

Table S1. Summary of identified key hub taxa based on SparCC network analysis.

Taxa	Probiotic (Hub Score)			Placebo (Hub Score)		
	V1	V2 (Probiotic)	V3 (Probiotic + OXT)	V1	V2	V3 (OXT)
<i>Roseburia</i>	-	+ (0.9)	-	-	-	-
<i>Streptococcus</i>	-	+ (0.9)	-	-	-	-
<i>Veillonella</i>	-	+ (0.8)	-	-	-	-
<i>Coprococcus 2</i>	-	-	-	-	-	+ (1)
Rikenellaceae	-	-	-	-	-	+ (1)
RC9 gut group	-	-	-	-	-	+ (0.9)
<i>Bilophila</i>	-	-	-	-	-	+ (0.9)
<i>Catenibacterium</i>	-	-	-	-	-	+ (0.8)
<i>Holdemanella</i>	-	-	-	-	-	-
<i>Blautia</i>	-	-	+ (0.8)	-	-	-
<i>Barnesiella</i>	-	-	+ (0.8)	-	-	-
Christensenel- laceae R7	-	-	+ (1)	-	-	-
Lachnospiraceae	-	-	+ (0.8)	-	-	-
UCG-001	-	-	+ (1)	-	-	-
Ruminococcaceae	-	-	-	-	-	-
UCG-002	-	-	-	-	-	-

“+” marks that a taxon of interest (hub score>0.8) is found within the top 10 hub taxa at the given study visit and experimental group; “-” marks not found. The provided value is the hub score (the cut off score is 0.8).