

Prebiotic Potential of *Polygonatum sibiricum* Red. Leaf Polysaccharides in Regulating Gut Microbiota to Alleviate Antibiotic-Associated Diarrhea

by

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Supplementary Materials

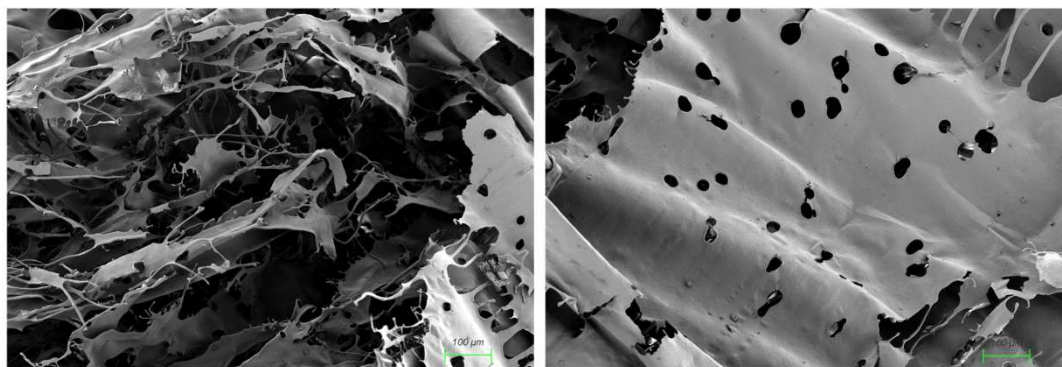


Figure S1. Scanning electron microscope (SEM) images of *Polygonatum sibiricum* Red. leaf polysaccharides (×100).

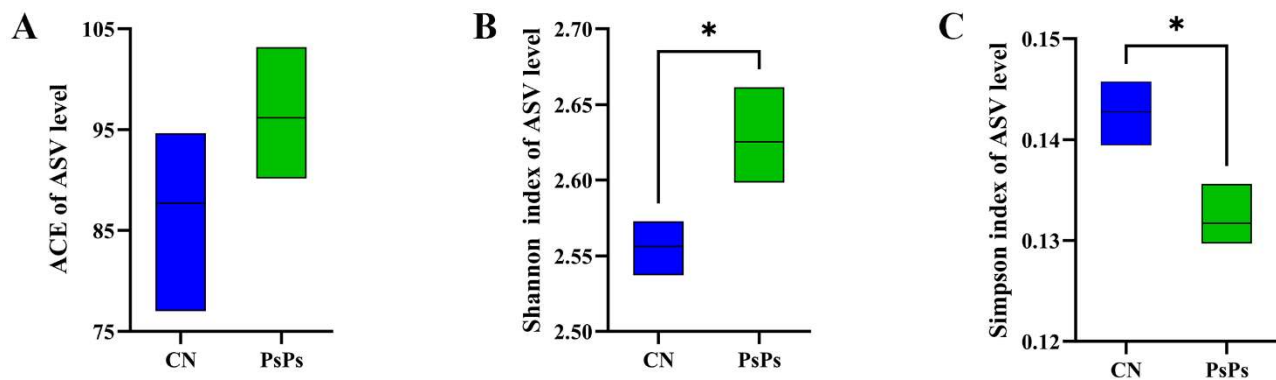


Figure S2. *In vitro* fermentation of PsPs. (A) Abundance-based coverage estimator (ACE). (B) Shannon index. (C) Simpson index. ASV, amplicon sequence variant; CN, blank control group; PsPs, *Polygonatum sibiricum* Red. leaf polysaccharides group. * indicates statistical significance at $p < 0.05$.

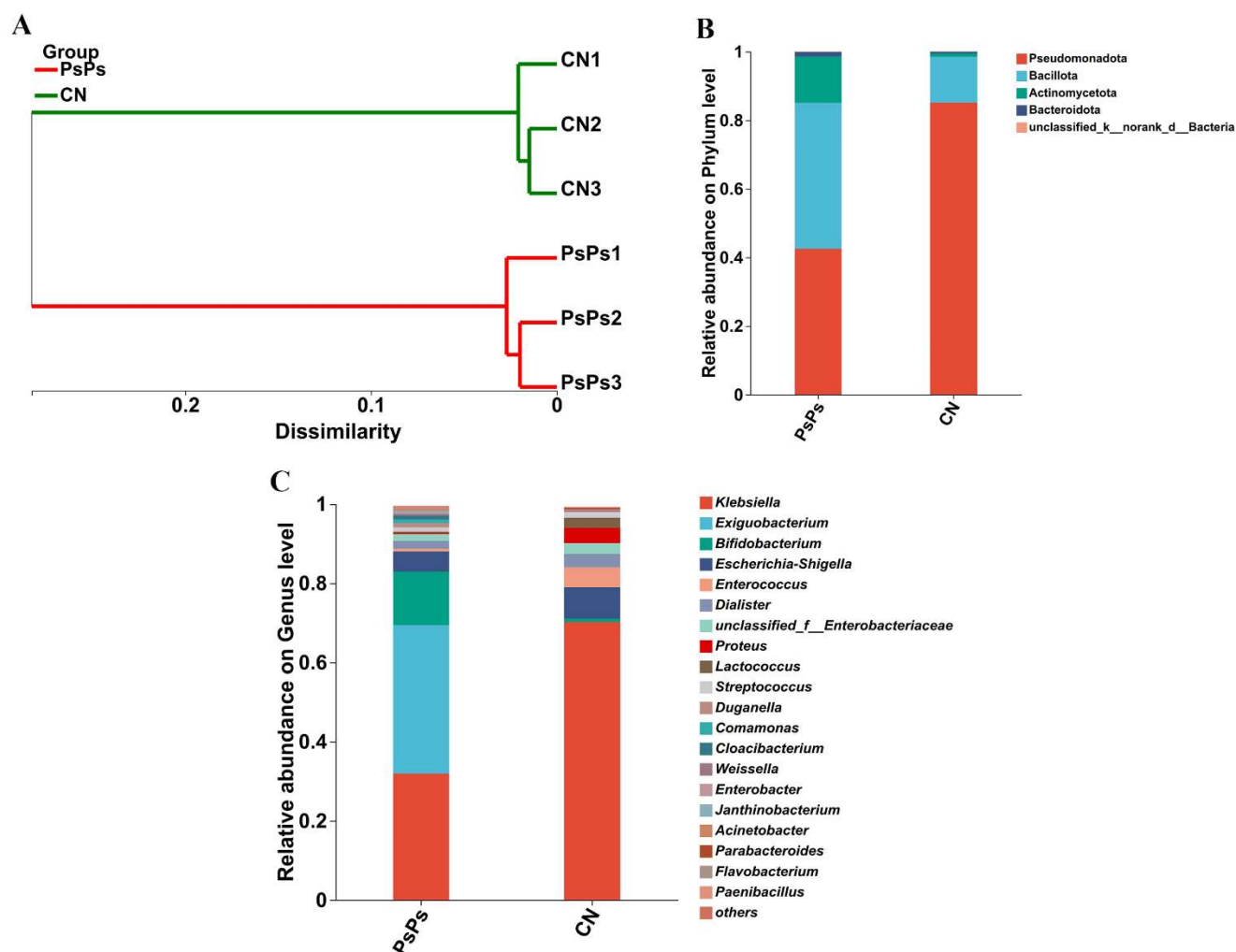


Figure S3. *In vitro* fermentation of PsPs. (A) Hierarchical clustering tree of CN and PsPs. (B) and (C) Composition of gut microbiota at the phylum and genus level, respectively. CN, blank control group; PsPs, *Polygonatum sibiricum* Red. leaf polysaccharides group.

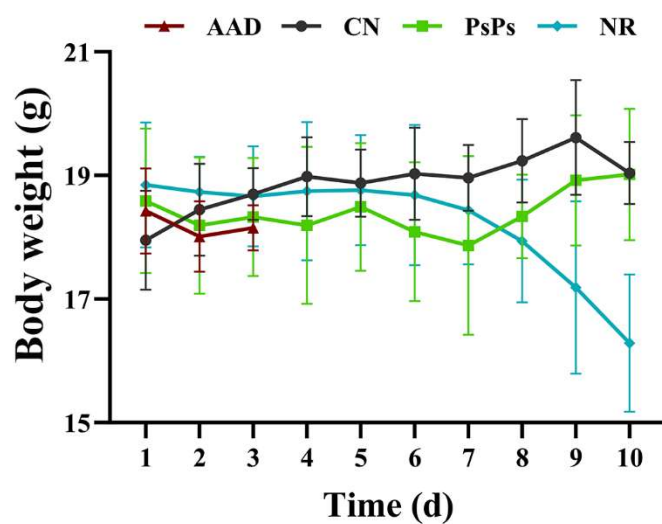
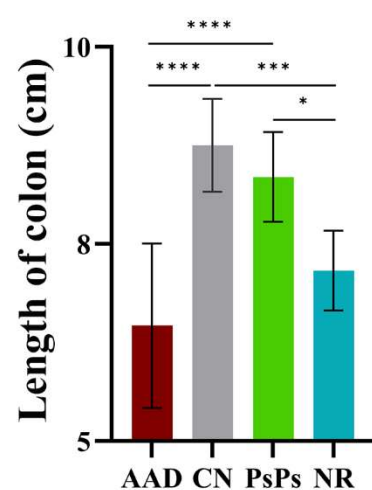
A**B**

Figure S4. The effect PsPs on (A) body weight and (B) colon length in mice. AAD, antibiotic-associated diarrhea group; CN, blank control group; PsPs, *Polygonatum sibiricum* Red. leaf polysaccharides group; NR, natural recovery group. *, ***, and **** indicate statistical significance at $p < 0.05$, $p < 0.001$, and $p < 0.0001$, respectively.

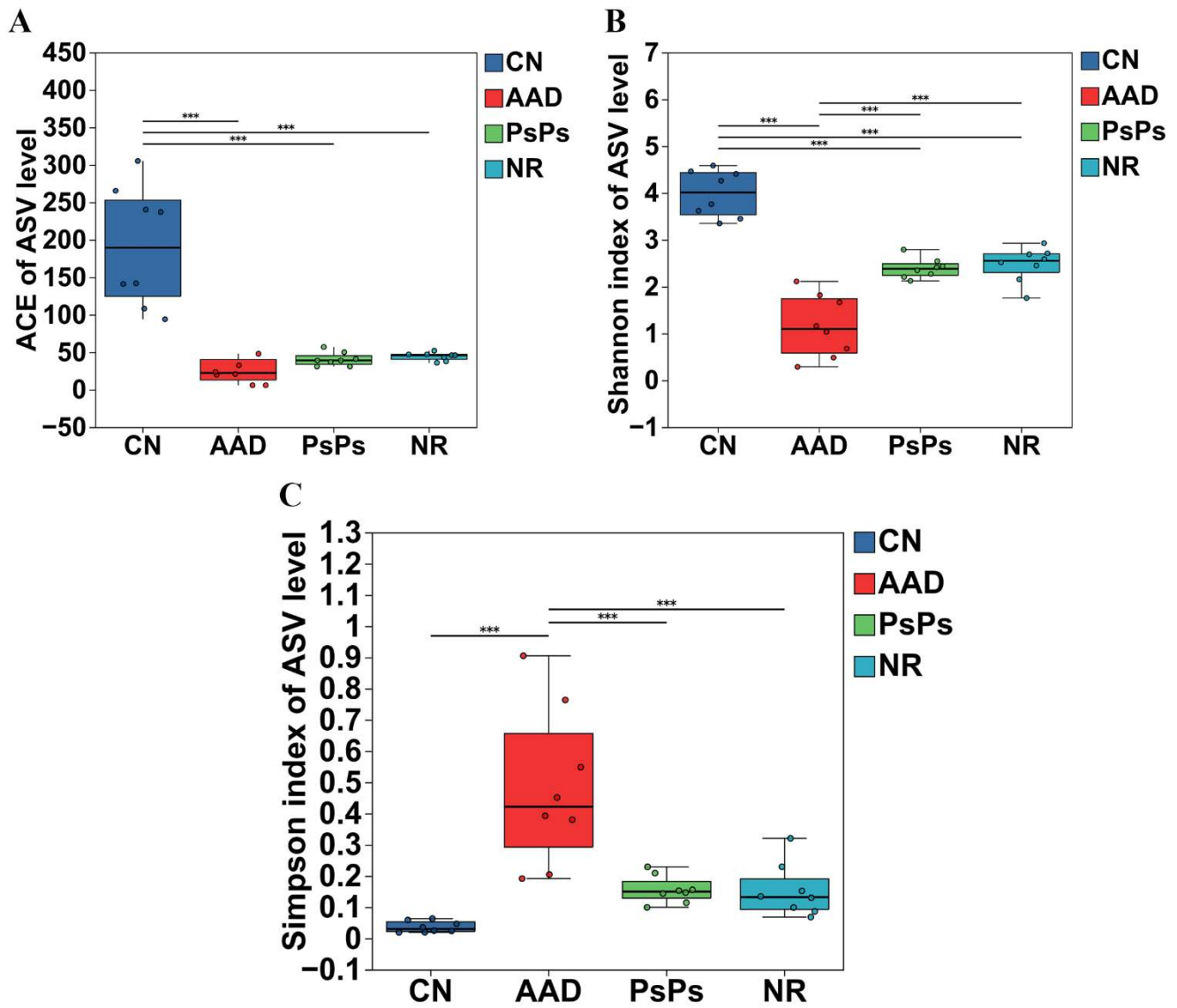


Figure S5. The effect of PsPs on mice gut microbiota. (A) Abundance-based coverage estimator. (B) Shannon index. (C) Simpson index. AAD, antibiotic-associated diarrhea group; CN, blank control group; PsPs, *Polygonatum sibiricum* Red. leaf polysaccharides group; NR, natural recovery group. *** indicate statistical significance at $p < 0.001$.

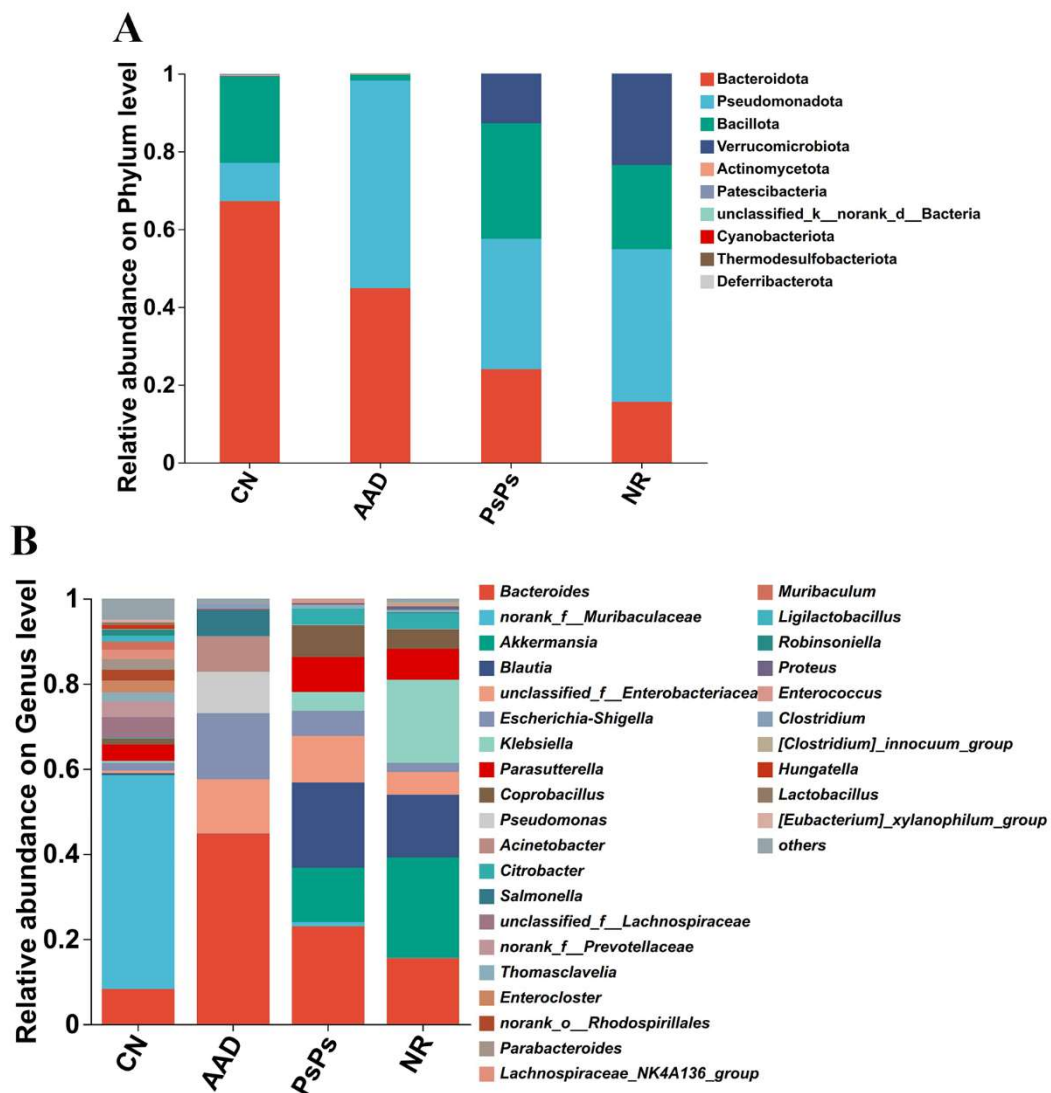


Figure S6. The effect of PsPs on mice gut microbiota. (A) and (B) Composition of gut microbiota at the phylum and genus level, respectively. AAD, antibiotic-associated diarrhea group; CN, blank control group; PsPs, *Polygonatum sibiricum* Red. leaf polysaccharides group; NR, natural recovery group.