

## SUPPLEMENTAL FIGURE LEGENDS

**Supplementary Figure 1** (A) Lean mass monitoring at 0, 12 and 24 weeks after starting the HFD. (B) Percentage and (C) Total numbers of AT macrophages isolated from epididymal SVF after 24 weeks of HFD. (D) TNF- $\alpha$  secretion assay of overnight cultured total epididymal AT SVF. (E) HOMA-IR index performed after overnight fasting of 13 weeks HFD-fed mice. (F) Transit time of mice after 24 weeks of HFD (N=7 to 9 mice per group). (G) Mean of feces production monitored for one week after 12-weeks of HFD. (H) Volume of O<sub>2</sub> consumption (I) CO<sub>2</sub> produced and (J) (K) ambulatory movements of individually-housed mice in metabolic cages monitored for 5 days after 12-weeks of HFD (N=6 mice per group).

**Supplementary Figure 2** (A) Gating strategy to target conventional DCs (cDCs) subpopulations in the intestine. (B) Fecal albumin levels of 24weeks of HFD-fed mice. (C) (E) Percentages of total dendritic cells (totDCs) after surface staining of cells in the SILP (C) or in the CLP (E) after 24 weeks of HFD (N=11 to 13 mice per group). (D) (F) Total numbers of total dendritic cells (totDCs) after surface staining of cells in the SILP (D) or in the CLP (F) after 24 weeks of HFD (N=11 to 13 mice per group). (G) (I) Percentages of intestinal macrophages after surface staining of cells in the SILP (G) or in the CLP (I) after 24 weeks of HFD. (H) (J) Total numbers of intestinal macrophages after surface staining of cells in the SILP (H) or in the CLP (J) after 24 weeks of HFD.

**Supplementary Figure 3** (A) Circle graphs representing the mean proportions of conventional DCs subpopulations in the mLNs after 24 weeks of CCD or HFD and the related dot plot representing CD103<sup>+</sup> CD11b<sup>+</sup> cDC. (B) Network diagram of DC maturation genes differentially expressed in DC<sup>hBcl-2</sup> mice relatively to WT mice, with corresponding predictive signaling pathways impacted using Ingenuity Pathway Analysis (IPA, Qiagen, Courtabœuf, France). The red or green colors indicate the degree of respective up-regulation or down-regulation in gene expression compared with housekeeping gene expression. The orange and the blue colors

indicate the respective predictive degree of up-regulation or down-regulation in gene expression involved in these pathways. (C) Identification by FACS of the RALDH activity, i.e. aldefluor<sup>+</sup> (ALD<sup>+</sup>) cells with or without the DEAB reagent (specific inhibitor for RALDH) in the CD103<sup>+</sup> CD11b<sup>+</sup> cDC subpopulations from the mLNs after 24 weeks of diet. (D) Percentages of ALD<sup>+</sup> cells among CD103<sup>+</sup> CD11b<sup>+</sup> cDCs in the mLNs of mice after 24 weeks of CCD. (E) Total numbers of CD103<sup>+</sup> CD11b<sup>+</sup> ALD<sup>+</sup> cDCs in the mLNs of mice after 24 weeks of HFD. (F) Total numbers of (F) ALD<sup>+</sup> DCs or (G) ALD<sup>+</sup> monocytes/macrophages in the CLP of mice after 24 weeks of diet.

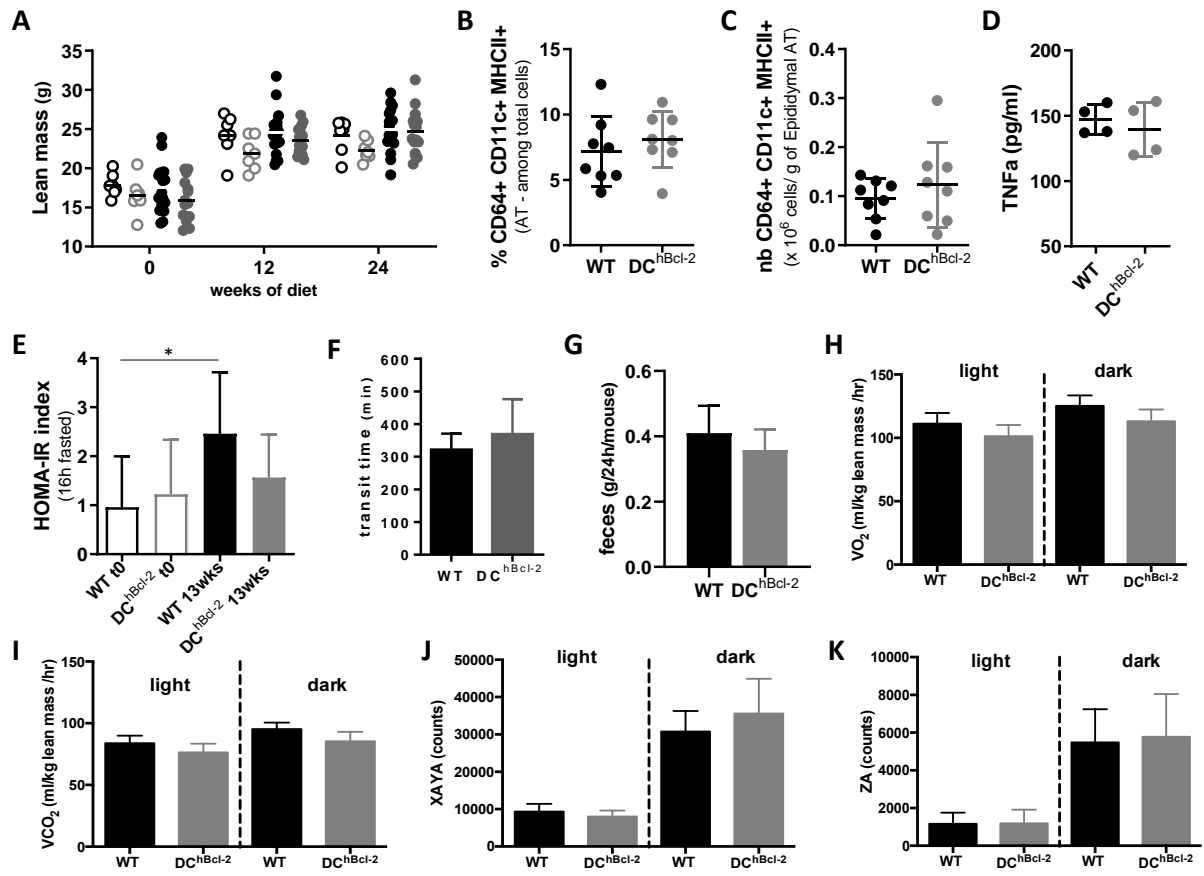
**Supplementary Figure 4** All the data are representative of HFD-fed mice for 24 weeks. (A) Proportions of CD3<sup>+</sup> CD4<sup>+</sup> T lymphocytes or (B) CD3<sup>+</sup> CD8a<sup>+</sup> T lymphocytes or (C) CD3<sup>+</sup> CD19<sup>+</sup> B lymphocytes after surface staining of cells isolated from the mLNs (N=4 to 5 mice per group). (D) Percentage of CD4<sup>+</sup> IL-17<sup>+</sup> T lymphocytes or (E) total numbers of IL-17-producing CD4<sup>+</sup> T (Th17) cells or (F) CD4<sup>+</sup> Foxp3<sup>+</sup> T (Treg) cells after intracellular staining of cells isolated from the mLNs. (G) Circle graphs representing the mean proportions of IFN $\gamma$ -producing, IL-17-producing, IL-10-producing CD4<sup>+</sup> T cells in the SILP after intracellular staining of cytokines. (H) Total numbers of CD19<sup>+</sup> IgA<sup>+</sup> plasmablasts after surface staining of cells isolated from the SILP.

**Supplementary Figure 5** (A) Weight, (B) fat mass and (C) lean mass of single housed (dots) versus cohoused (squares) WT and DC<sup>hBcl-2</sup> mice after 24 weeks of HFD. (D) HOMA-IR index of single (dots) versus cohoused (squares) WT and DC<sup>hBcl-2</sup> mice after 14 weeks of HFD. (E) Fecal transplantation scheme from 24-weeks of HFD-fed donors into 8-weeks old GF recipients immediately submitted to HFD for 24 weeks. Recipients from WT donor are referred to as the FT-WT group, the recipients from DChBcl-2 are referred to as FT-DChBcl-2 (n = 12 mice per group). (F) Lean mass gain monitoring of recipients (FT)-mice at day 0, 12 weeks and 24 weeks after both fecal transplantation and starting the HFD. (G) Total short chain fatty acids (SCFA)

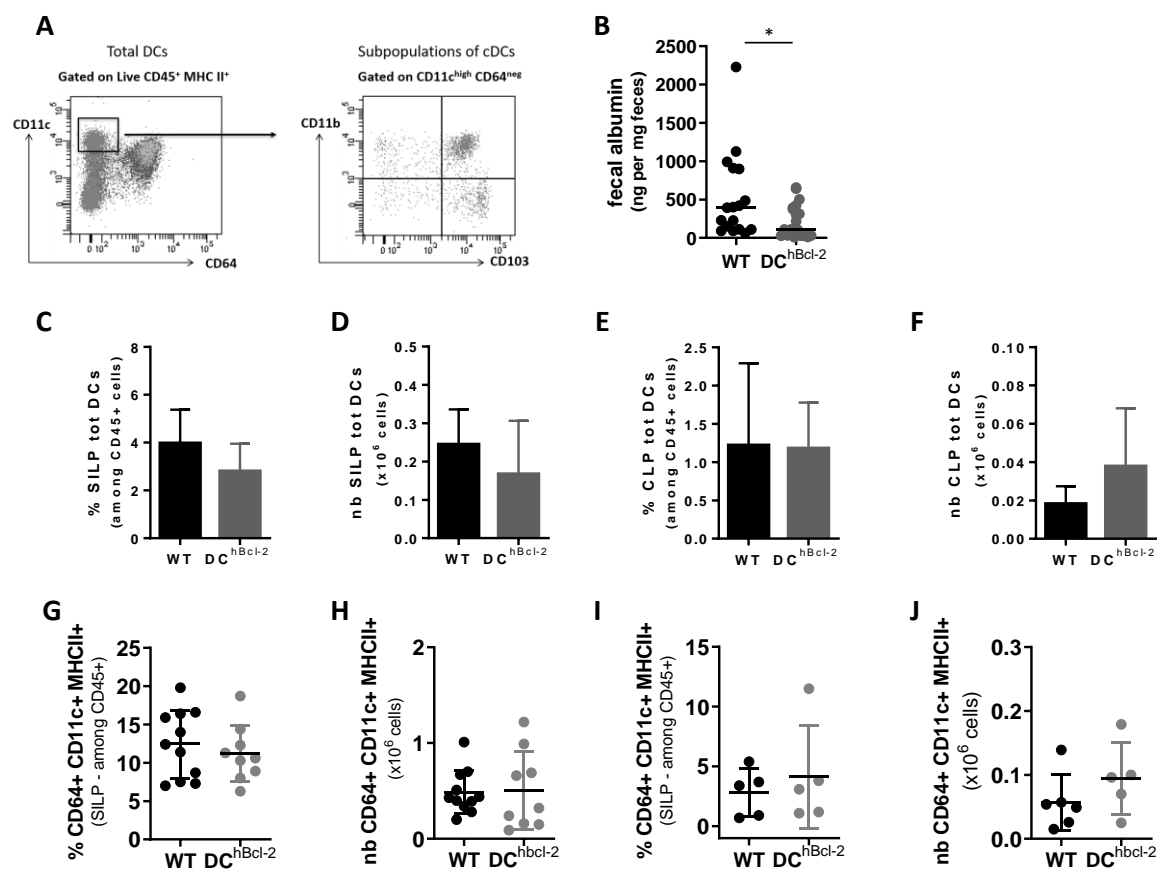
concentration in the feces of FT-mice 24-weeks after both fecal transplantation and starting the HFD.

SUPPLEMENTARY FIGURES

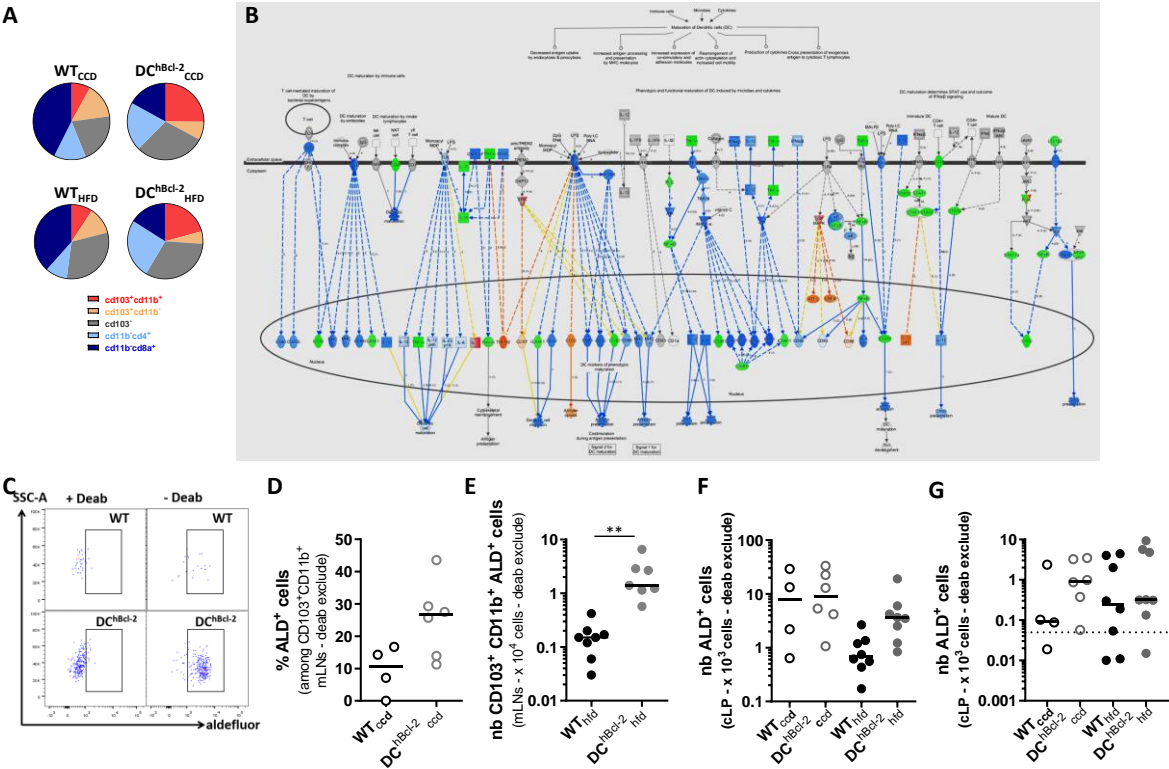
Supp. Fig.1



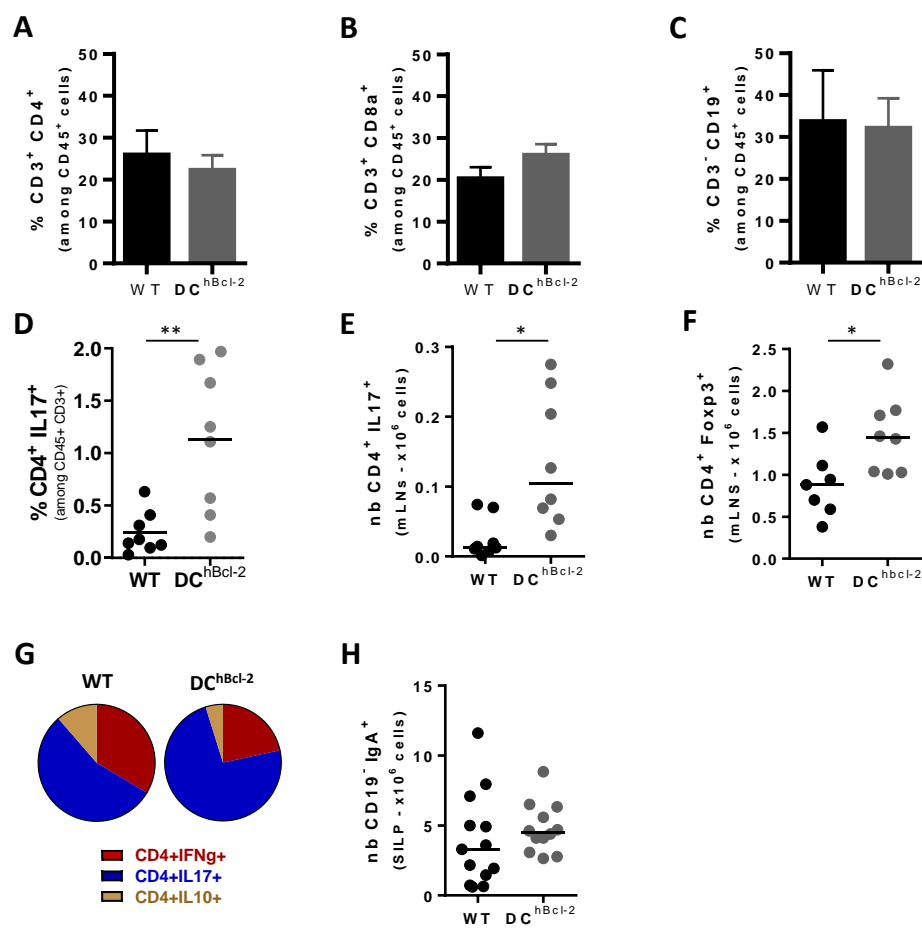
**Supp. Fig.2**



Supp. Fig.3



Supp. Fig.4



Supp. Fig.5

