



Whole microbiota transplantation restores gut homeostasis throughout the gastrointestinal tract

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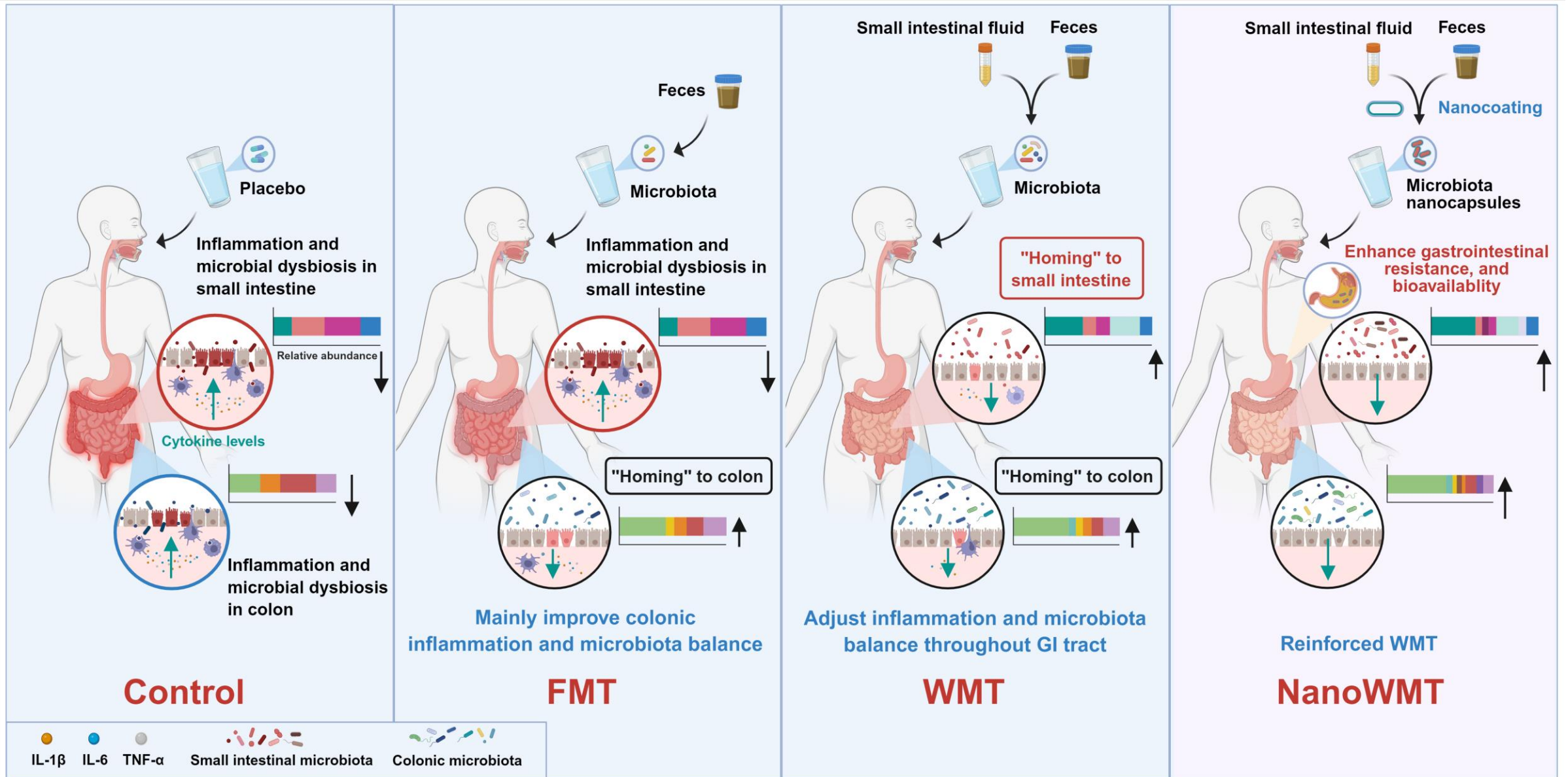
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Introduction



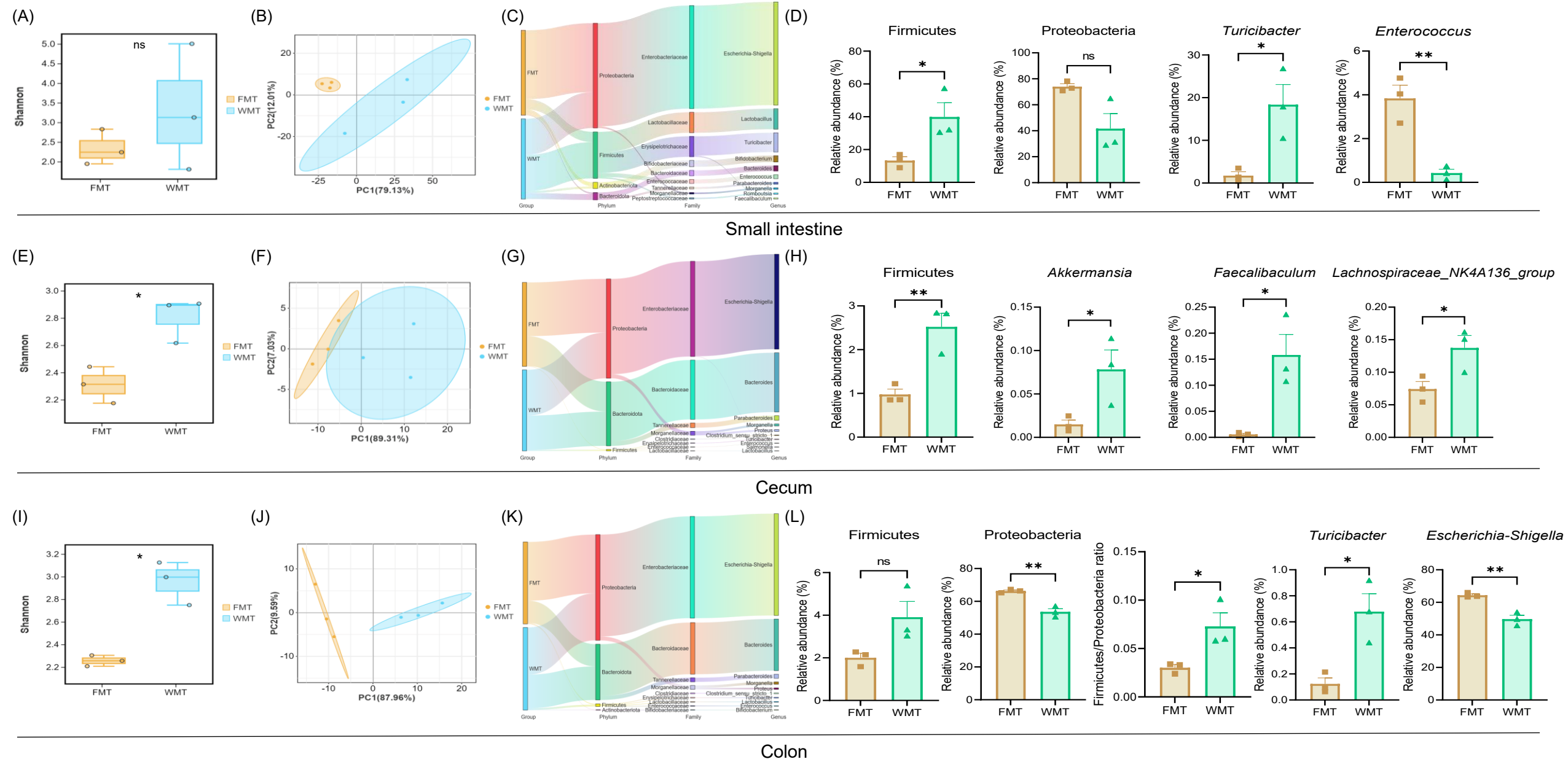


Highlights

- Whole microbiota transplantation (WMT) efficiently restores the microbial homeostasis of the entire intestinal tract in germ-free (GF) mice.
- WMT is more effective than FMT in alleviating intestinal inflammation and reversing microbiota dysbiosis.
- NanoWMT improves intestinal microbial colonization, thereby enhancing the therapeutic effect on intestinal inflammation.



WMT restores gut microbiota of GF mice





WMT ameliorates intestinal mucositis and reshapes microbiota dysbiosis

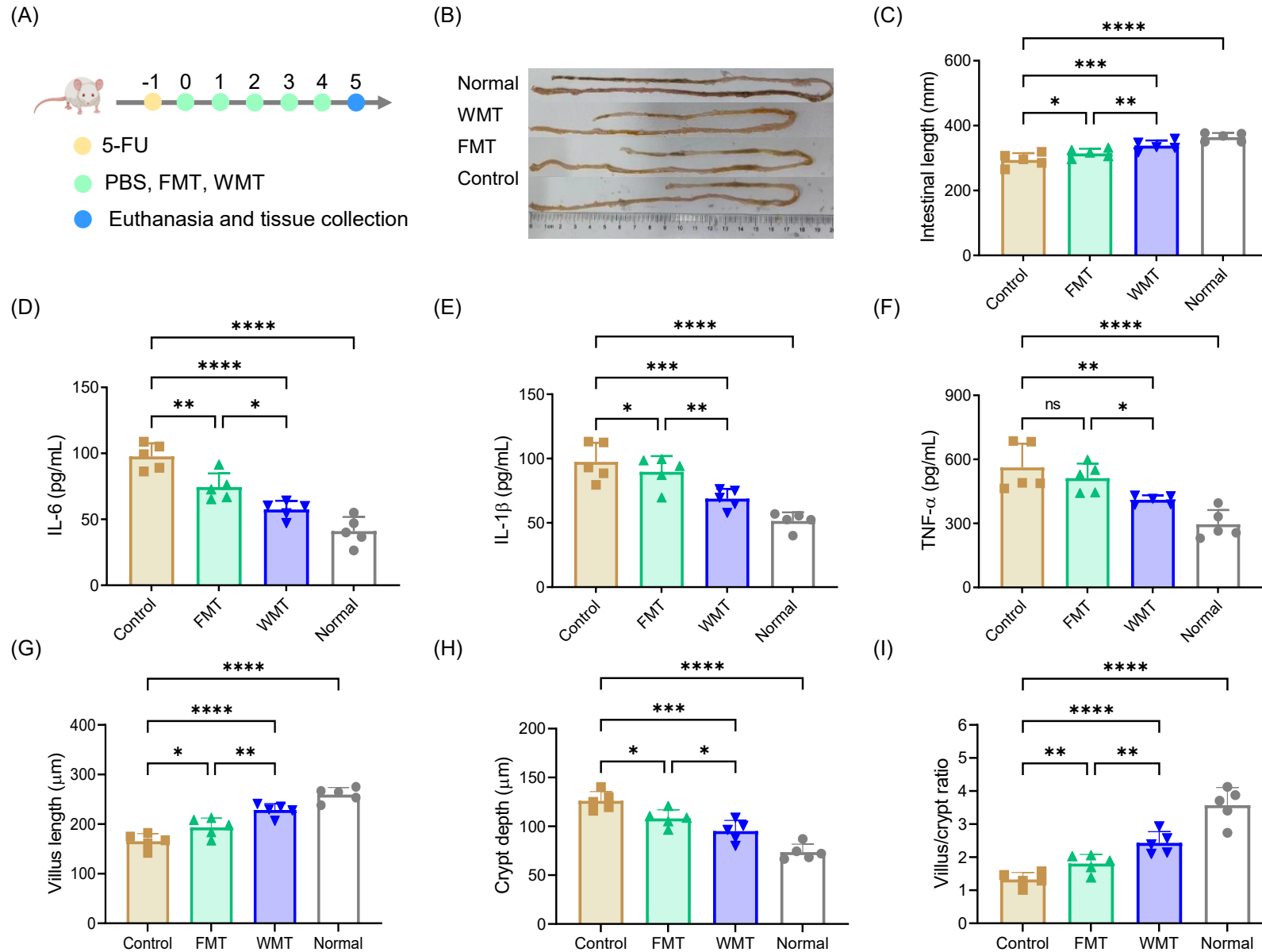
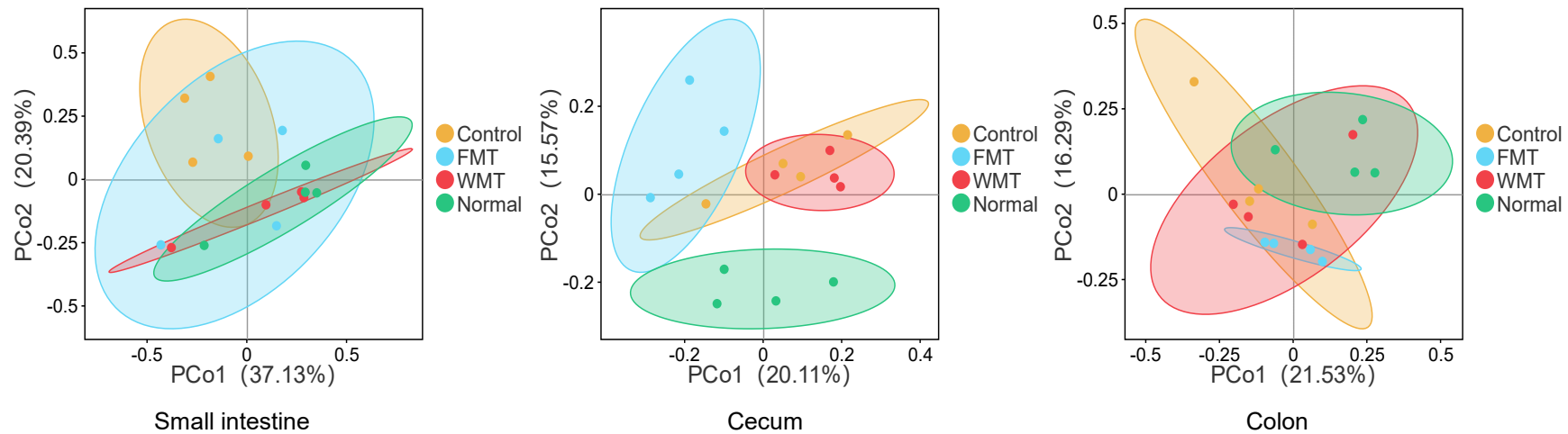


Figure 1. WMT ameliorates 5-fluorouracil (5-FU)-induced intestinal mucositis.



WMT ameliorates intestinal mucositis and reshapes microbiota dysbiosis

(J)



(K)

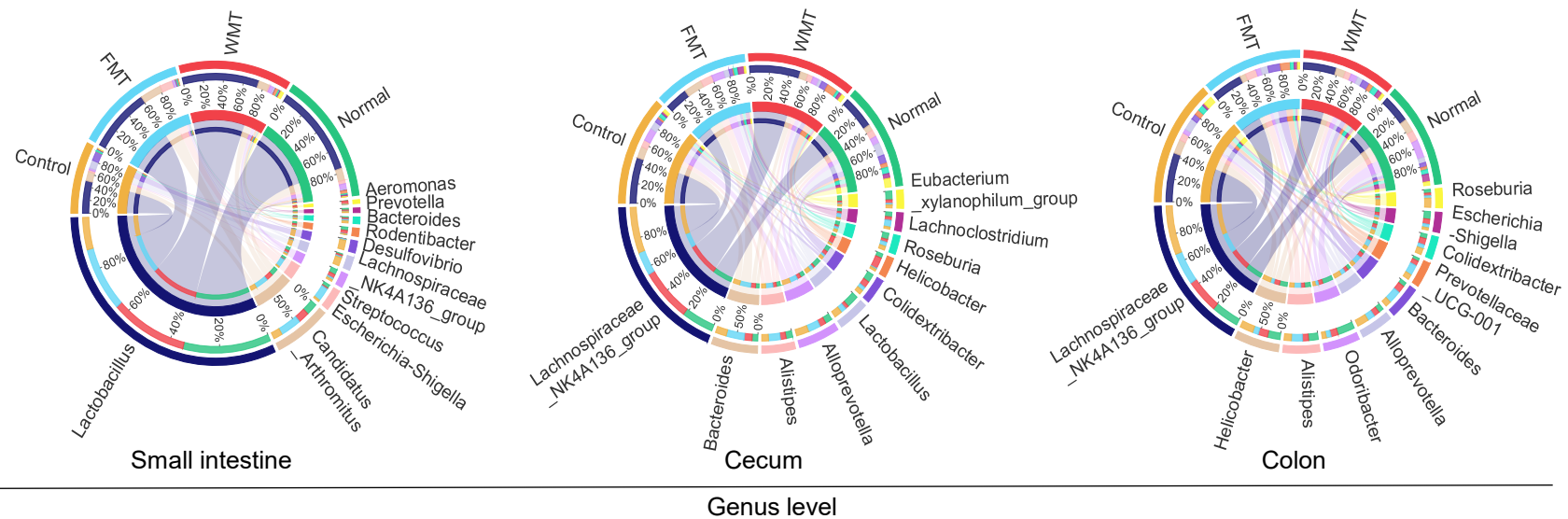


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Design of microbiota nanocapsules and their gastrointestinal robustness

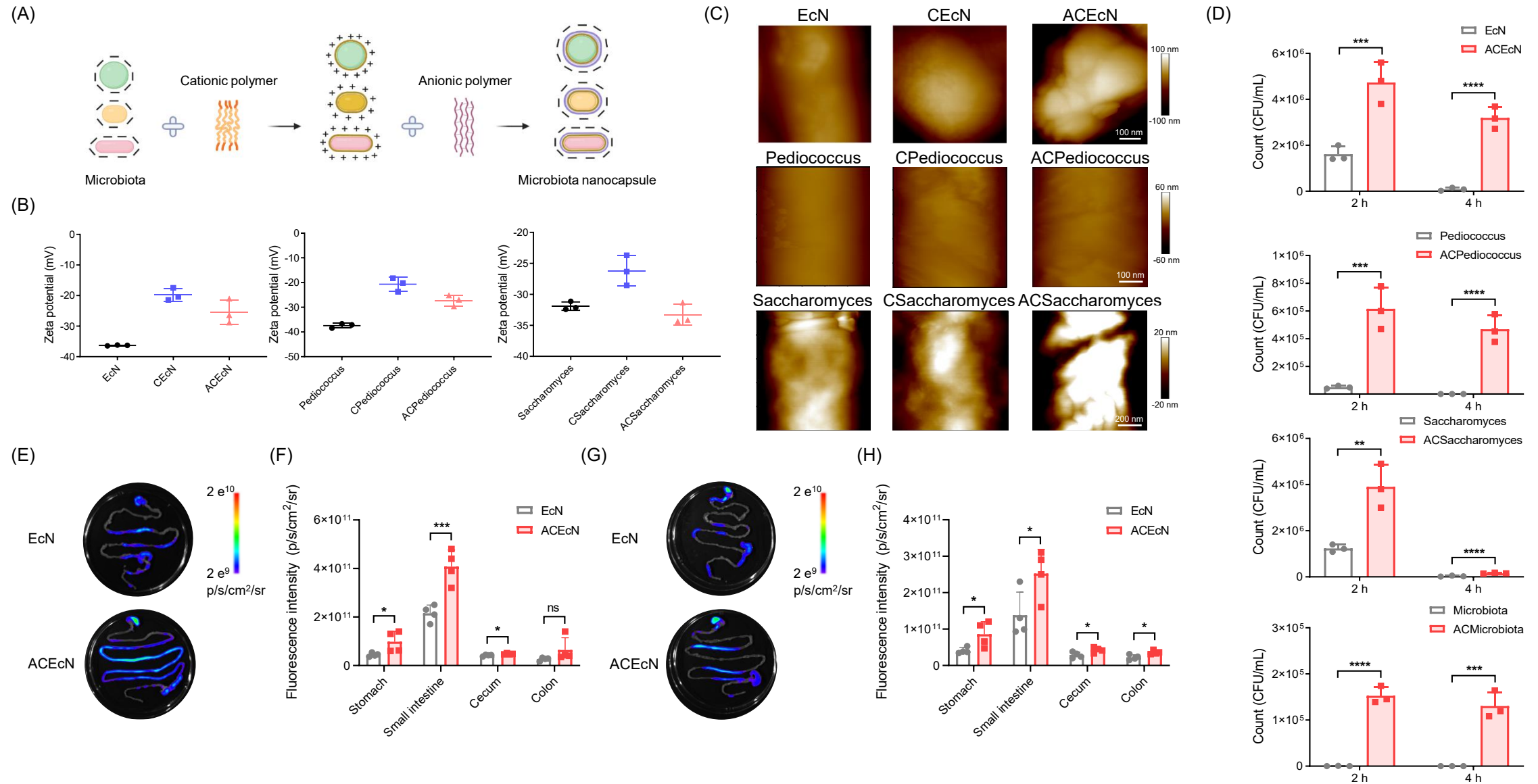


Figure 2. NanoWMT alleviates *Salmonella typhimurium* (STm)-induced colitis.



Efficacy of NanoWMT against STm infection

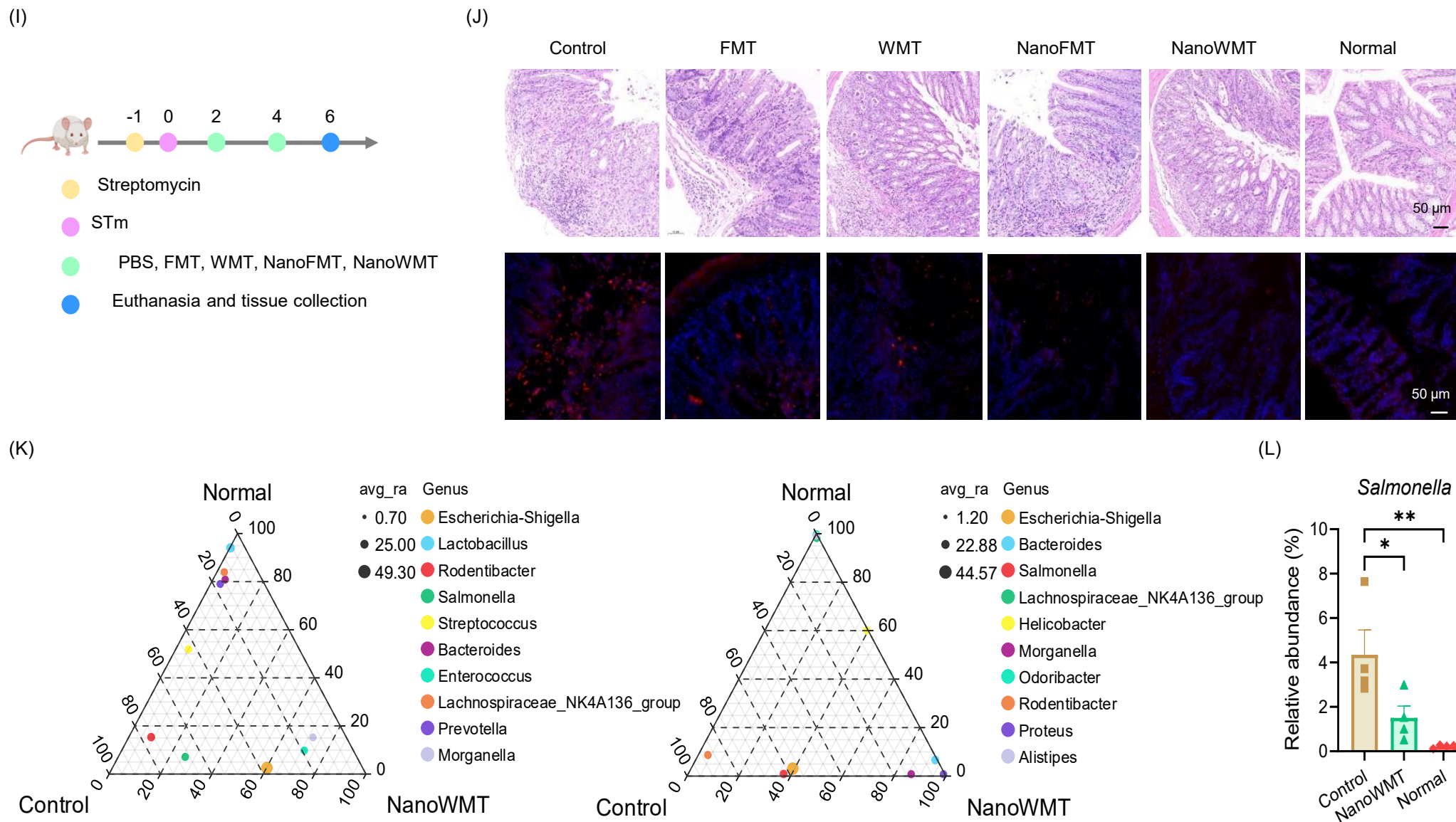


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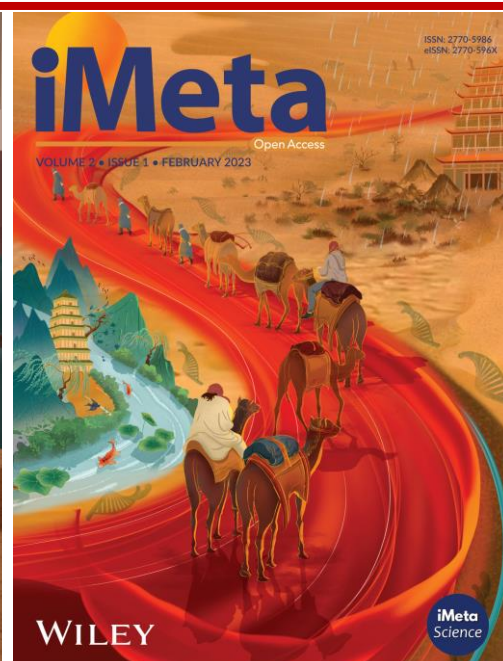
Summary

- ❑ WMT reshapes gut microbiota homeostasis throughout GI tract in GF mice.
- ❑ WMT ameliorates intestinal mucositis and reverses microbiota dysbiosis.
- ❑ Nanocapsules enhances gut microbial colonization in GI tract.
- ❑ NanoWMT shows significant therapeutic potential in mitigating inflammation and restoring gut microbial homeostasis.

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