

Cite this as: Jun HU, Qiliang HOU, Wenyong ZHENG, Tao YANG, Xianghua YAN. *Lactobacillus gasseri* LA39 promotes hepatic primary bile acid biosynthesis and intestinal secondary bile acid biotransformation[J]. Journal of Zhejiang University Science B, 2023, 24(8): 734-748.
<http://doi.org/10.1631/jzus.B2200439>

***Lactobacillus gasseri* LA39 promotes hepatic primary bile acid biosynthesis and intestinal secondary bile acid biotransformation**

Key words: *Lactobacillus gasseri* LA39, Liver, iTRAQ, Bile acid, Germ-free mice

Research Summary

Gut microbiota plays an important role in liver metabolism. In this study, we investigated the role of *Lactobacillus gasseri* LA39, a potential probiotic, on liver metabolism in germ-free mice. Our findings revealed that *L. gasseri* LA39 activates the hepatic primary bile acid biosynthesis and promotes the intestinal secondary bile acid biotransformation.



Innovation points

- Oral administration of *Lactobacillus gasseri* LA39 alters the protein expression profiles in the liver of germ-free mice
- Hepatic primary bile acid biosynthesis is the enriched pathway with differentially expressed proteins
- *L. gasseri* LA39 activates the hepatic primary bile acid biosynthesis.
- *L. gasseri* LA39 promotes the secondary bile acid biotransformation in intestinal tract.

Innovation points

A series of comprehensive figures were generated to summarize the role of *Lactobacillus gasseri* LA39.

Figure 1 | *L. gasseri* LA39 alters hepatic protein expression profiles

Figure 2 | Subcellular localization and COG function annotation of differentially expressed proteins

Figure 3 | Analyses of protein-protein interaction networks

Figure 4 | Analyses of biological process and molecular function of differentially expressed proteins

Figure 5 | *L. gasseri* LA39 activates primary bile acid biosynthesis pathway

Figure 6 | Primary bile acids and secondary bile acids in feces and serum are increased by treatment with *L. gasseri* LA39