



**Supplementary Figure S1.** Analysis of significant differences in beta diversity of samples between groups. (A) Permanova analysis. The  $R^2$  value represents the degree of explanation for differences among samples from different groups. A larger  $R^2$  value implies that the grouping has a higher

explanatory power for the observed differences. A  $P$  value of less than 0.05 indicates a high level of reliability for the test. (B) Anosim analysis. The closer the  $R$  value is to 1, the higher the difference between groups is than that within groups,  $P$  value less than 0.05 indicates high reliability of the test. Distance matrix: weighted unfrac. DW: fecal samples before deworming treatment; post-DW: fecal samples after deworming treatment.