	Placebo		Low dose group		High dose group	
	Baseline	4 weeks	Baseline	4 weeks	Baseline	4 weeks
Blautia	0.0786±0.0317	0.0947±0.0149[a]	0.0867±0.3230	0.0572±0.0214	0.0918±0.0394	0.0946±0.0328
Dialister	0.0312±0.0765	0.0590±0.1202	0.0199±0.0011	0.0563±0.0076	0.0191±0.0017	0.0437±0.0025
Subdoligranulum	0.0765±0.0717	0.0843±0.1086	0.0644±0.0649	0.0660±0.0035	0.0833±0.0252	0.0667±0.0246
Bifidobacterium	0.1045±0.0654	0.0846±0.0668	0.0771±0.0299	0.0681±0.0295	0.0984±0.0674	0.0751±0.1016
Prevotella	0.0420±0.0489	0.0534±0.0666	0.0354±0.0301	0.0496±0.0865	0.0375±0.0317	0.0379±0.0829
Megamonas	0.0069±0.0670	0.0069±0.0015[b]	0.0022±0.0092	0.0195±0.0643	0.0094±0.0362	0.0361±0.0936
Collinsella	0.0508±0.0052	0.0228±0.0863	0.0420±0.0149	0.0277±0.0106	0.0303±0.0152	0.0301±0.0332
Bacteroides	0.0396±0.0409	0.0555±0.0912[a]	0.0563±0.0507	0.1111±0.0570	0.0684±0.0919	0.0958±0.0461
Escherichia-Shigella	0.0424±0.0708	0.0302±0.0920[ab]	0.0425±0.0793	0.0194±0.0914	0.0408±0.0958	0.0231±0.0902
Faecalibacterium	0.0370±0.0685	0.0354±0.0523	0.0477±0.0805	0.0663±0.0666	0.0362±0.0086	0.0335±0.0709

Supplementary Table 5. Mean relative abundance of top 10 different taxa at genus level

Data expressed as mean±standard deviations. The mean relative abundance of different taxa at genus level were analyzed among three groups at baseline and the end of intervention using one-way analysis of variance or the Kruskal–Wallis H-test, and the Benjamin–Krieger–Yekutieli method was used to adjust P values for pairwise comparisons. [a] Significant difference between the low-dose and the placebo groups; [b] Significant difference between the high-dose and the placebo groups.