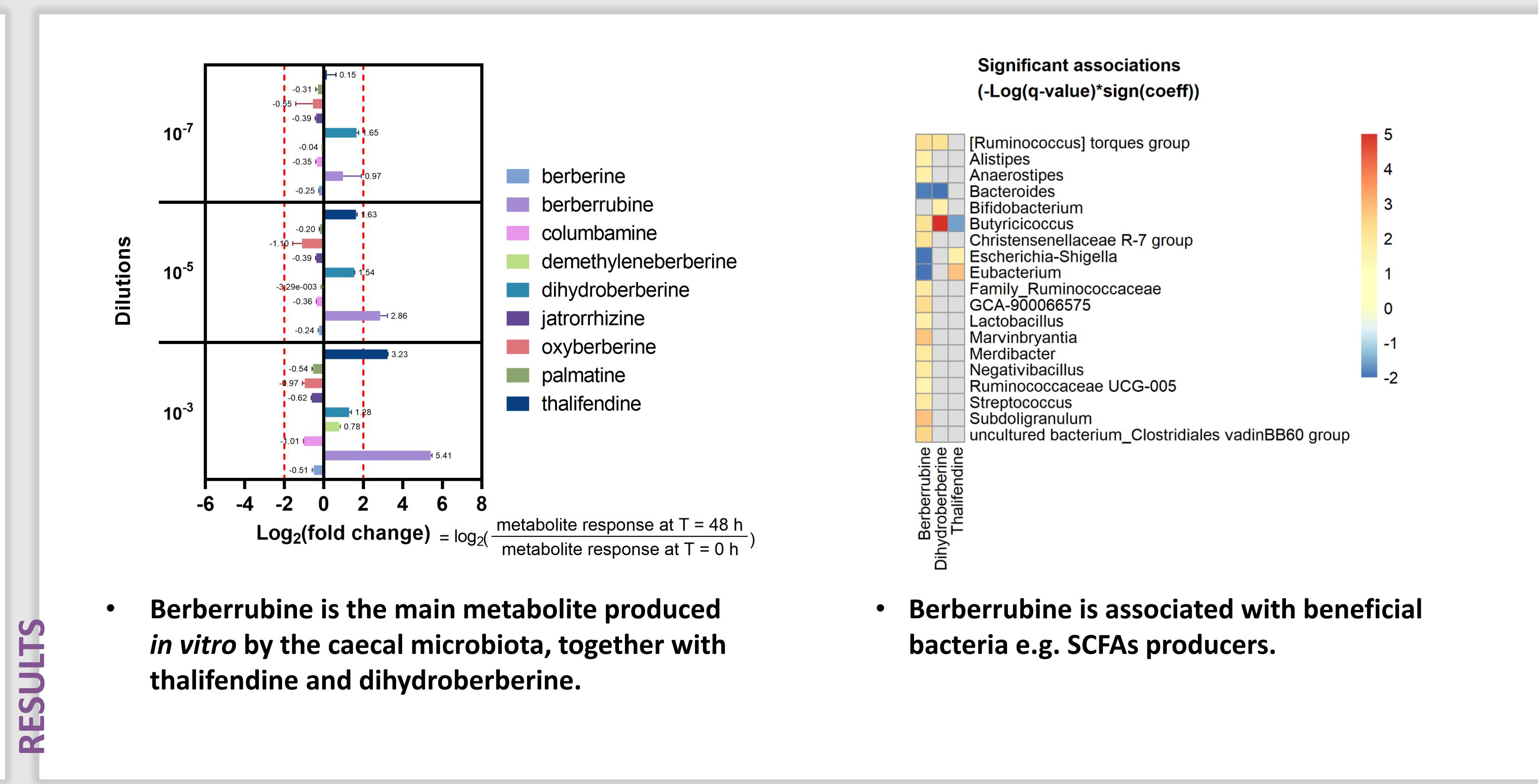
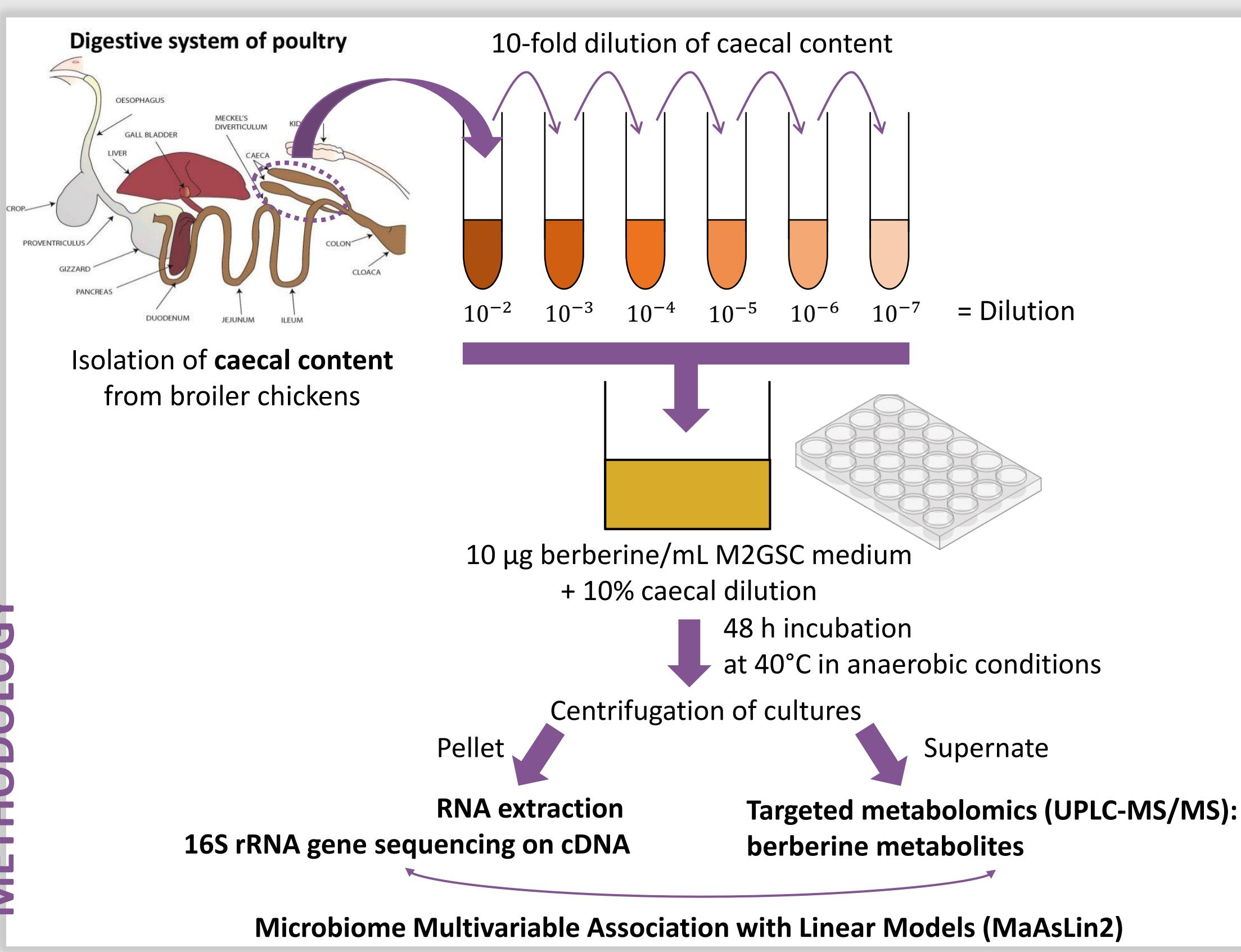
BERBERRUBINE, A BERBERINE-DERIVED METABOLITE, IS PRODUCED BY THE GUT MICROBIOTA AND IMPROVES GUT HEALTH

BACKGROUND

Reductions in antimicrobial usage in broiler diets resulted in a search for alternative ways to establish beneficial microbiota in chickens to ensure optimal gut health and performance. Amongst the most popular alternatives are phytogenic products. Berberine, an alkaloid isolated from medicinal plants like *Coptis chinensis*, is a potential candidate with anti-inflammatory effects, although the mechanism of action is still poorly understood. One of the possible mechanisms is related to its transformation in the gut into several berberine-derived bioactive metabolites. **The aim of this study was to investigate the extent to which the gut microbiota is involved in the metabolism of berberine and whether the berberine-derived metabolites can influence gut health.**

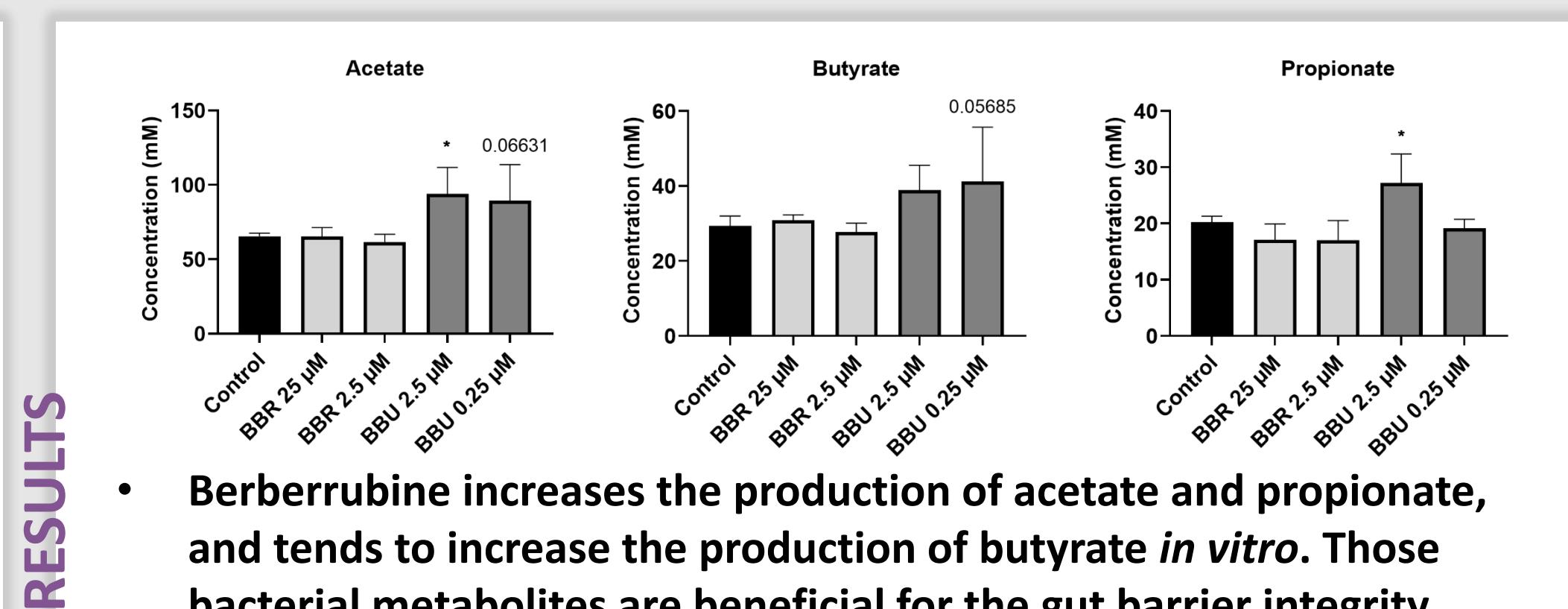
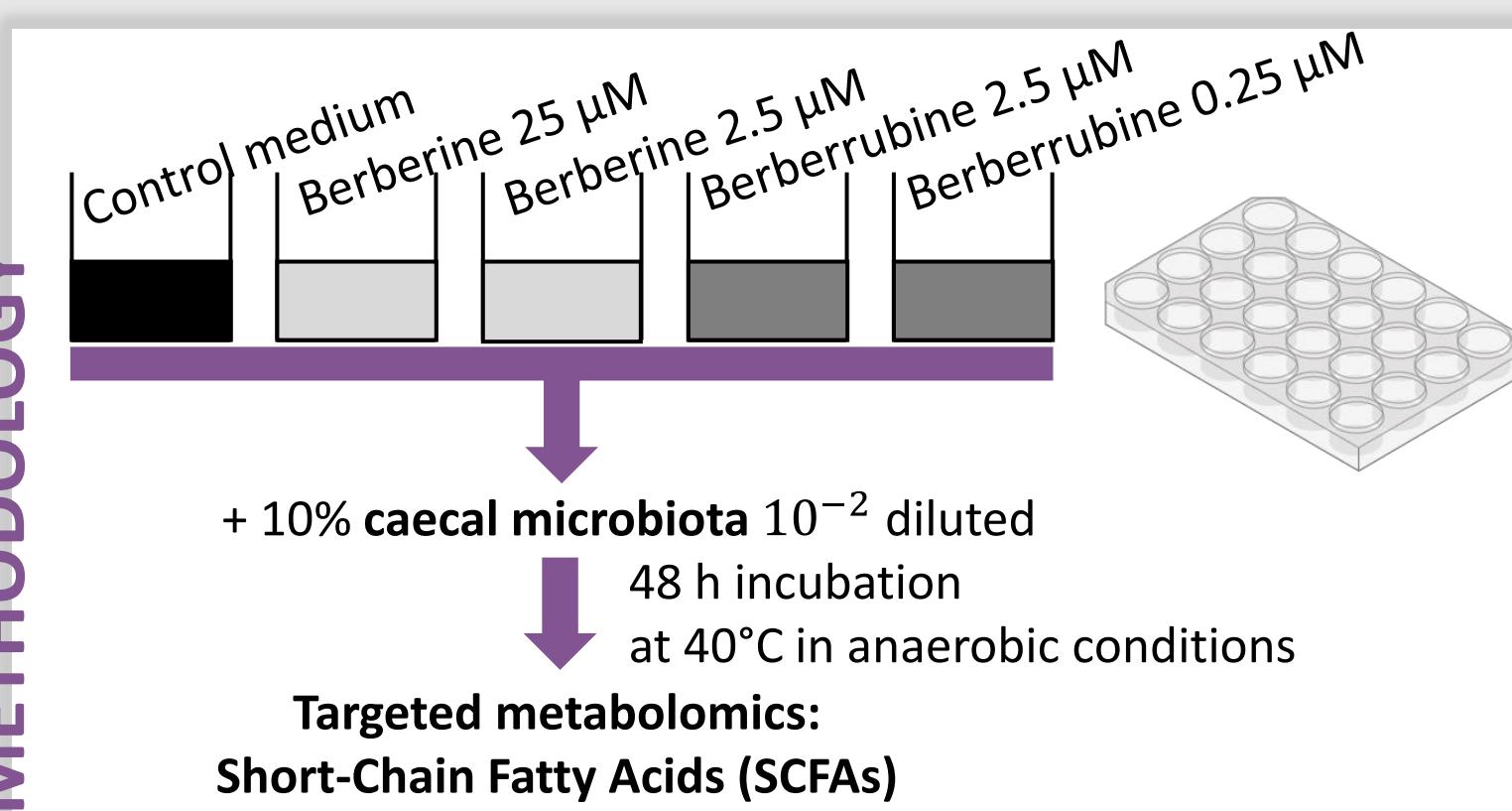
RESEARCH QUESTION 1

WHICH METABOLITES ARE PRODUCED BY THE GUT MICROBIOTA IN VITRO AND WHICH BACTERIA ARE ASSOCIATED WITH METABOLITE PRODUCTION?



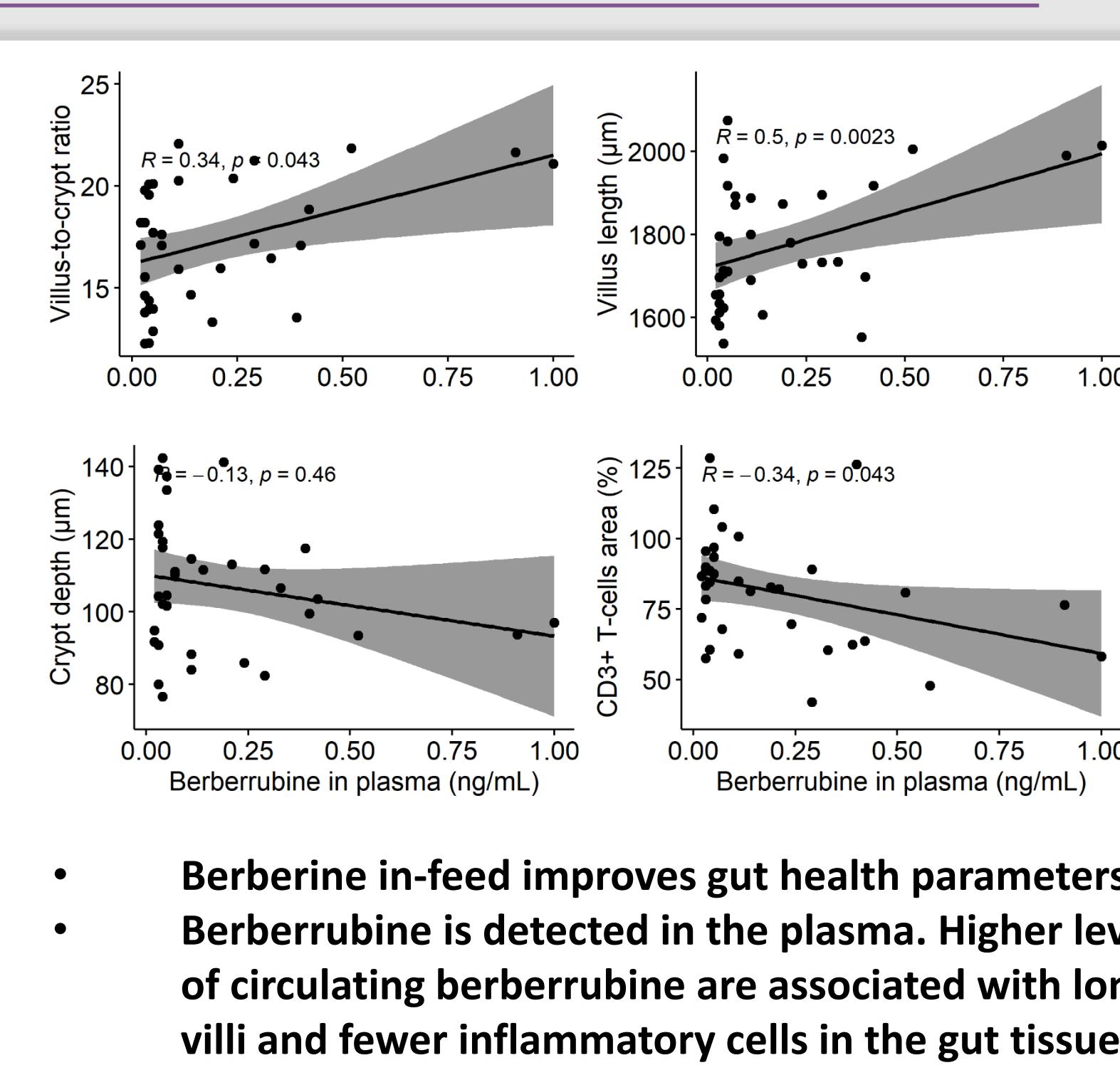
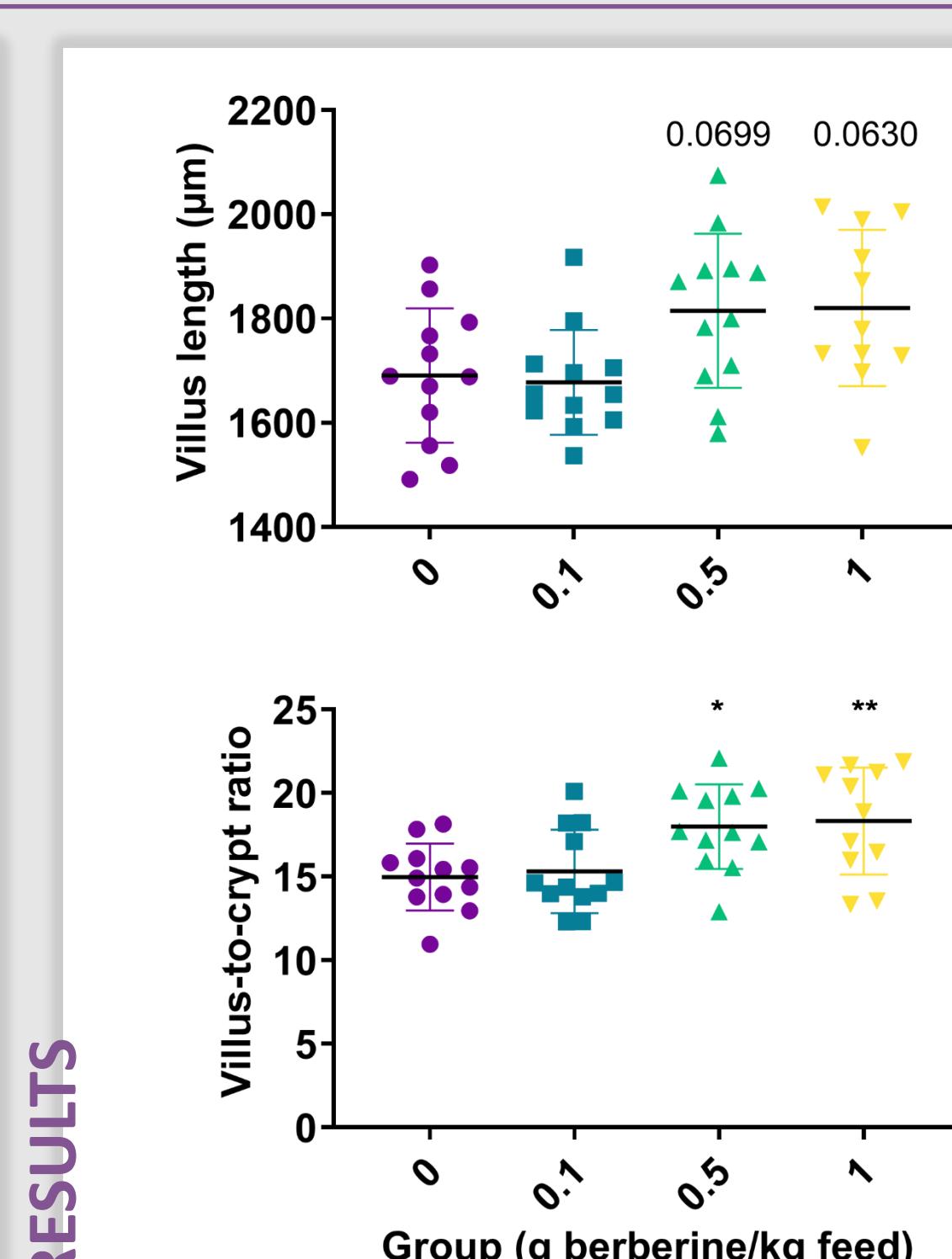
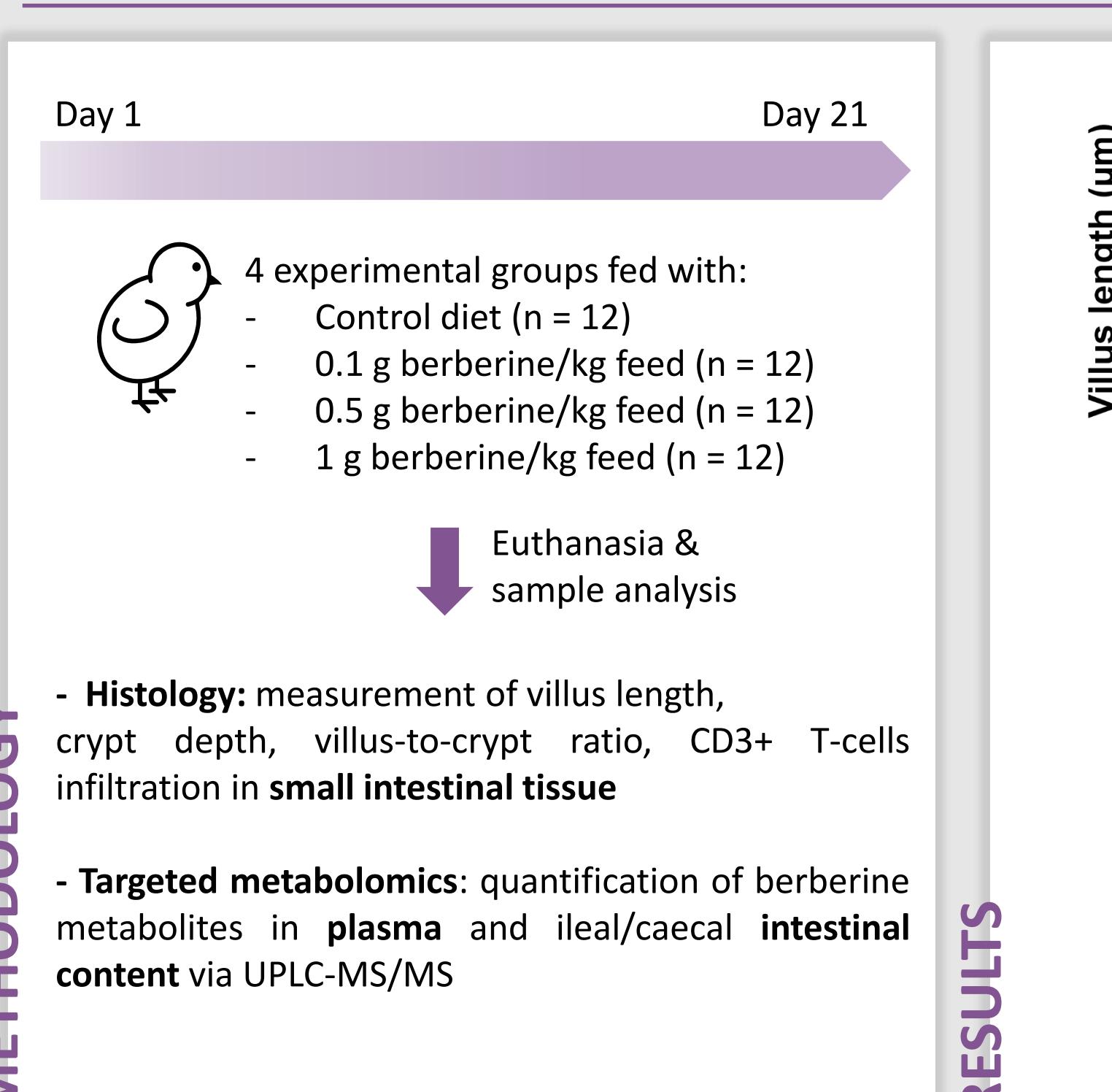
RESEARCH QUESTION 2

CAN BERBERRUBINE STIMULATE SCFAS PRODUCTION IN VITRO?



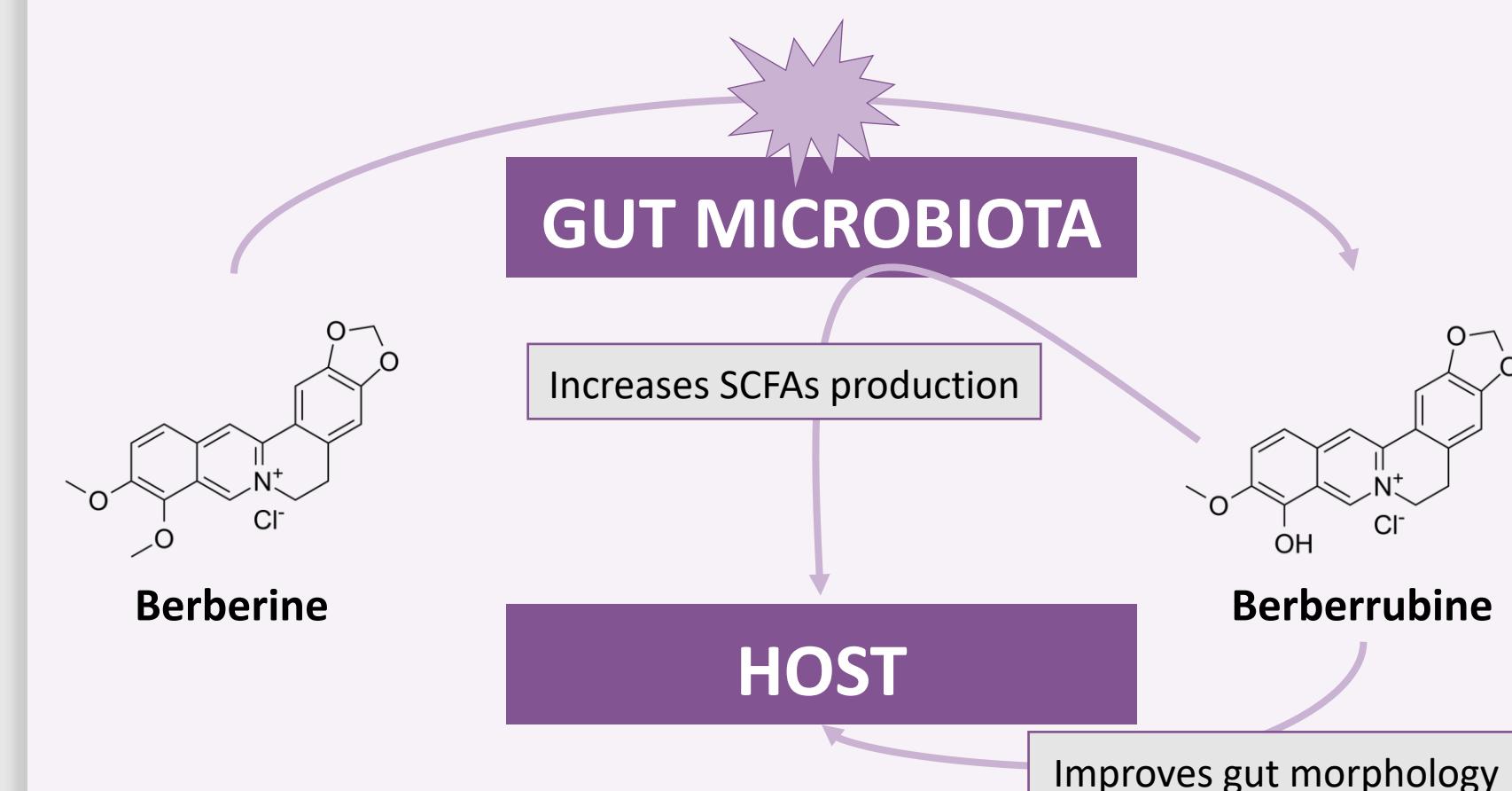
RESEARCH QUESTION 3

IS BERBERRUBINE PRODUCED *IN VIVO* AND DOES IT CONTRIBUTE TO BERBERINE PHARMACOLOGICAL ACTION?



CONCLUSION

- Berberrubine, a host-microbiota crosstalk



- Berberrubine is detected in higher concentrations in the caecum than in the ileum.
- Berberrubine in the plasma comes partly from the biotransformation of berberine by caecal bacteria and further absorption through the gut tissue.