

1 **Supplementary material**

2 **Supplementary Figures**

3 **Fig. S1 Effects of *B. adolescentis* on serum anti-CII IgG2a.** Values were expressed as mean ± SEM.

4 (n=6 each group).

5 **Fig. S2 An example to illustrate the gating strategy for Tregs in MLNs.** The top left panel represented

6 gating lymphocytes from MLNs, top right panel showed the gating of CD4⁺ T cells, below panel

7 identified Tregs (CD4⁺ CD25⁺ Foxp3⁺) gating on CD25⁺ T and Foxp3⁺ cells. Numbers in quadrants

8 indicated percentage.

9 **Fig. S3 Effects of *B. adolescentis* on the gut microbiota.** Alpha-diversity indicated by faith_pd (A) and

10 observed_otus (B). The differences in beta-diversity were calculated by analysis of

11 similarity (ANOSIM) tests amongst all groups (C), and BA+CIA and CIA+BA (D). (E) The OTUs

12 number of bacterial phyla. (F)The distribution of Actinobacteria. (** $p < 0.01$, Kruskal-Wallis test with

13 Dunn's multiple comparisons). The box-and-whisker plots represent the median and interquartile range.

14 The whiskers extend above and below the box to show the maximum and minimum values. Outliers are

15 represented by red dots. (n=6 each group).

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