**Dietary intervention using (1,3)/ (1,6)-β-glucan, a fungus-derived soluble prebiotic ameliorates high-fat diet-induced metabolic distress and alters beneficially the gut microbiota in mice model**

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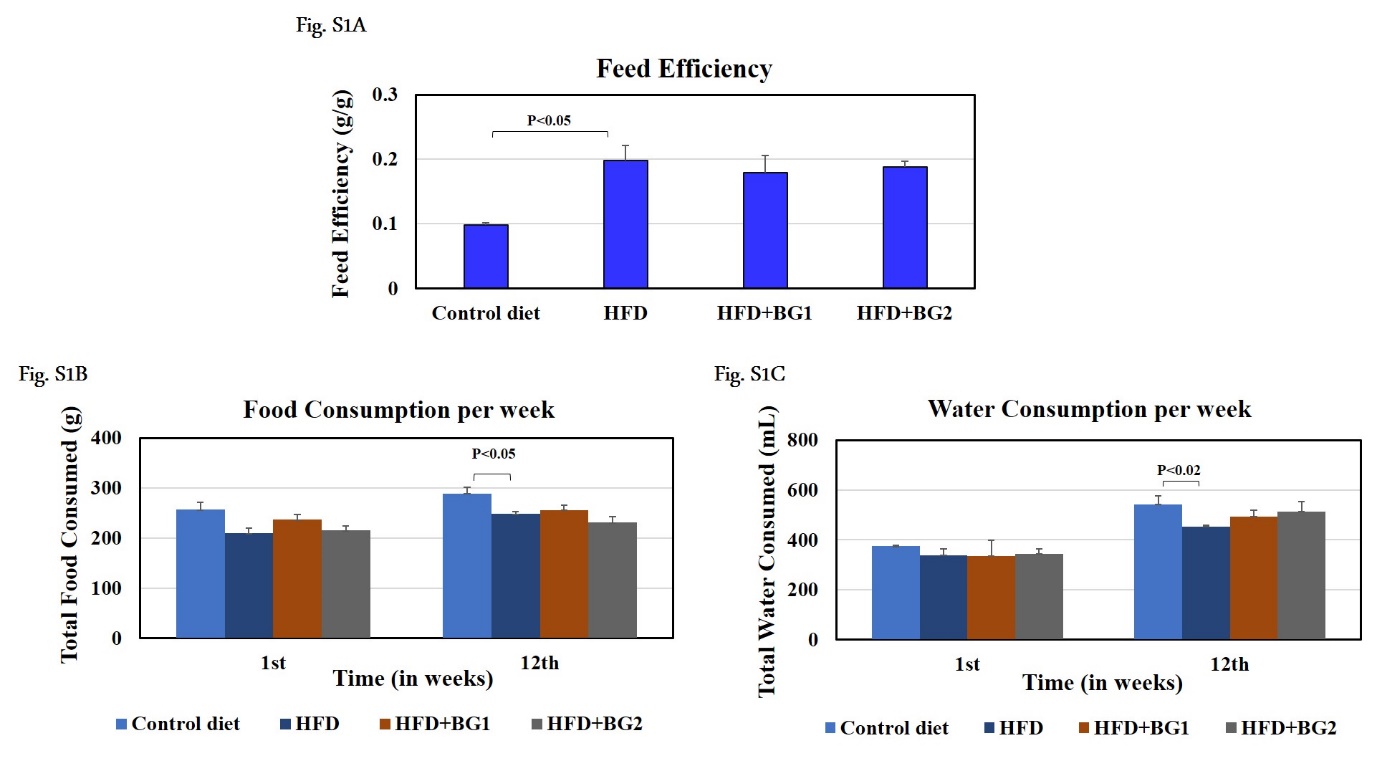
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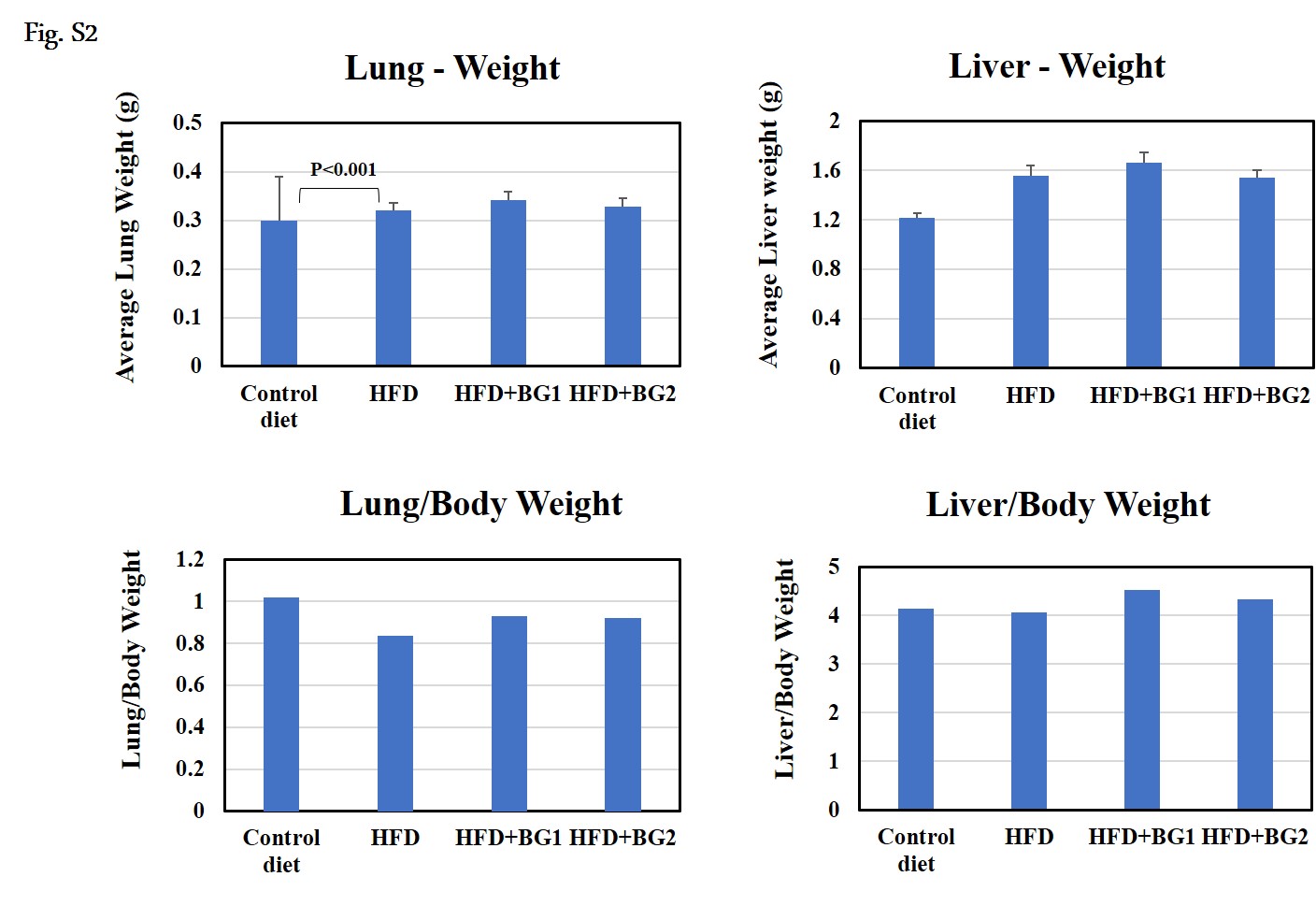
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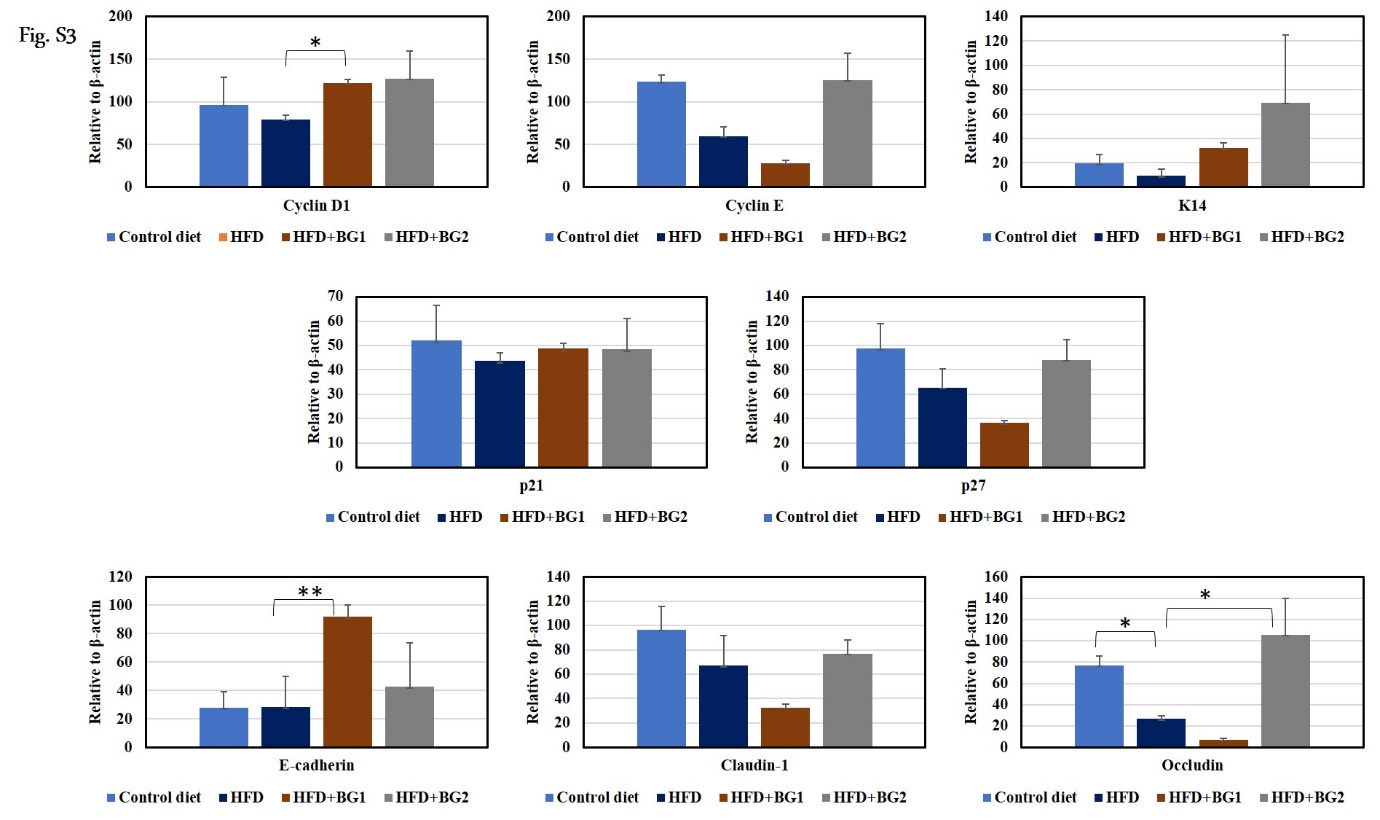
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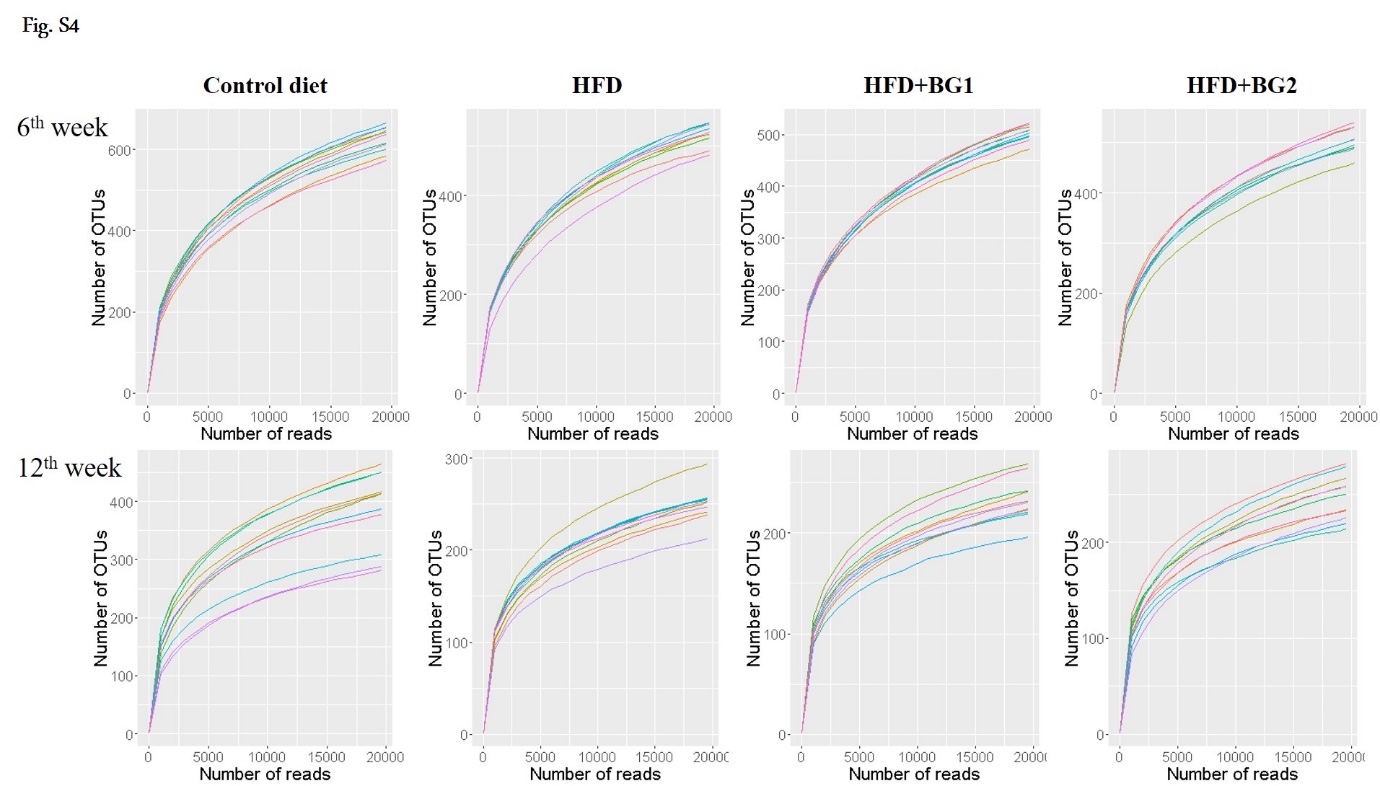


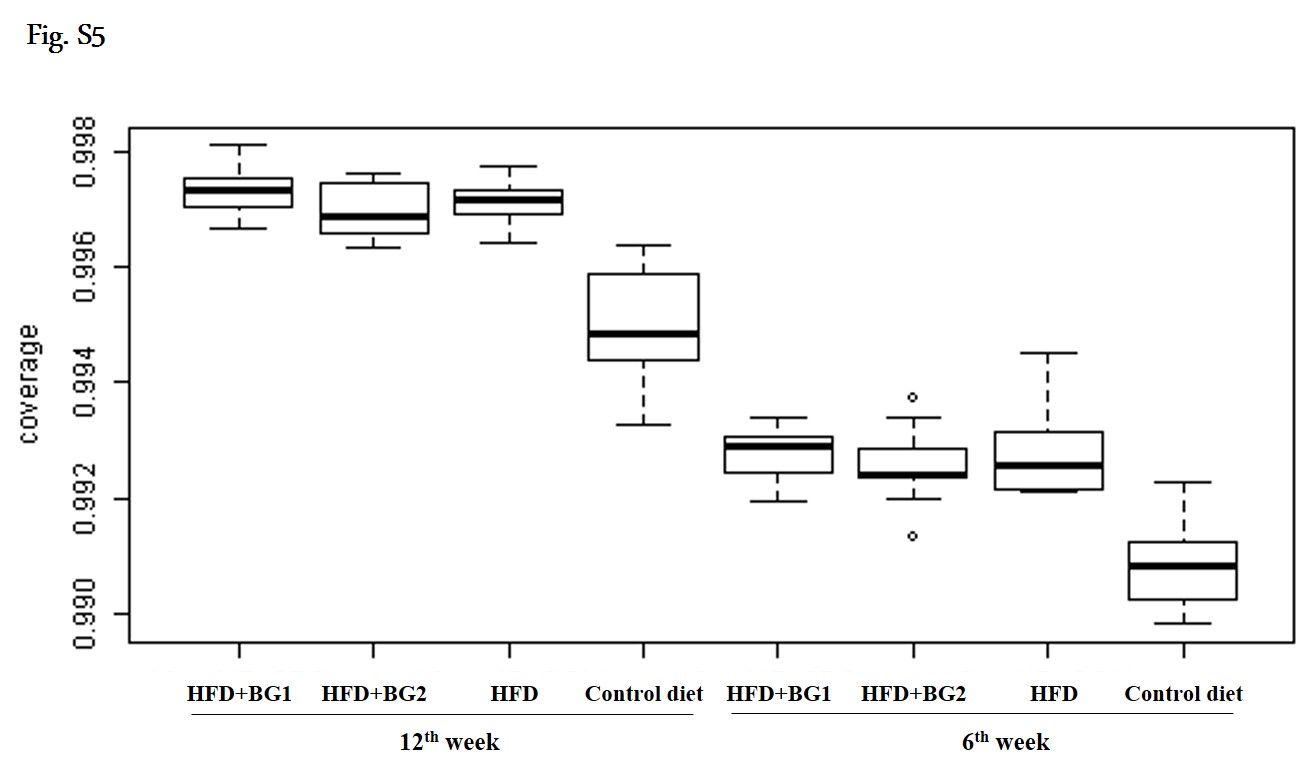
**Online Resource Fig.S1:** Effect of dietary β-glucan on energy intake. a: Feed efficiency, b: Food consumption, and c: Water consumption.

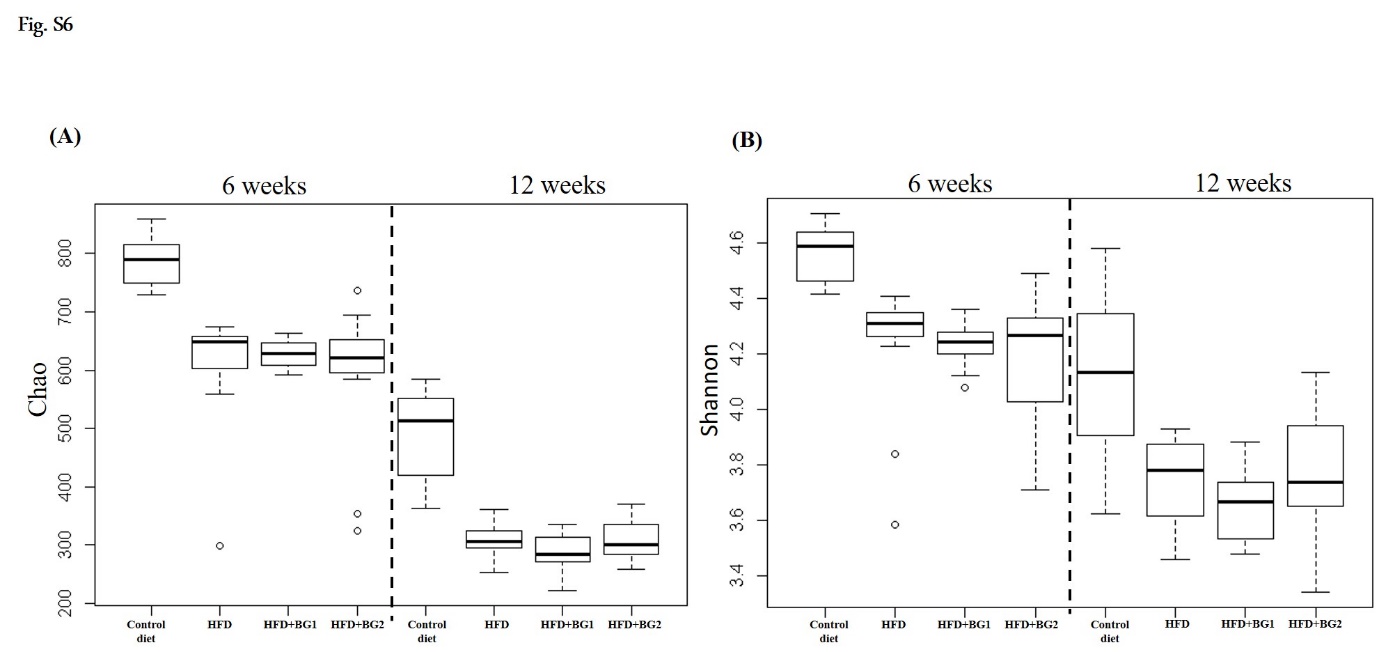


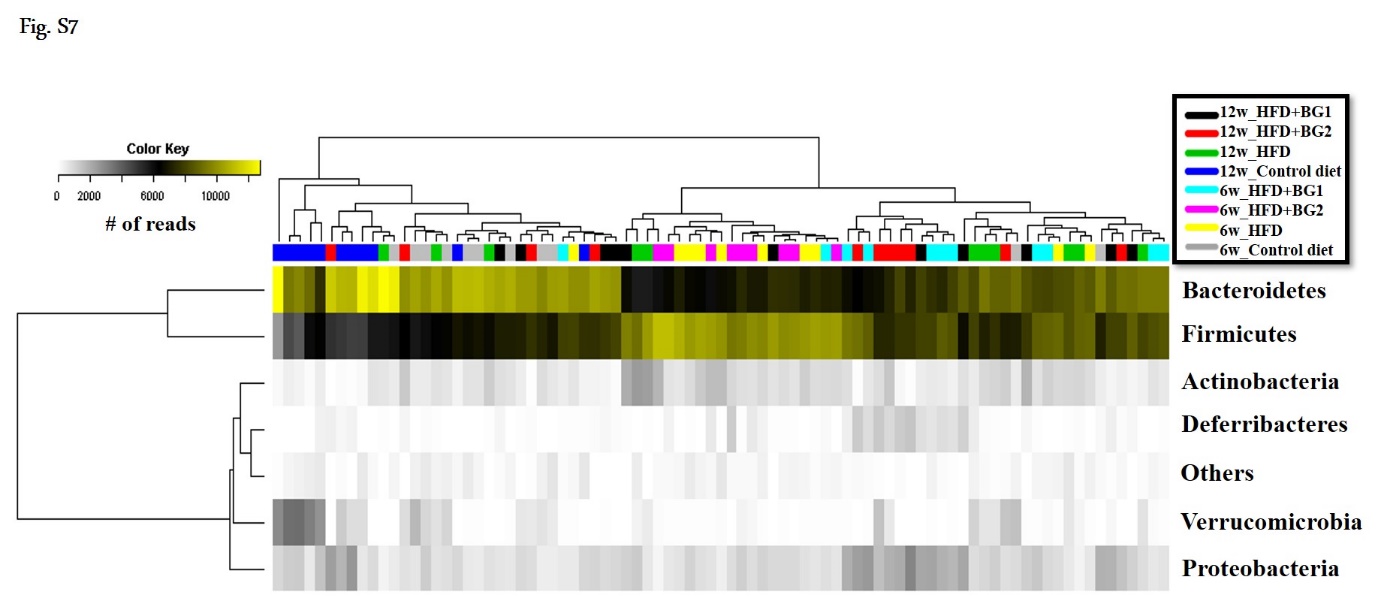
**Online Resource Fig.S2:** Effect of dietary β-glucan on pathophysiology of mice. A: Lung weight and lung/body weight and B: Liver weight and liver/body weight.

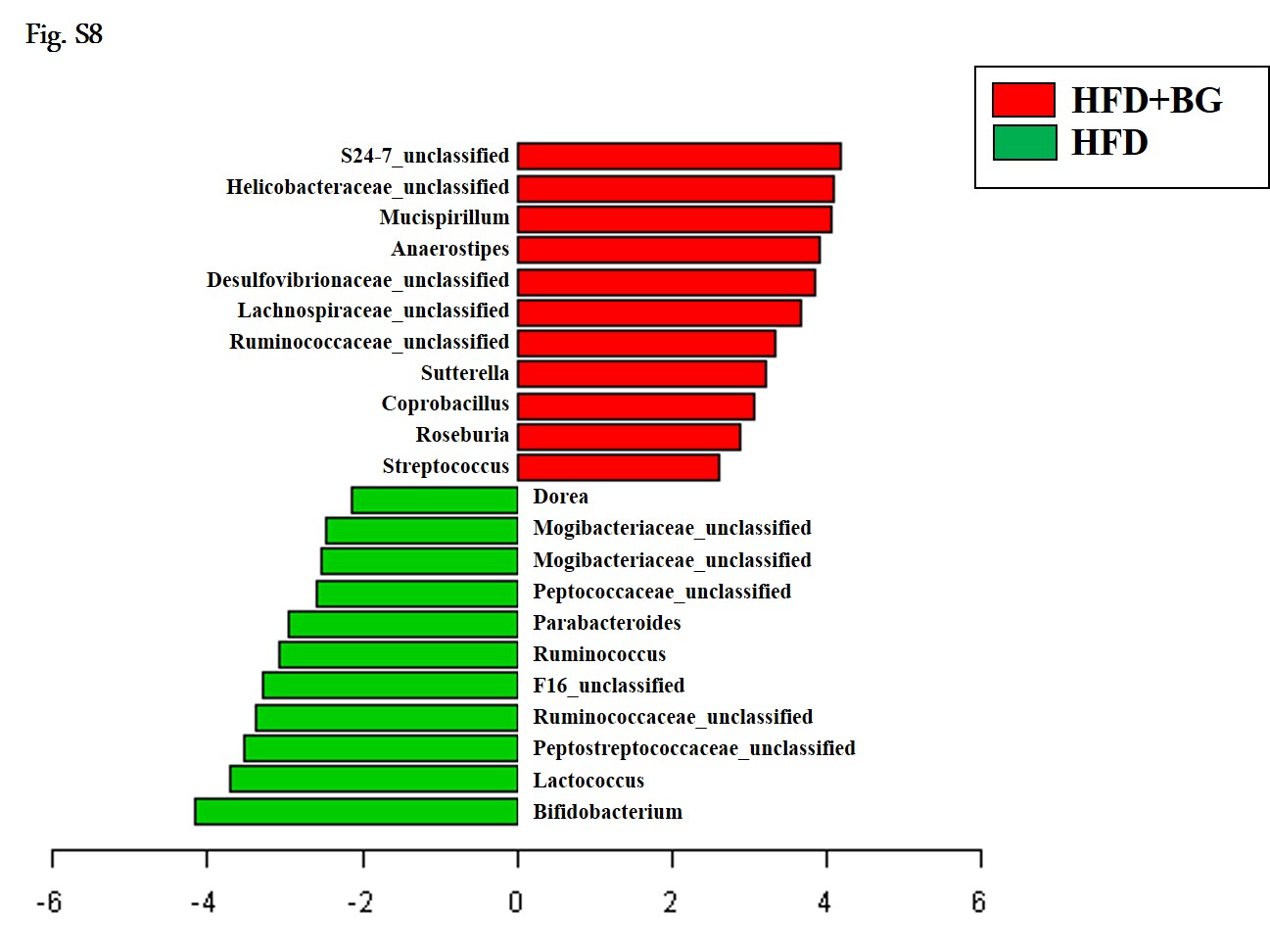
 **Online Resource Fig.S3:** Assessment of expression of intestinal proteins involved in colon cell proliferation, differentiation, and tight junction markersin HFD, HFD + BG1, and HFD + BG2 groups.

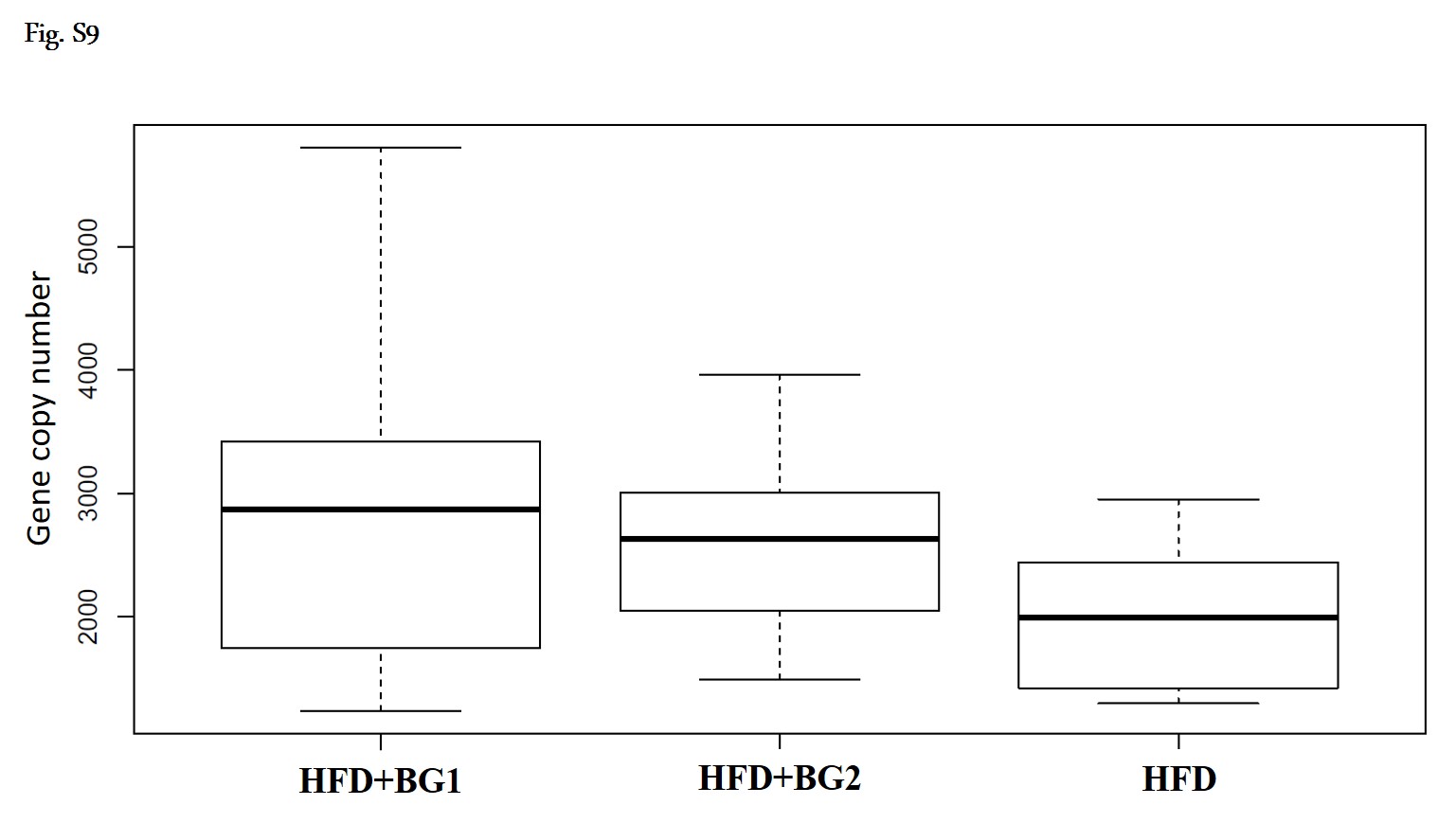
 **Online Resource Fig.S4:** Evaluation of sequence depth by rarefaction curve analysis.

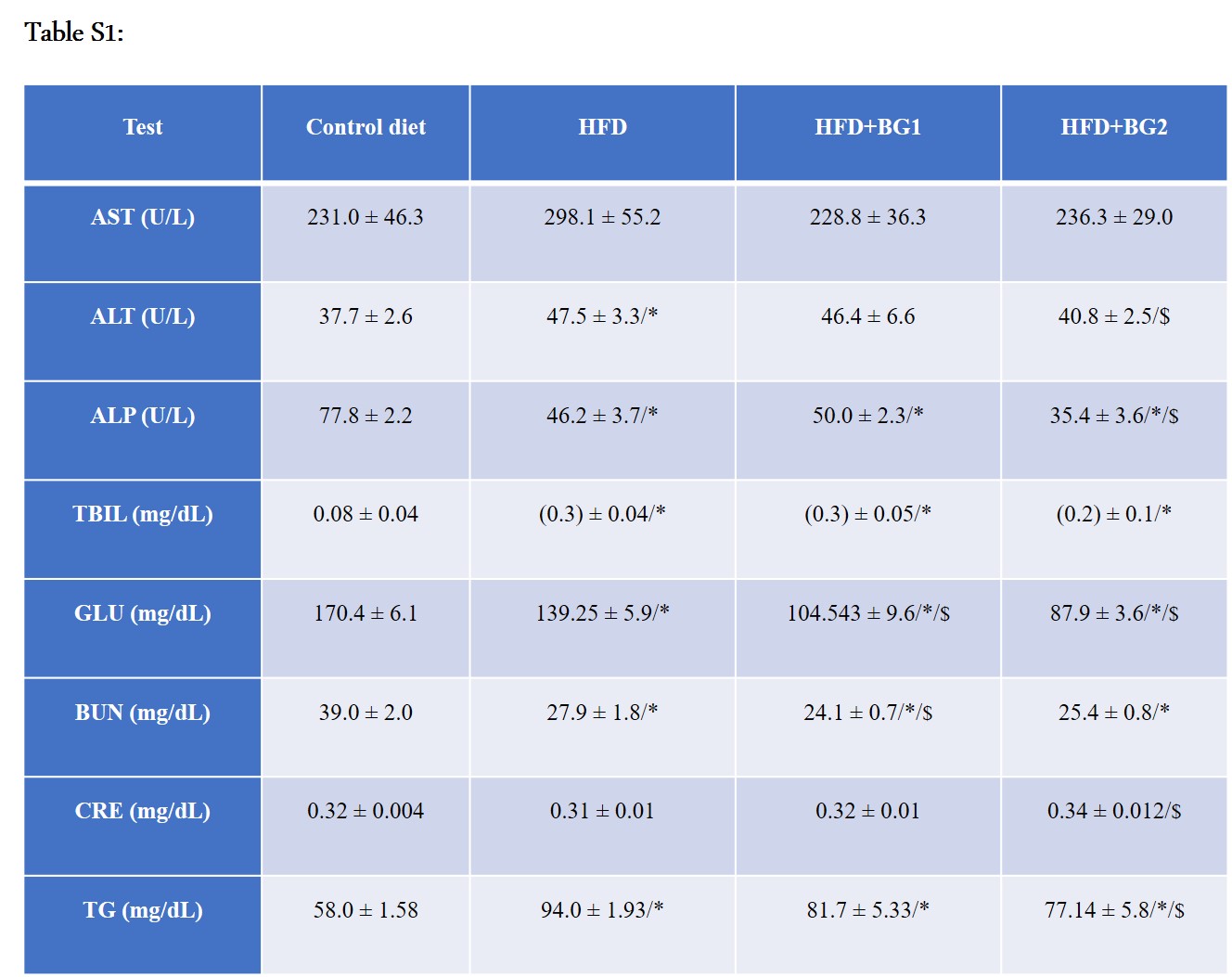
 **Online Resource Fig.S5:** Good’s coverage obtained for each sample in this study.

 **Online Resource Fig.S6:** Effects of feeding duration and diets on species richness (A) and evenness (B) in the mouse gut microbiota.

 **Online Resource Fig.S7:** Bacterial composition analysis at the phylum level.

 **Online Resource Fig.S8:** Differentially abundant genera at the 12th week in control and β-glucan groups.

 **Online Resource Fig.S9:** Enumeration of Bifidobacterium based on qPCR for HFD group samples at the 12th week.



**Online Resource Table S1: Blood biochemical markers profiling** At the end of 12 weeks, mice were sacrificed using the cardiac puncture method, and blood was drawn using a sterilized syringe and needles. The collected blood samples were sent to ChemOn Inc. for the analysis of different biochemical markers as indicated in the table. AST-aspartate transaminase, ALT-alanine transaminase, ALP- alkaline phosphatase, TBIL- total bilirubin, GLU- blood glucose level, TG-triglyceride, BUN- blood urea nitrogen and CRE- creatinine. (\*-compared to that of control diet; $-compared to that of HFD)