**Legends for supplementary materials:**

**Supplemental Figure S1:** Forest plot (A), sensitivity analysis (B), scatter plot (C), and funnel plot (D) of the causal effect of *Defluviitaleaceae\_UCG-011*on PsA risk.



**Supplemental Figure S2:** Forest plot (A), sensitivity analysis (B), scatter plot (C), and funnel plot (D) of the causal effect of *Eubacterium\_fissicatena\_group* on PsA risk.

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**Supplemental Figure S3:** Forest plot (A), sensitivity analysis (B), scatter plot (C), and funnel plot (D) of the causal effect of *Family\_XIII\_AD3011\_group* on PsA risk.

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**Supplemental Figure S4:** Forest plot (A), sensitivity analysis (B), scatter plot (C), and funnel plot (D) of the causal effect of *Fusicatenibacter* on PsA risk.

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**Supplemental Figure S5:** Forest plot (A), sensitivity analysis (B), scatter plot (C), and funnel plot (D) of the causal effect of *Methanobrevibacter* on PsA risk.



**Supplemental Figure S6:** Forest plot (A), sensitivity analysis (B), scatter plot (C), and funnel plot (D) of the causal effect of *Butyricicoccus* on PsA risk.

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**Supplemental Figure S7:** Forest plot (A), sensitivity analysis (B), scatter plot (C), and funnel plot (D) of the causal effect of *Christensenellaceae\_R-7\_group* on PsA risk.

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**Supplemental Figure S8:** Forest plot (A), sensitivity analysis (B), scatter plot (C), and funnel plot (D) of the causal effect of *Oscillospira* on PsA risk.

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**Supplemental Figure S9:** Forest plot (A), sensitivity analysis (B), scatter plot (C), and funnel plot (D) of the causal effect of *Ruminococcaceae\_UCG-002* on PsA risk.

