Gut *Bifidobacterium pseudocatenulatum* protects against fat deposition by enhancing secondary bile acid biosynthesis

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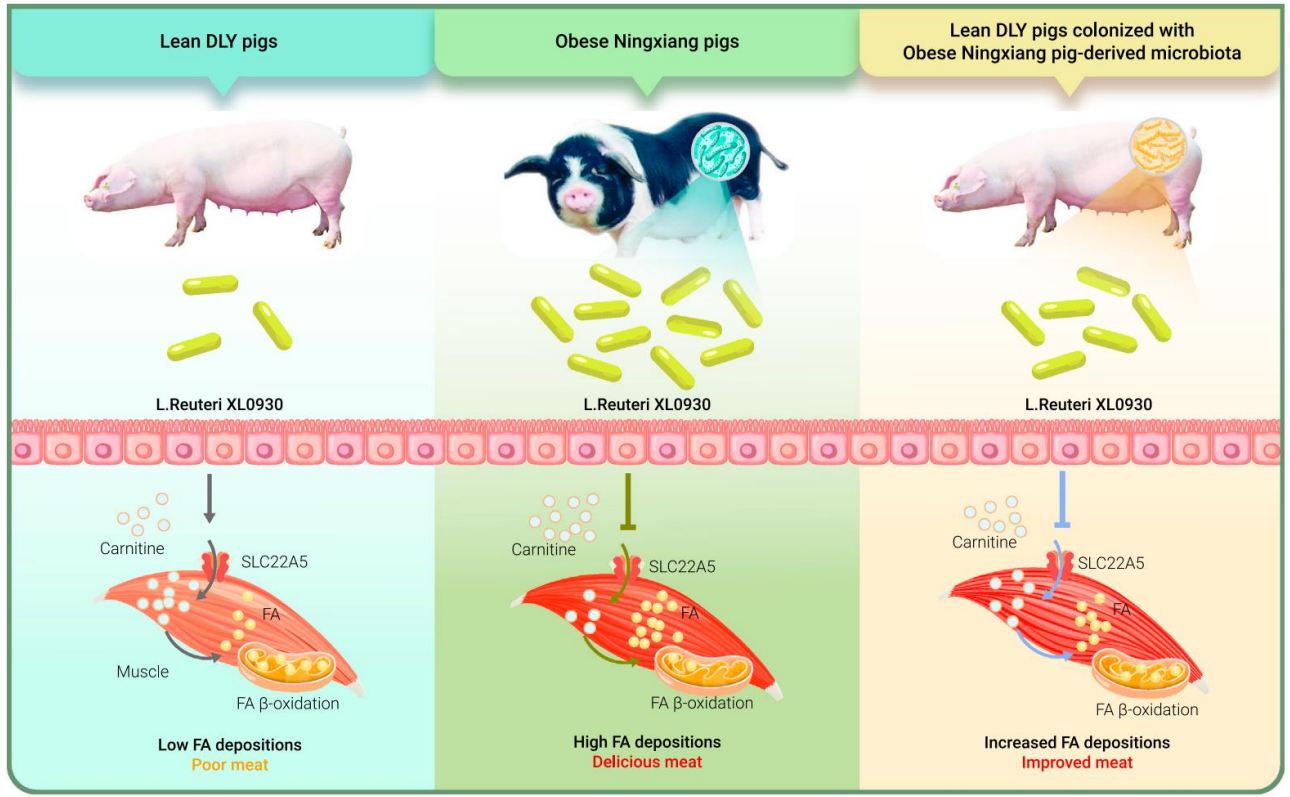
Andong Zha, Ming Qi, Yuankun Deng, Hao Li, Nan Wang, Chengming Wang, Simeng Liao, et al. 2024. Gut *Bifidobacterium pseudocatenulatum* protects against fat deposition by enhancing secondary bile acid biosynthesis. *iMeta* 3: e261. https://doi.org/10.1002/imt2.261

Background

The gut microbiota is closely related to host fat deposition.

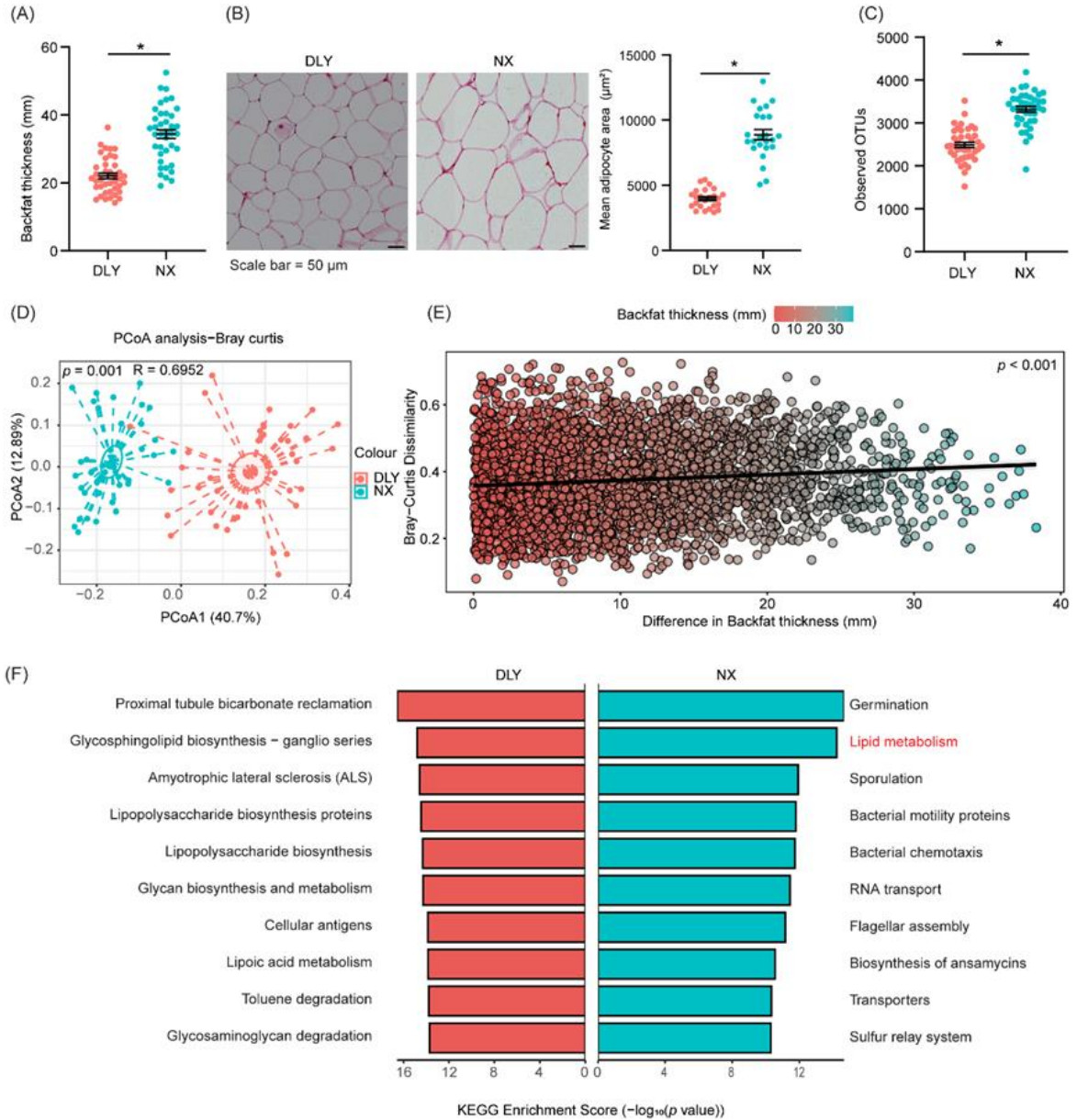
- There are significant differences in the composition of the gut microbiota and fat accumulation among different pig breeds.
- Microbiota transplantation alters the energy homeostasis and fat deposition



Innovation, 2023

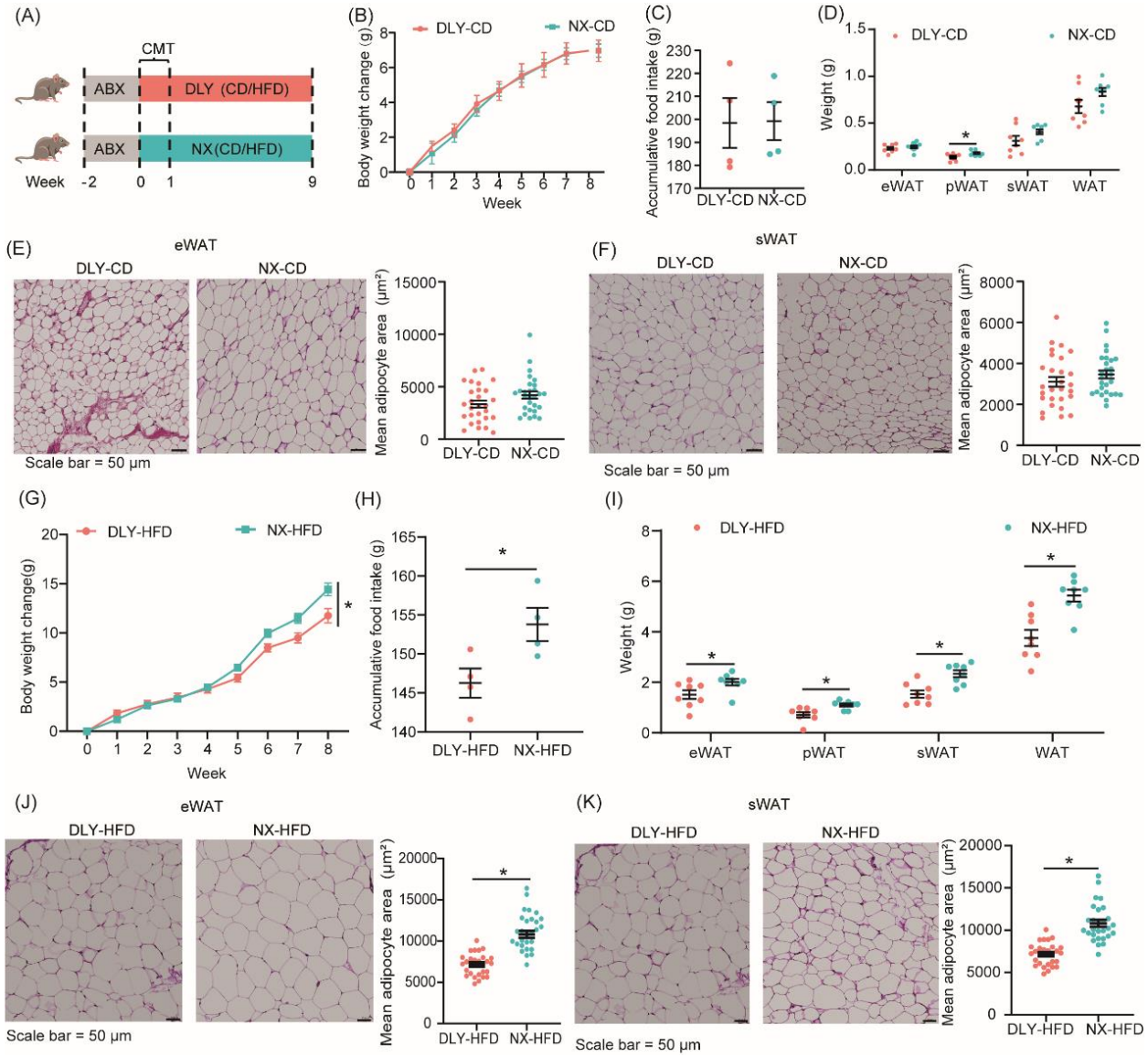
Results

Distinct microbial profile associated with backfat deposition in lean and obese pigs

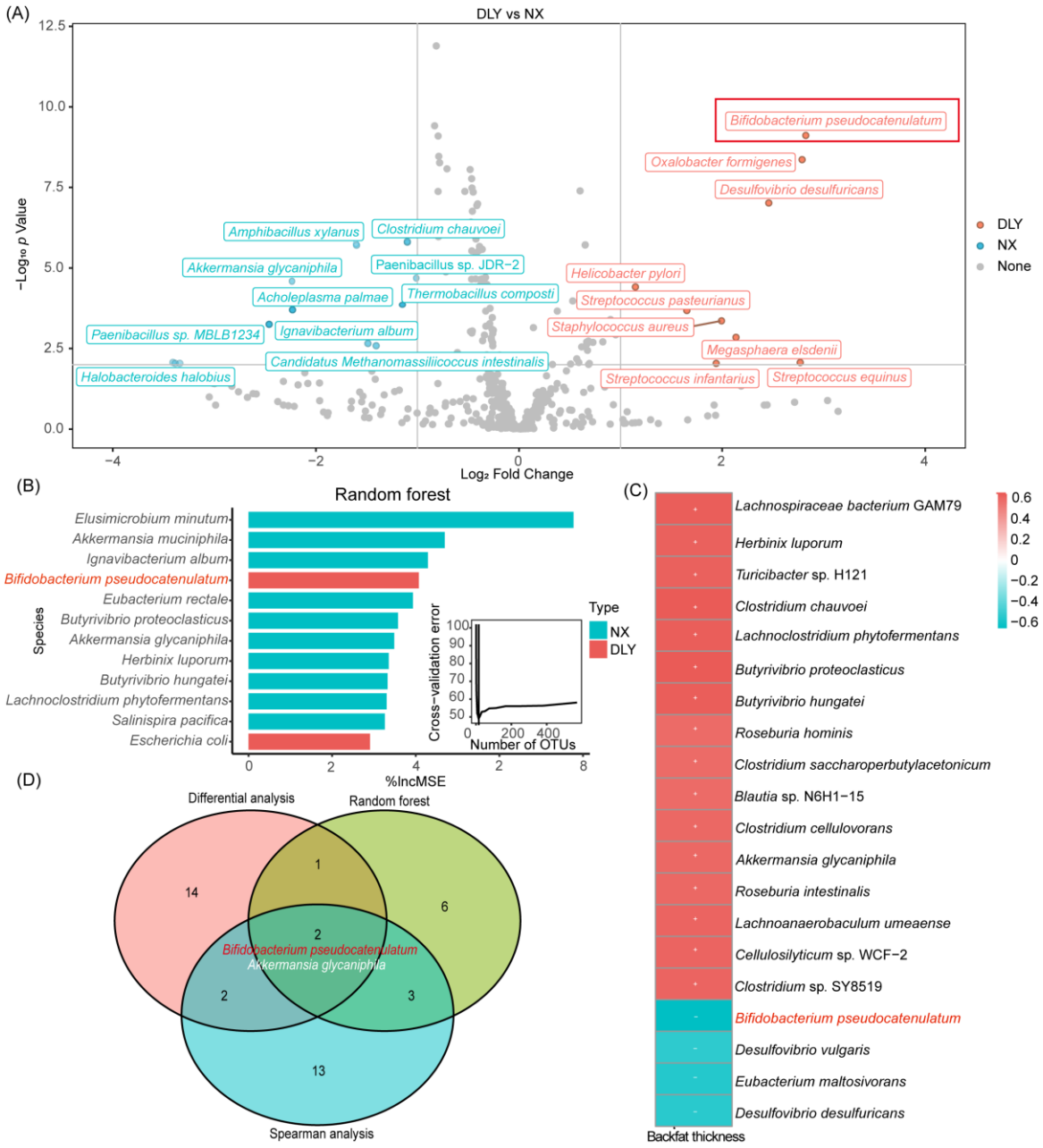


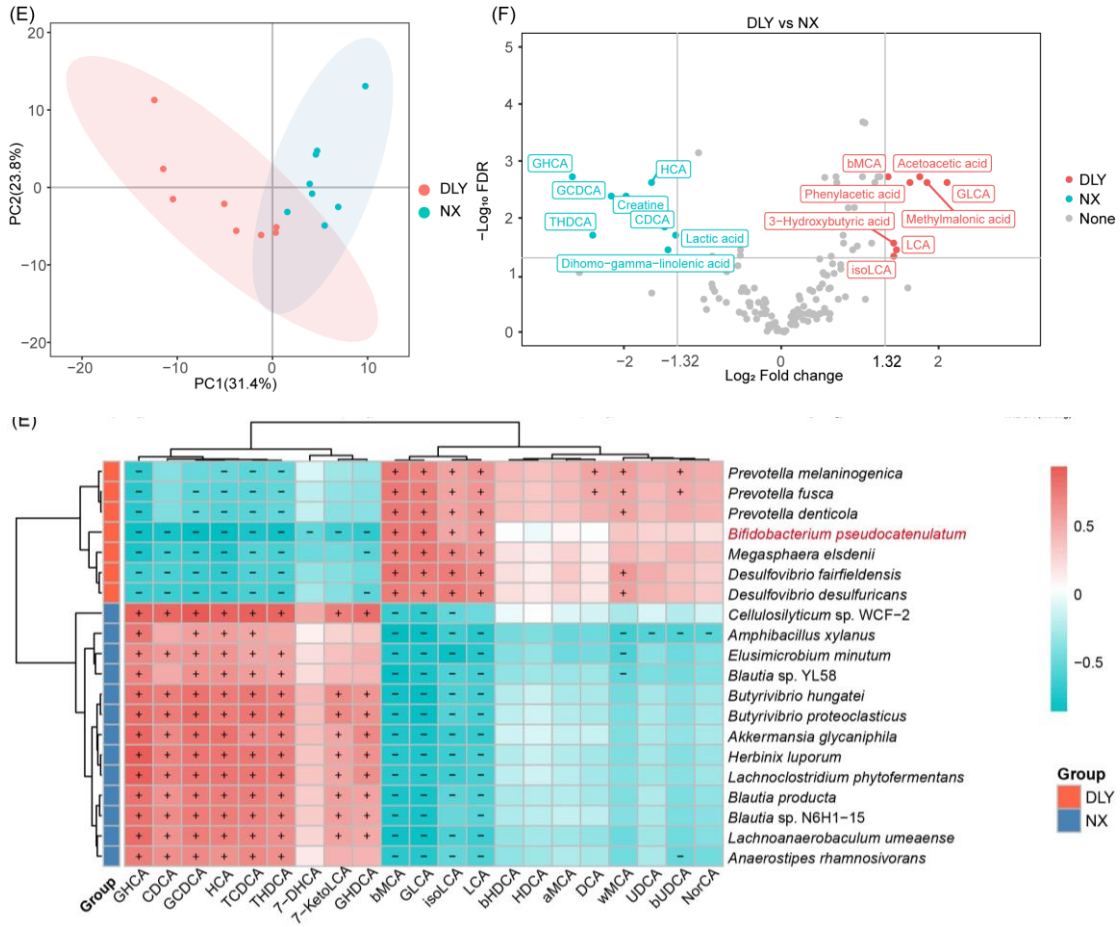
Results

The gut microbiome of lean and obese pigs contributes to the variations of lipid deposition



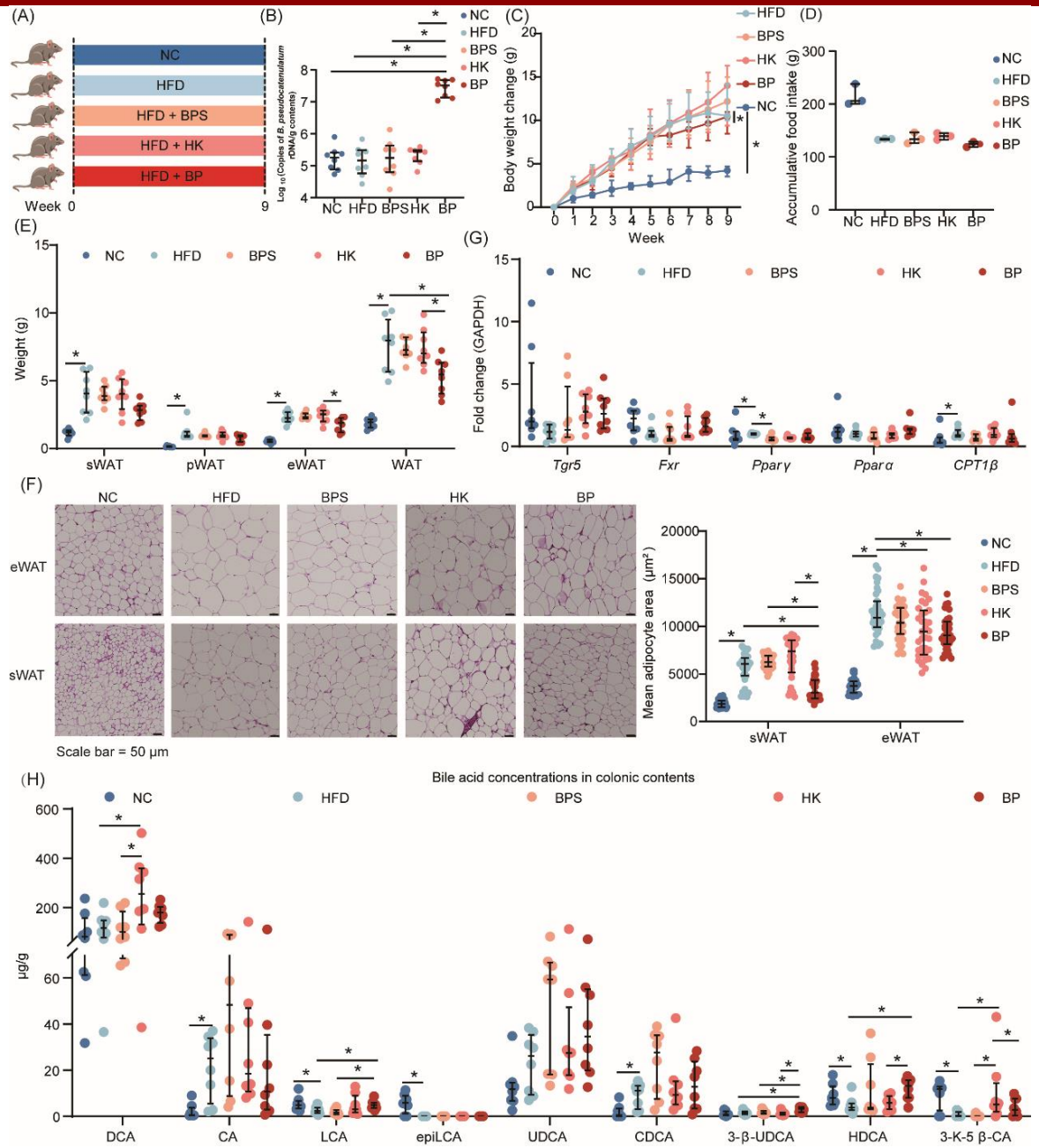
Results





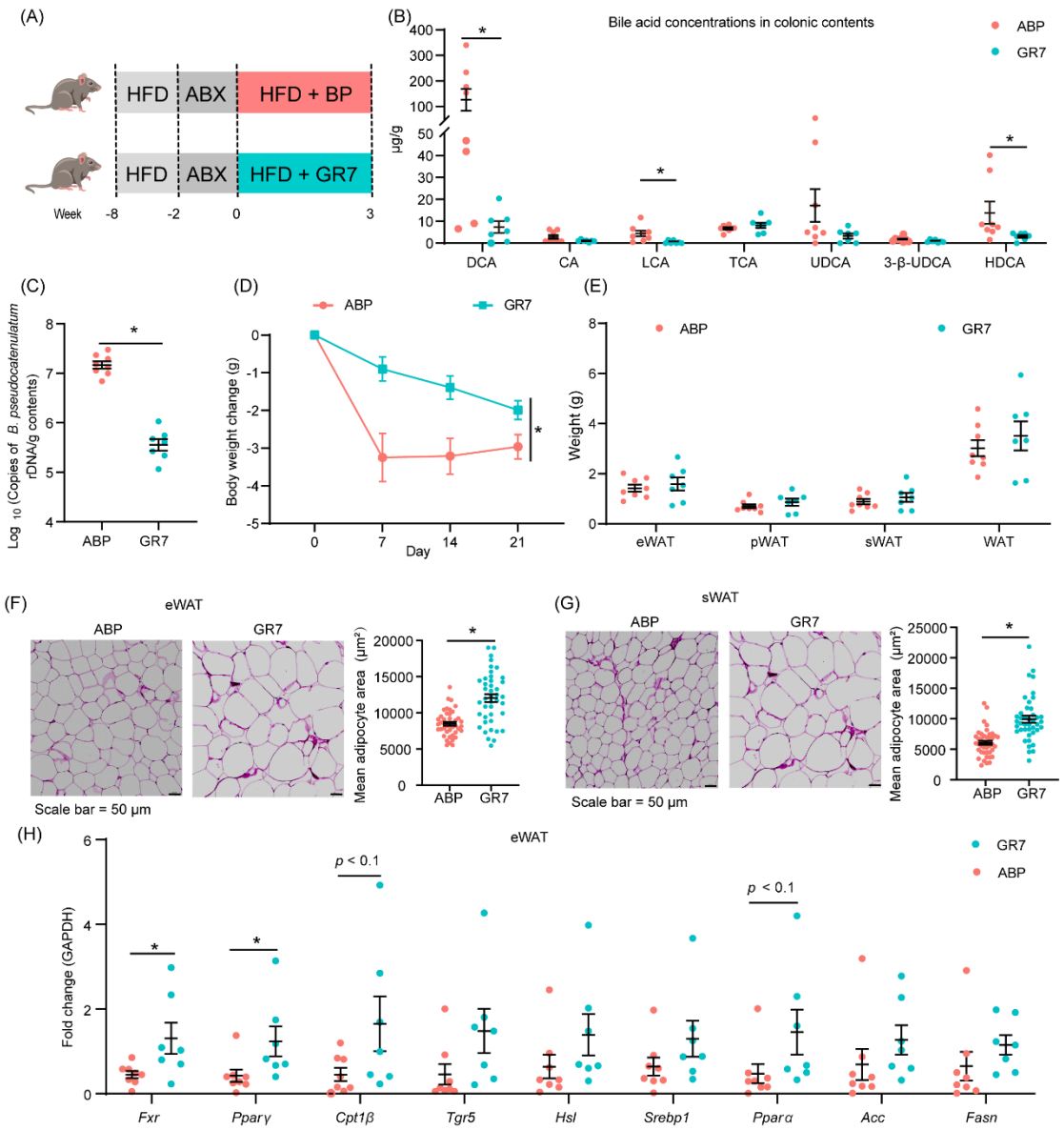
Multiomics revealed that *Bifidobacterium pseudocatenulatum* may reduce fat deposition by regulating secondary bile acid metabolism.

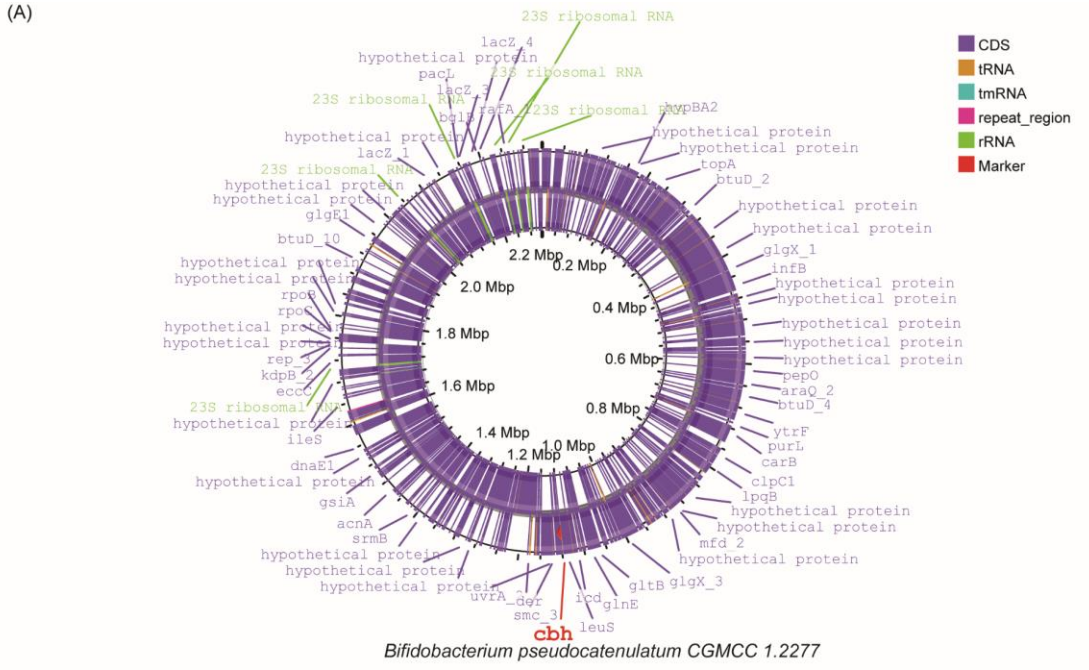
Results



Bifidobacterium pseudocatenulatum **attenuates excessive fat deposition and enhances secondary bile acid biosynthesis in HFD-fed mice**

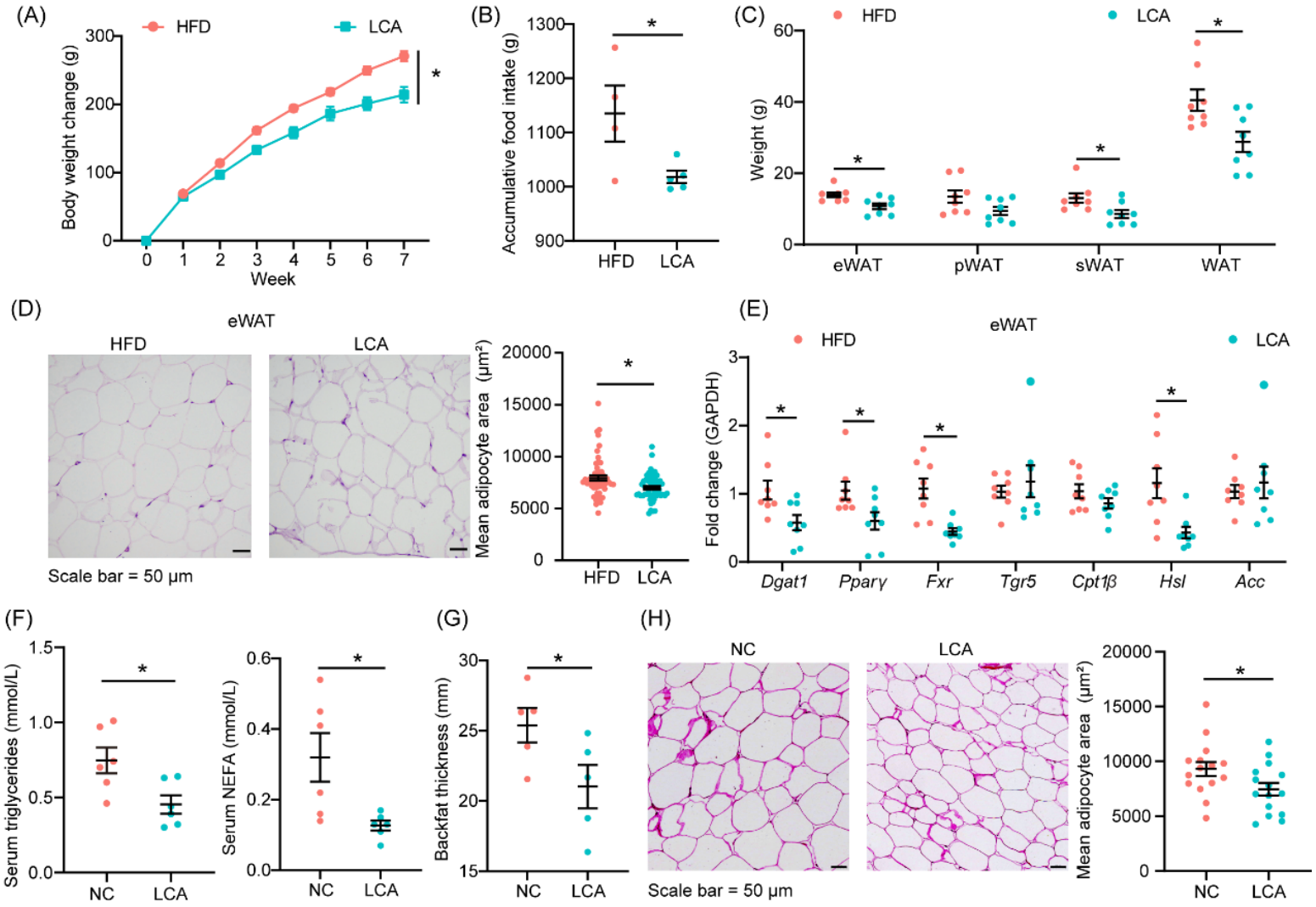
Results





Pharmacological inhibition of the BSH impairs the anti-fat deposition effect of *B. pseudocatenulatum*.

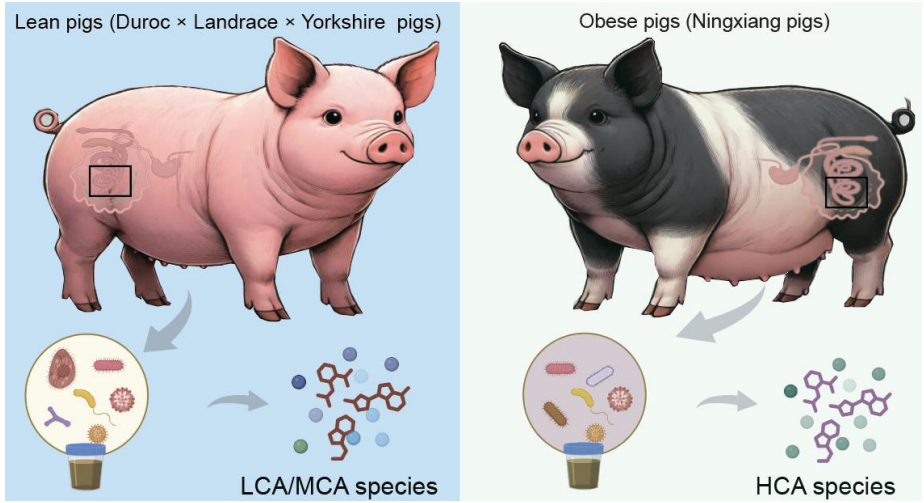
Results

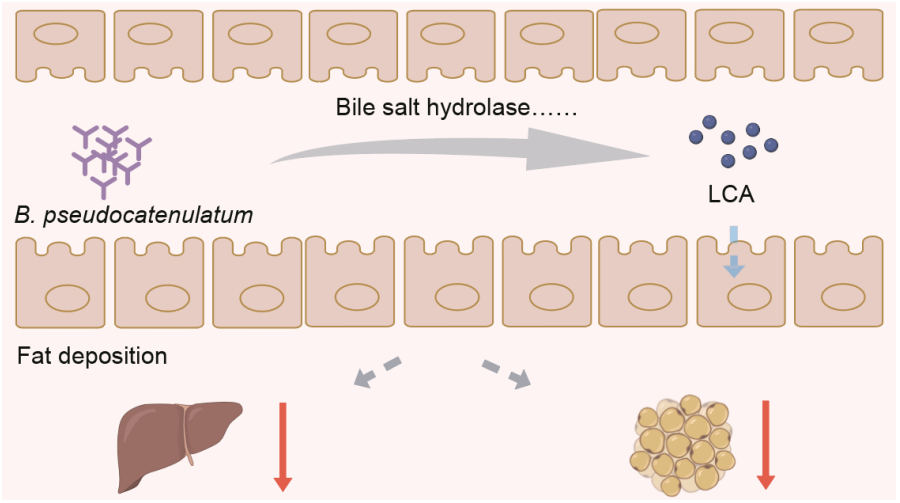


LCA protects against fat deposition in HFD-fed rat and NX pig models

Summary

- **The colonic microbiota of lean and obese growing-finishing pigs regulated fat composition.**
- **Multiomics revealed that *Bifidobacterium pseudocatenulatum* may reduce fat deposition by regulating secondary bile acid metabolism.**
- ***Bifidobacterium pseudocatenulatum* reduced fat deposition by enhancing secondary bile acid biosynthesis in HFD-fed mice.**
- **Dietary LCA reduced fat deposition in HFD-fed rat and obese Ningxiang pig models.**





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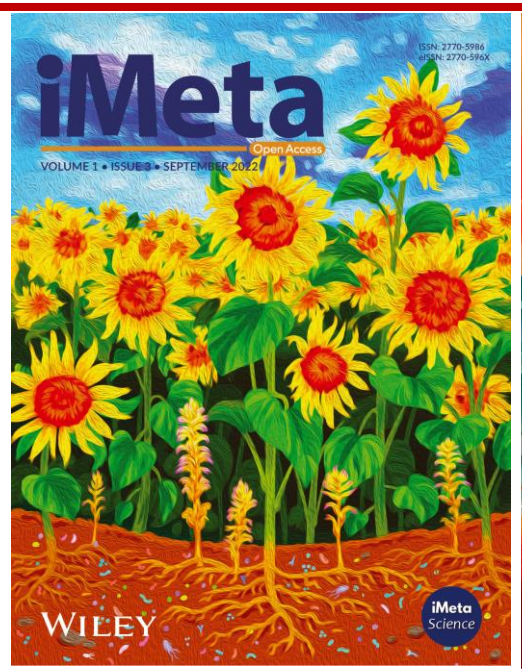

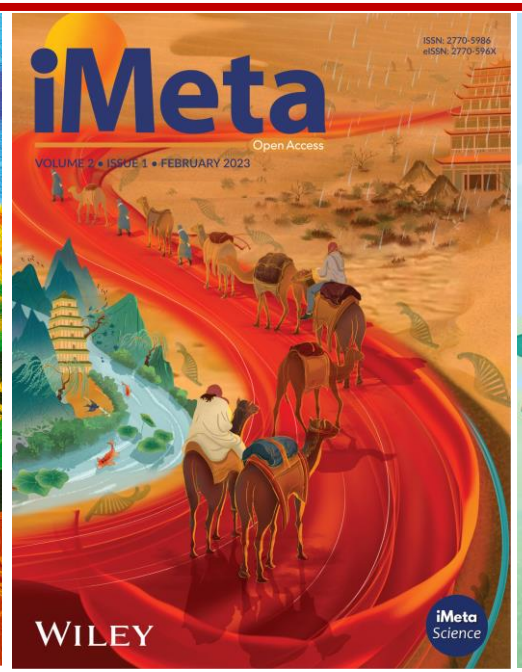

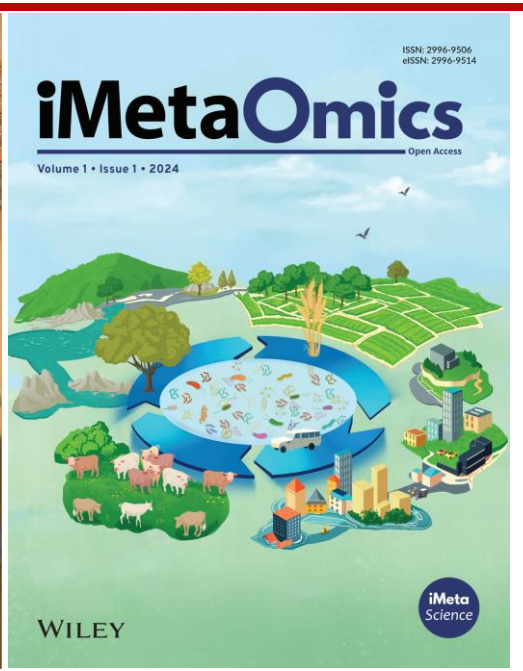

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