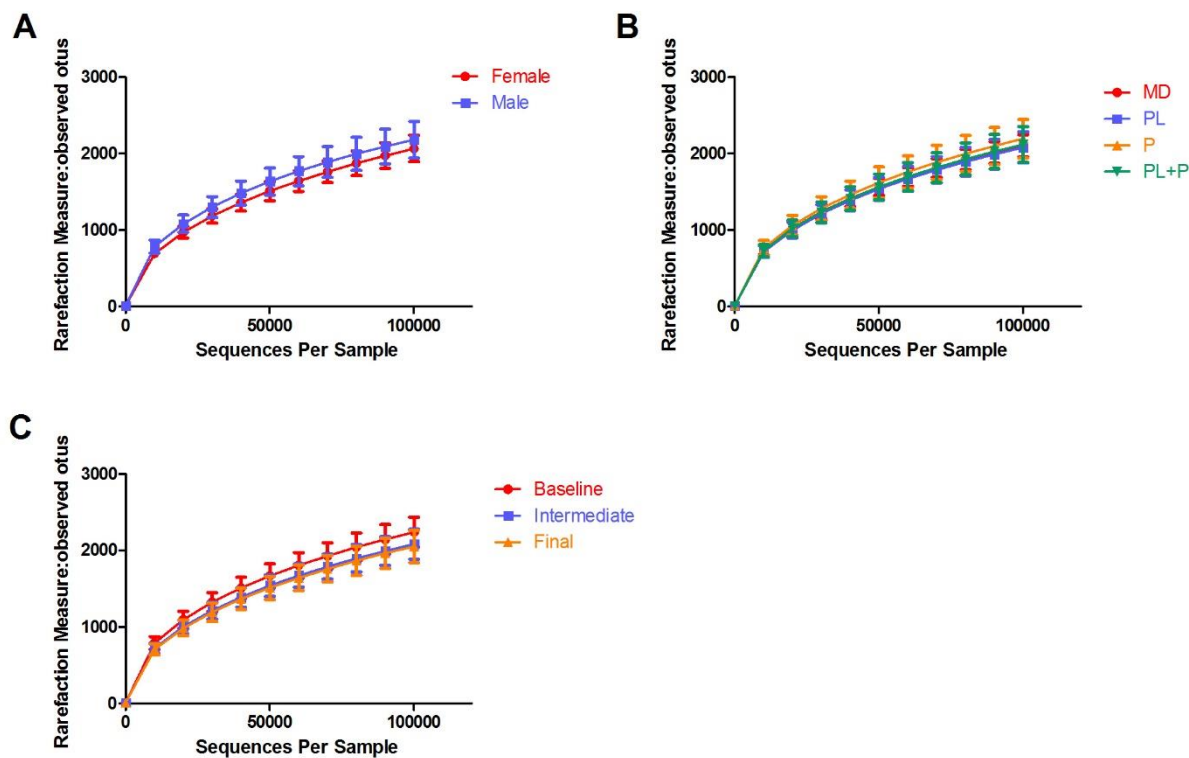


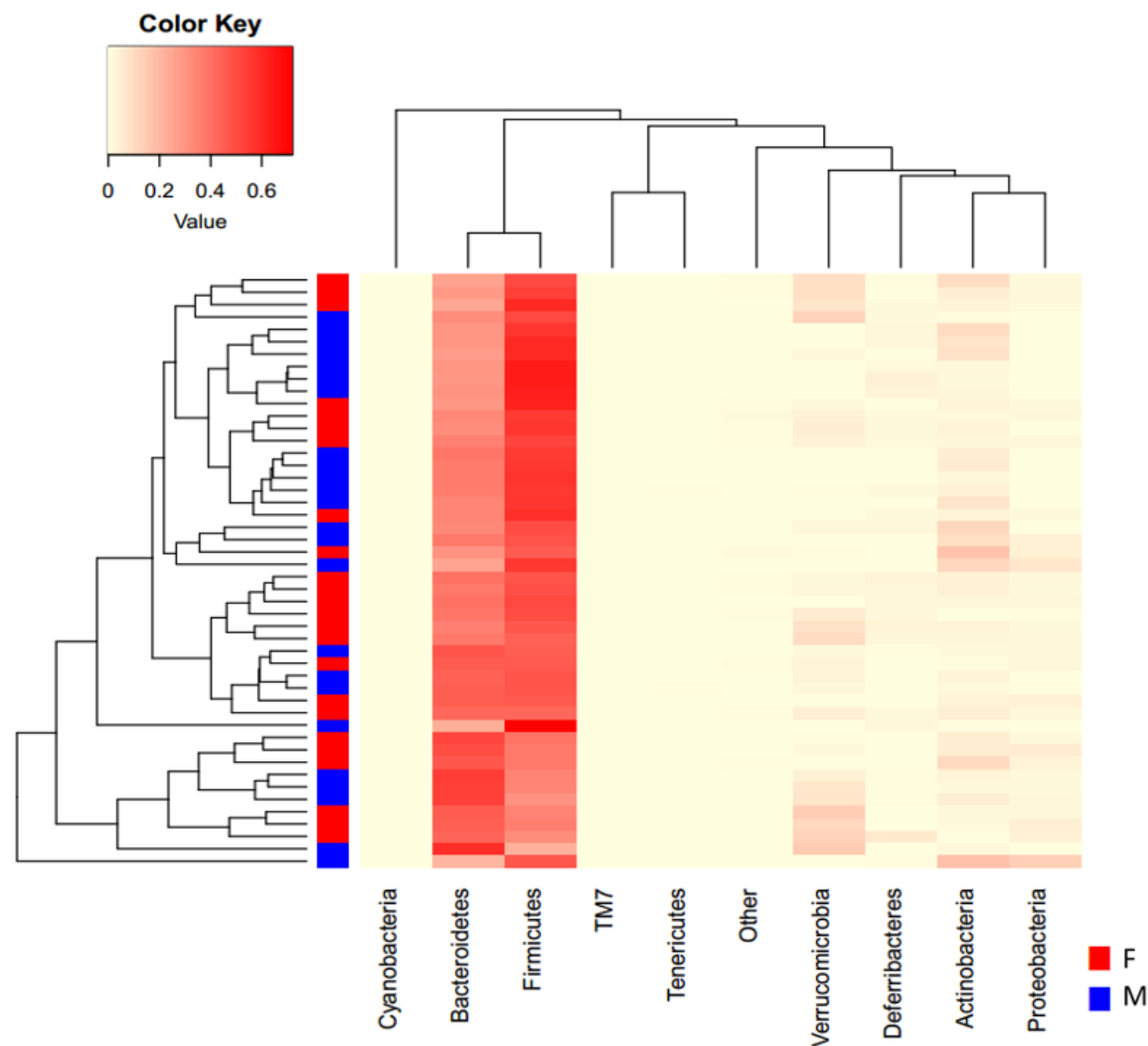
SM Figure

Fig. S1



Rarefaction curves for observed OTUs by sex (a), treatments (b), and time points (c).

Fig. S2



Hierarchical clustering of samples using taxonomic profiles at the phylum level by sex. F, female
M, male

Fig. S3

Color Key

Count 1500

0 0.1 0.2 0.3 0.4

Value

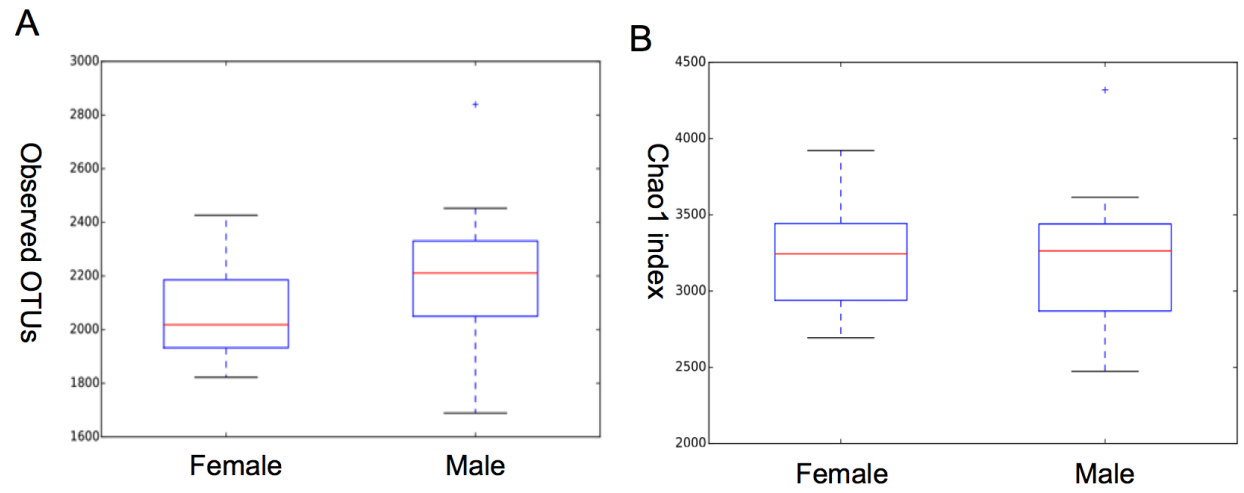
[VS2] [Enterobacteriaceae] Bacteroides [S24-7] [Clostridiaceae] Akkermansia Bifidobacterium Lactobacillus [Rikenellaceae] [Lachnospiraceae] Ruminococcaceae Oscillatopira Moryella [Erysipelothricaceae] Lachnospiraceae Other [Ruminococcus] Coprococcus Ruminococcus Unassigned Parabacteroides Blautia Allobaculum Odoribacter rod-4 Staphylococcus Providencia Butyrivibrio [Enterobacteriaceae] Other Enterobacteriaceae Proteus Enterococcus Serratia Turidibacter Prevotella Clostridium Sutterella Erysipelothricaceae Other Candidatus Arthromitus Coprobacillus Streptococcus [Christensenellaceae] Christensenella Clostridiaceae Other [Peptostreptococcaceae] [Clostridiaceae] Clostridiales Other Adlercreutzia Ruminococcaceae Other Lactococcus [F16] [Peptococcaceae] Dehalobacterium [Mogibacteriaceae] [RF32] [Coriobacteriaceae] Butyrivibrio Anaerostipes Roseburia [RF39]

F

M

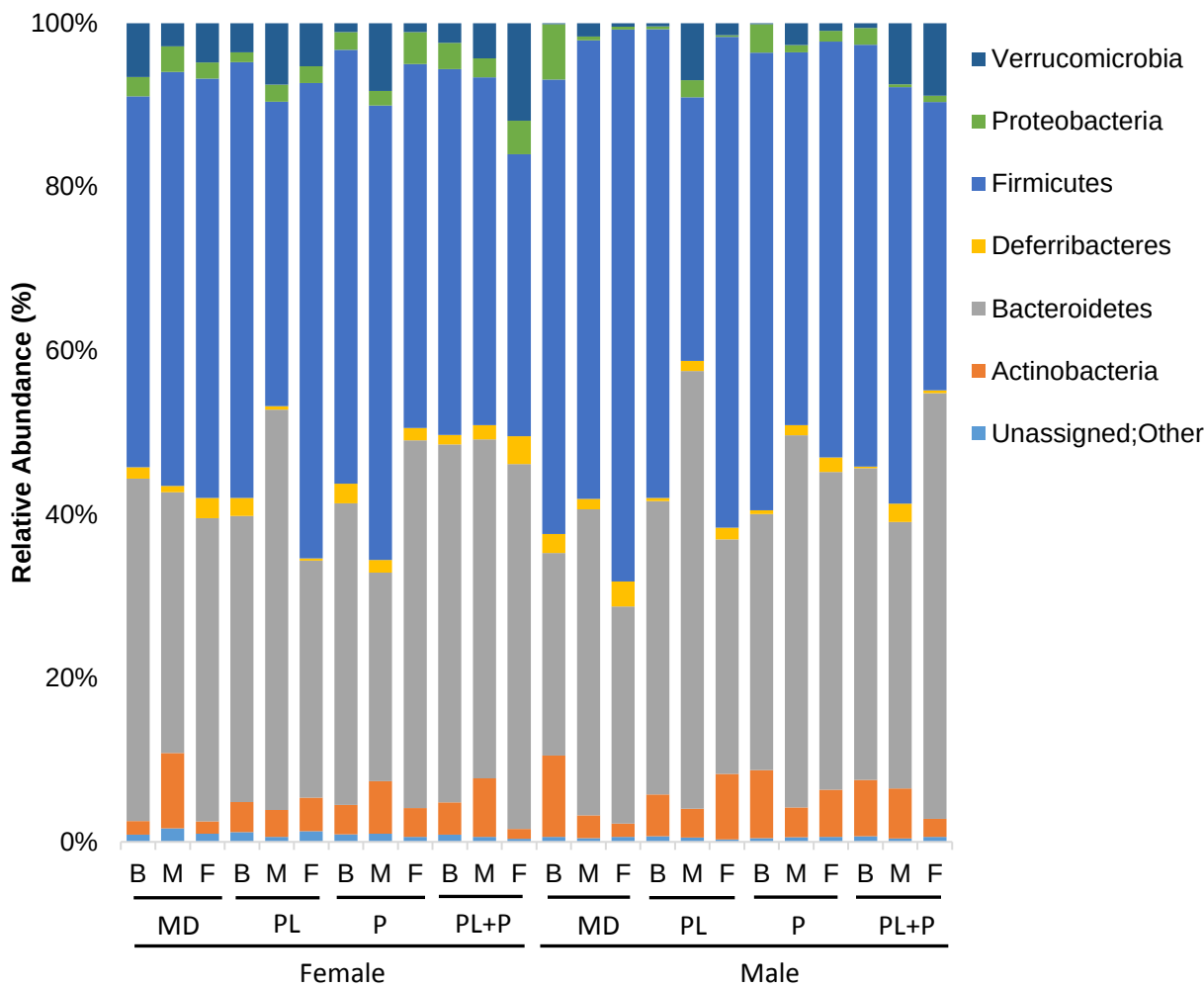
Hierarchical clustering of samples using taxonomic profiles at the genus level by sex. F, female
M, male

Fig. S4



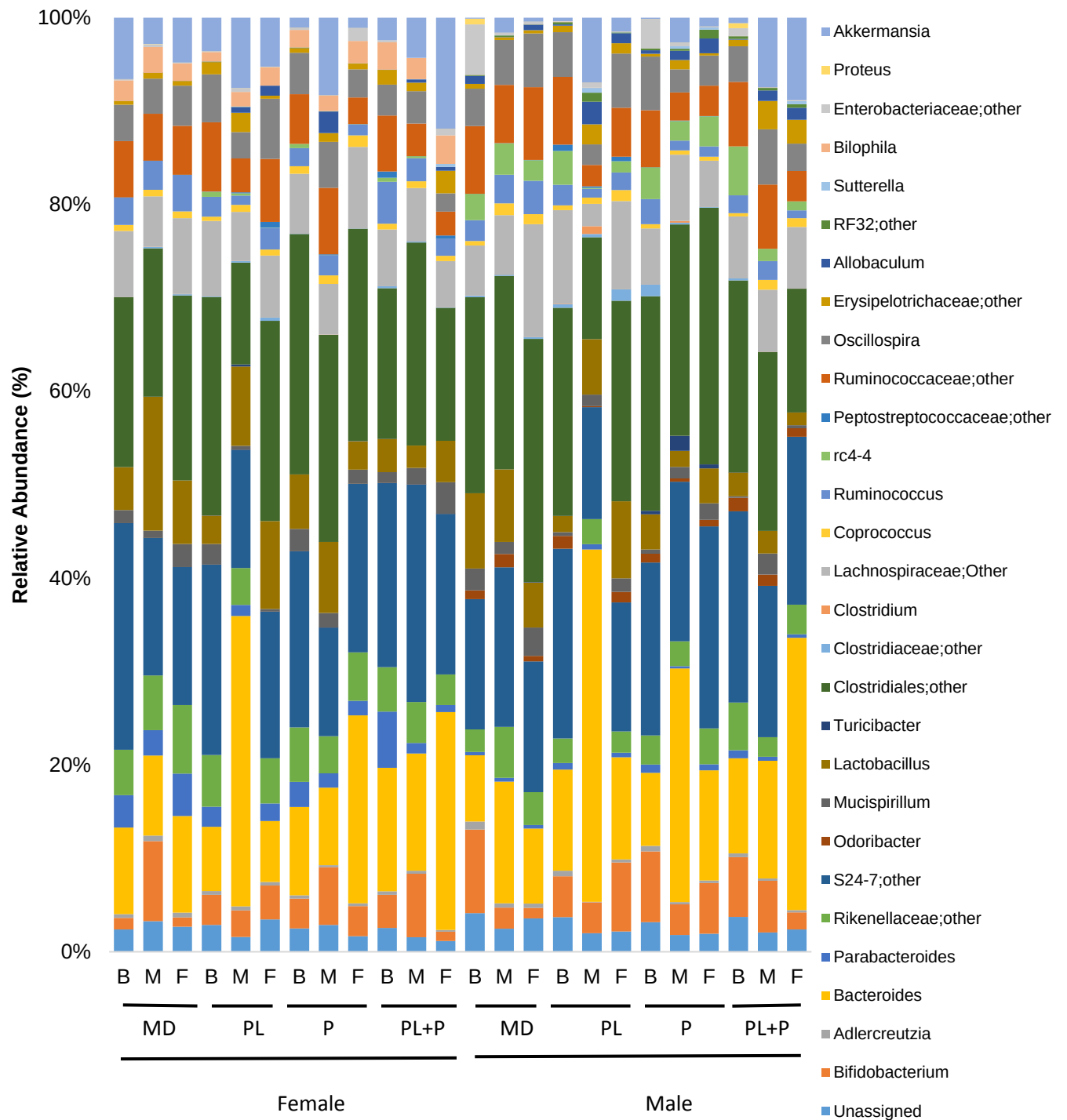
Alpha diversity by sex (a) observed OTUs (b) Chao1 index.

Fig. S5



Relative abundance of bacterial phylum in response to biopolymer treatments by sex. B, baseline M, intermediate F, final MD, maltodextrin PL, ϵ -polylysine P, pectin PL+P, ϵ -polylysine-pectin complexes

Fig. S6



Relative abundance of bacterial genus in response to biopolymer treatments by sex. B, baseline M, intermediate F, final MD, maltodextrin PL, ϵ -polylysine P, pectin PL+P, ϵ -polylysine-pectin complexes