

***Cite this as:*** Shuyu TU, Yanan ZHANG, Li ZHANG, Shu Jeffrey ZHU, 2026. Commensal bacteria play a fundamental role in maintaining gut immune homeostasis. *Journal of Zhejiang University-SCIENCE B*, 27(1):101-104. <https://doi.org/10.1631/jzus.B2400431>

# **Commensal bacteria play a fundamental role in maintaining gut immune homeostasis**

**Key words:** Intestinal bacteria; Inflammatory bowel disease;  
Virus-bacteria interaction; Immune modulation

# Research Summary

This Correspondence mainly focused on how specific intestinal microbes and their metabolic small molecules maintain gut immune homeostasis.

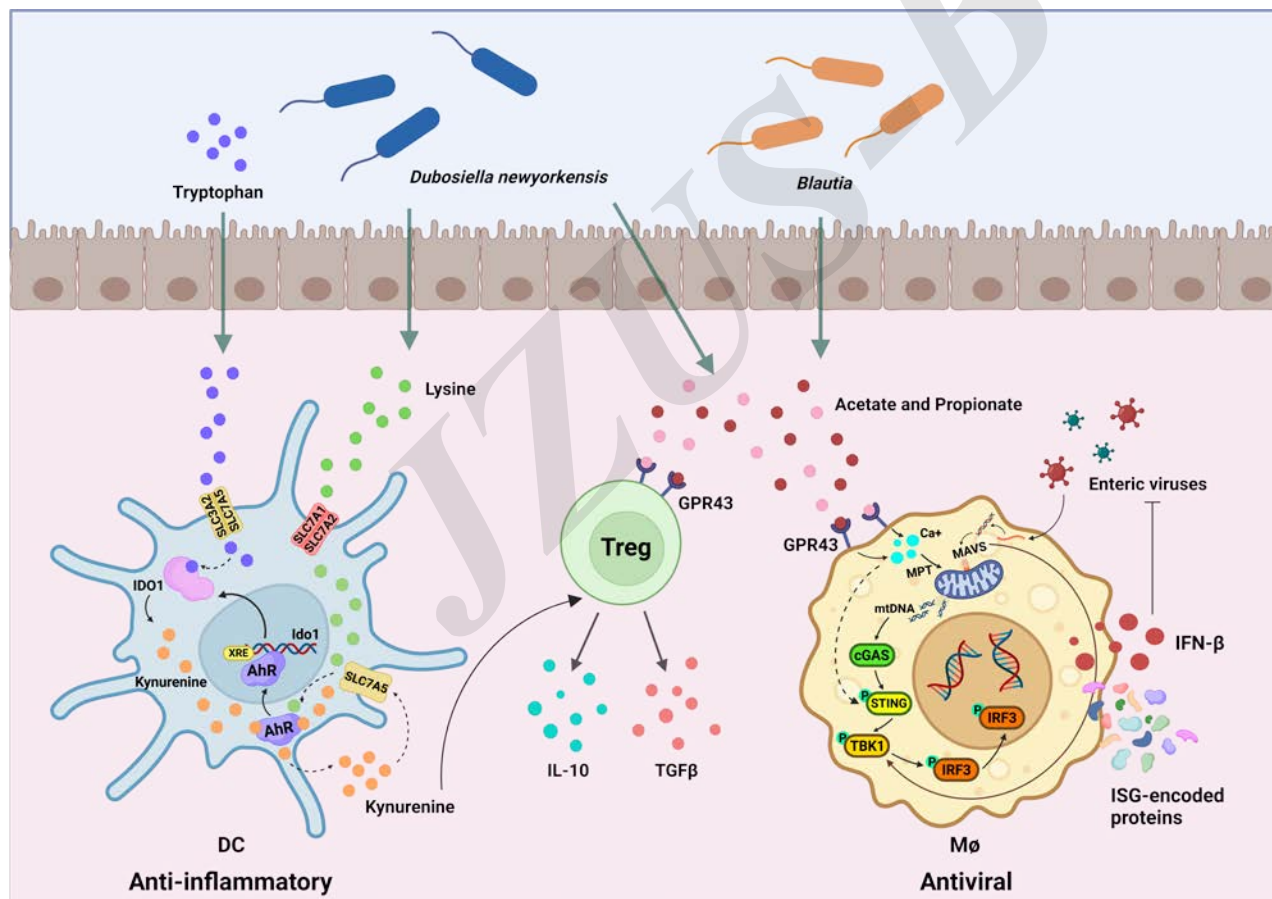


Figure 1

# ***Innovation points***

- **Introduction** of the effects of microbial metabolites may vary across different immune cell types and host homeostasis.
- **Summary** findings that *D. Newyorkensis* priming immune tolerance by secreting metabolites (propionate and lysine) to program the metabolic pathways in dendritic cells.
- **Emphasis** on the gut microbiota is important for not only the maintenance and restoration of local and systemic homeostasis but also the host defense against pathogenic microorganisms.