Review of: "Positive Selection and Adaptation Role of Gut Microbiota in the Evolution of Adaptive Immunity of Mammalian Species"

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Potential competing interests: No potential competing interests to declare.

Dear Authors,

The manuscript presents some novelty and is well written, structured, and organized. The figures and tables are very clear, and I recommend the publication of the manuscript after elucidating some details:

1. **How does variation in gut microbiota within mammalian species impact host phenotypes?**
2. **What are the specific modes by which gut microbiotas alter the adaptive landscapes experienced by hosts during mammalian evolution?**
3. **Why do mechanisms underlying adaptation to various gut microbiota remain poorly understood?**
4. **How does the immune system of the host influence the molecular evolution and adaptation of gut microbiota in different mammalian species?**
5. **What evidence supports the gut microbiota's influence on mammalian evolution and diversification?**
6. **Which approach was used to identify evidence of positive selection in immune genes?**
7. **What role does episodic positive selection play in the genetic development of species-specific gene sequences and divergence in mammalian species?**
8. **How does the gut microbiota impact mammals' ability to adapt to their diet, change physical characteristics, and influence their immune response?**