Colonic inflammation triggers β-cell proliferation during obesity development via a liver-to-pancreas inter-organ mechanism

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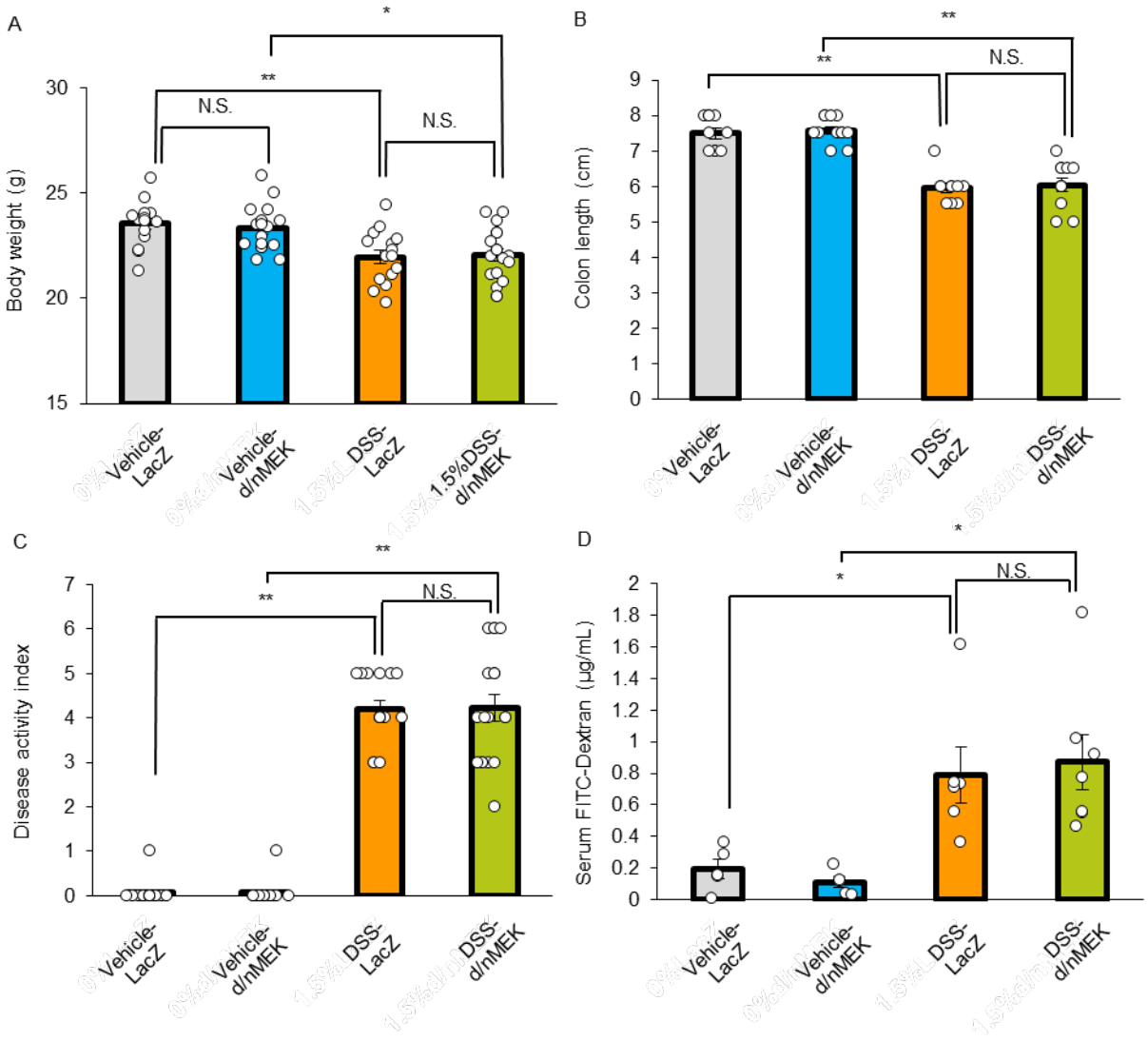


Supplemental Figure 1

Administration of d/nMEK adenovirus neither suppressed colonic inflammation nor intestinal barrier disruption in DSS-mice

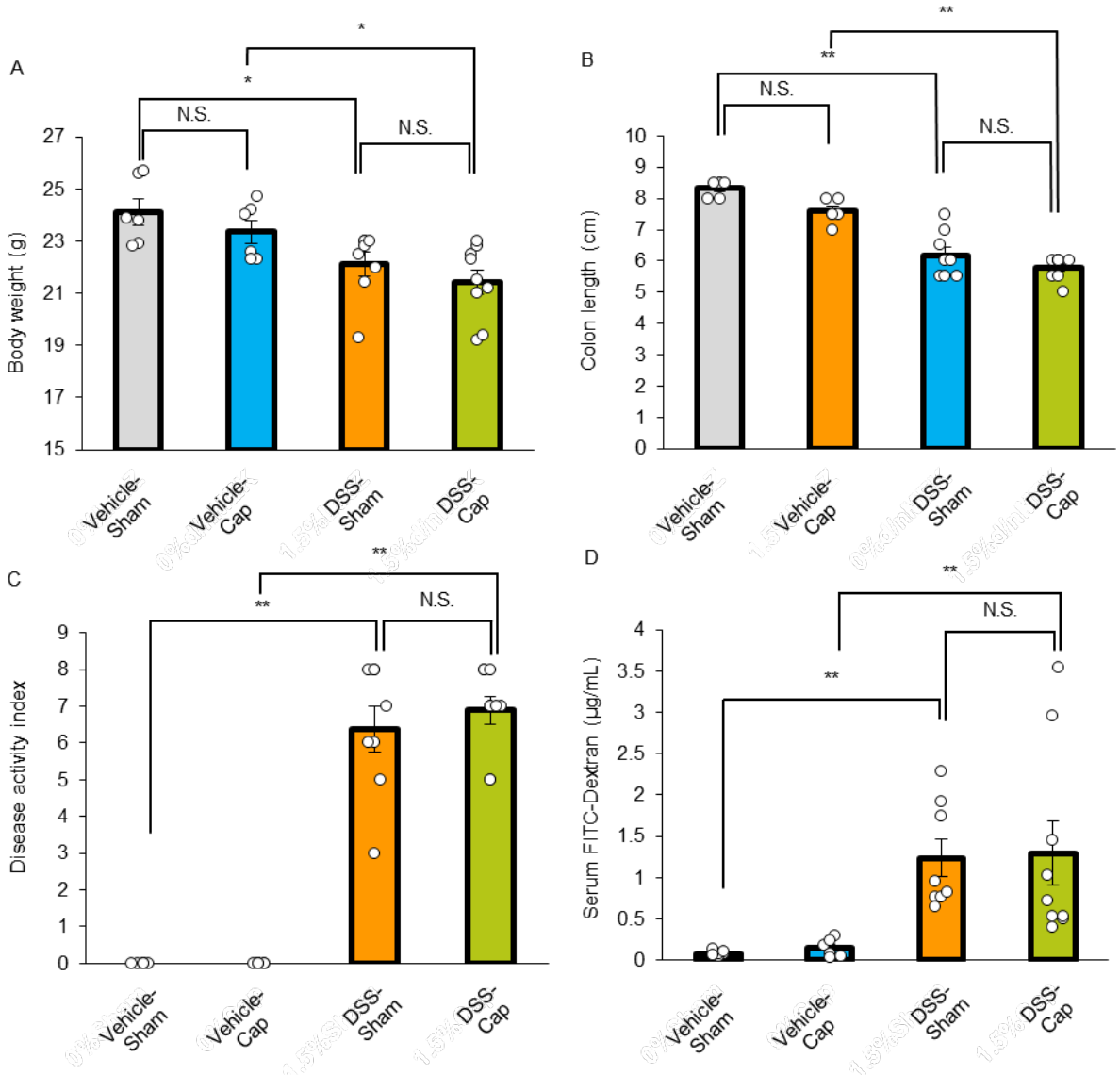
(A) Body weights at day 7 of the four experimental groups treated with 0% or 1.5% dextran sulfate sodium (DSS) and adenovirus administration (LacZ or dominant negative MEK(d/nMEK)); 0% DSS-LacZ (Vehicle-LacZ), 0% DSS-d/nMEK (Vehicle-d/nMEK), 1.5%DSS-LacZ (DSS-LacZ) and 1.5%DSS-d/nMEK (DSS-d/nMEK). (n = 15/18/20/23 per group, respectively, and the order is the same hereafter).

(B) Colonic lengths of each of the experimental groups are shown (n = 10/12/10/12 per group).

(C) Disease activity indexes are shown for each experimental group (n = 15/15/15/18 per group)

(D) Serum fluorescein isothiocyanate dextran (FITC)-Dextran levels (40 kDa) after administration to mice in each experimental group are shown (n = 5/5/6/7 per group).

Data are presented as means ± SEM. *P < 0.05, **P < 0.01 as assessed by one-way ANOVA, followed by Tukey's HSD post hoc test. N.S.; no significant



Supplemental Figure 2

Capsaicin treatment neither suppressed colonic inflammation nor intestinal barrier disruption in DSS-mice

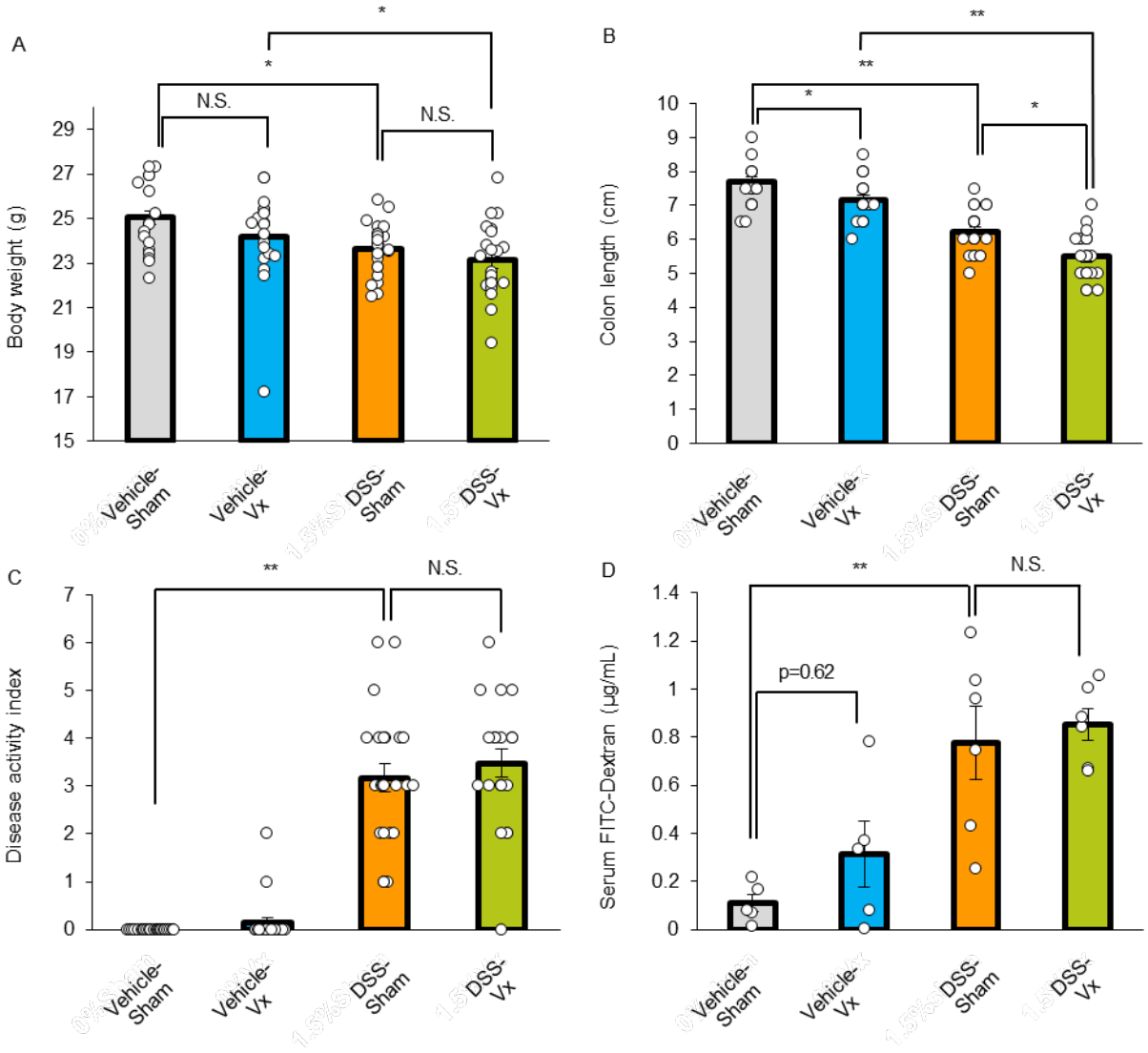
(A) Body weights at day 7 in the four experimental groups treated with 0% or 1.5% dextran sulfate sodium (DSS) and sham operation or capsaicin treatment conducted one week before DSS-treatment; 0% DSS-sham operation (Vehicle-Sham), 0% DSS-capsaicin (Vehicle-Cap), 1.5%DSS-sham operation (DSS-Sham) and 1.5%DSS-capsaicin (DSS-Cap) (n = 6/6/8/9 per group, respectively, and the order is the same hereafter).

(B) Colonic lengths of each of the experimental groups are shown (n = 6/6/8/9 per group).

(C) Disease activity indexes are shown for each experimental group (n = 6/6/8/9 per group)

(D) Serum fluorescein isothiocyanate dextran (FITC)-Dextran levels (40 kDa) after administration to mice in each experimental group are shown (n = 6/6/8/9 per group).

Data are presented as means ± SEM. *P < 0.05, **P < 0.01 as assessed by one-way ANOVA, followed by Tukey's HSD post hoc test. N.S.; no significant



Supplemental Figure 3

Subdiaphragmatic vagotomy neither suppressed colonic inflammation nor intestinal barrier disruption in DSS-mice

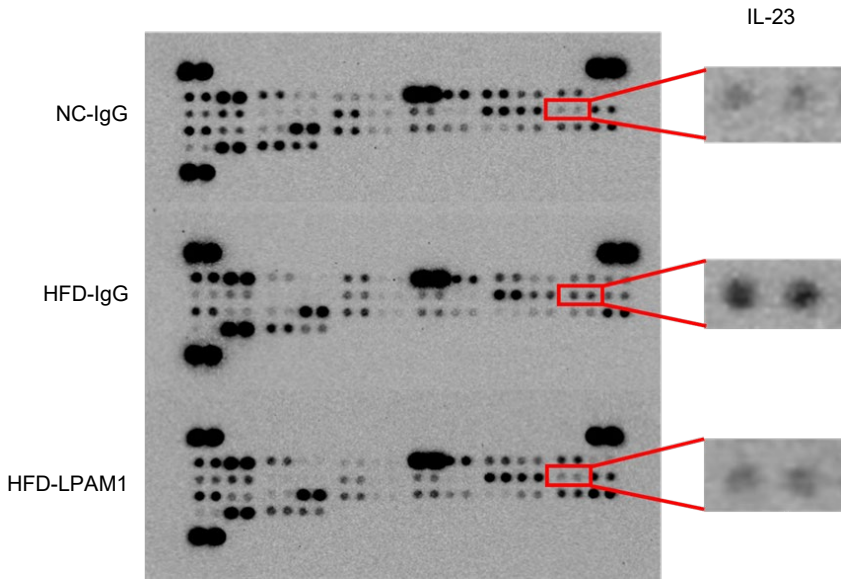
(A) Body weights at day 7 in the four experimental groups treated with 0% or 1.5% dextran sulfate sodium (DSS) and sham operation or vagotomy conducted one week before DSS-treatment; 0% DSS-sham operation (Vehicle-Sham), 0% DSS-vagotomy (Vehicle-Vx), 1.5%DSS-sham operation (DSS-Sham) and 1.5%DSS-vagotomy (DSS-Vx) (n = 23/20/23/21 per group, respectively, and the order is the same hereafter).

(B) Colonic lengths of each of the experimental groups are shown (n = 23/20/23/21 per group).

(C) Disease activity indexes are shown for each experimental group (n = 23/20/23/21 per group)

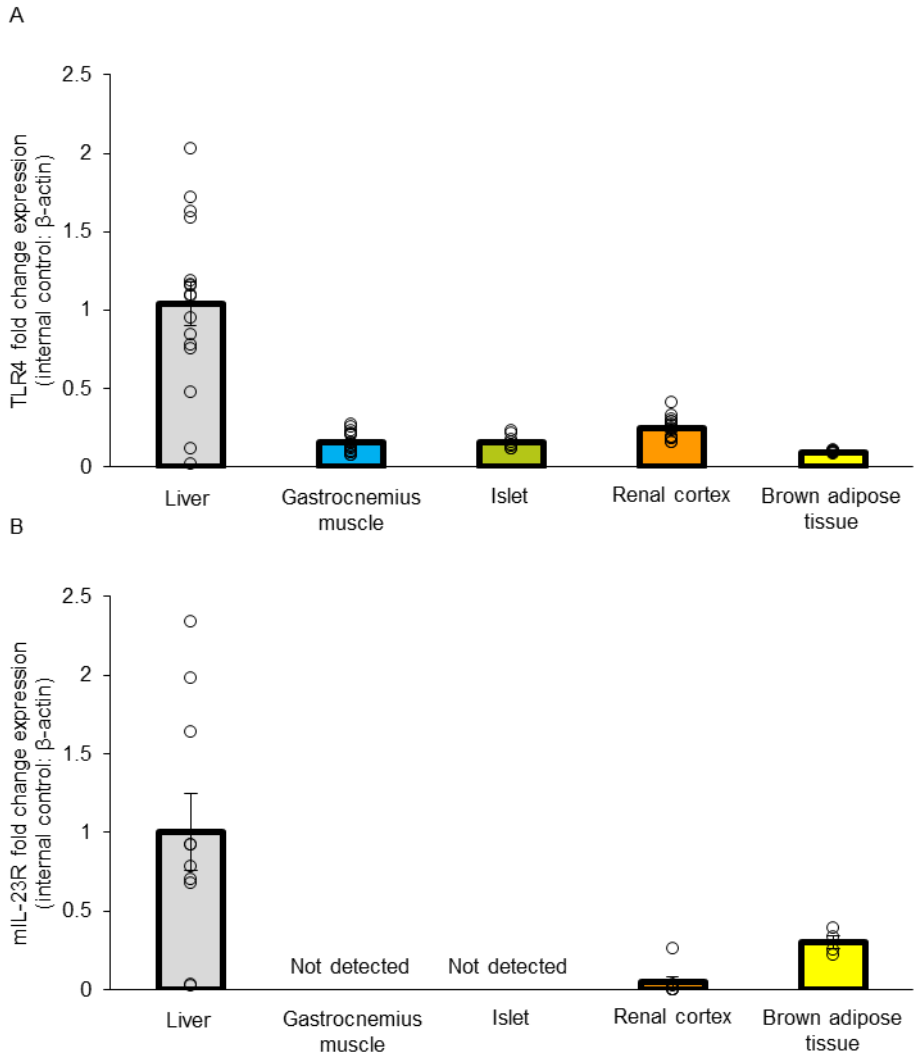
(D) Serum fluorescein isothiocyanate dextran (FITC)-Dextran levels (40 kDa) after administration to mice in each experimental group are shown (n = 5/5/7/7 per group).

Data are presented as means ± SEM. *P < 0.05, **P < 0.01 as assessed by one-way ANOVA, followed by Tukey's HSD post hoc test. N.S.; no significant



Supplemental Figure 4

Cytokine arrays using portal vein blood samples of NC-IgG-, HFD-IgG- and HFD-LPAM1- mice.



Supplemental Figure 5

The relative expressions of *TLR4* (A) and *mIL-23R* (B) in the liver, the gastrocnemius muscle, pancreatic islets, the renal cortex and brown adipose tissues of mice. A: n=16/16/8/16/8, B; n=10/8/8/7/4, respectively. The data indicate relative expressions (mean expression in the liver, i.e., the control, was defined as 1.0).