**SUPPLEMENTARY MATERIAL**

**Figure S1.** Boxplot of α-diversity in stool samples at the ASV level according to the Shannon index.



Red boxplot: Probiotic group, baseline. Orange boxplot: Probiotic group, week 24. Green boxplot: Placebo group, baseline. Blue boxplot: Placebo group, week 24.

**Figure S2.** Bacterial profiles of faecal samples from study groups at phylum level.



LCBD: Local contribution to beta‐diversity.

**Figure S3.** Bacterial profiles of faecal samples from study groups at family level.



LCBD: Local contribution to beta‐diversity.

**Figure S4.** Boxplot of α-diversity in skin samples at the ASV level according to the Shannon index.



Red boxplot: Probiotic group, baseline. Orange boxplot: Probiotic group, week 24. Green boxplot: Placebo group, baseline. Blue boxplot: Placebo group, week 24.

**Figure S5.** Bacterial profiles of skin samples from study groups at phylum level.



LCBD: Local contribution to beta‐diversity.

**Figure S6.** Bacterial profiles of skin samples from study groups at family level.



LCBD: Local contribution to beta‐diversity.