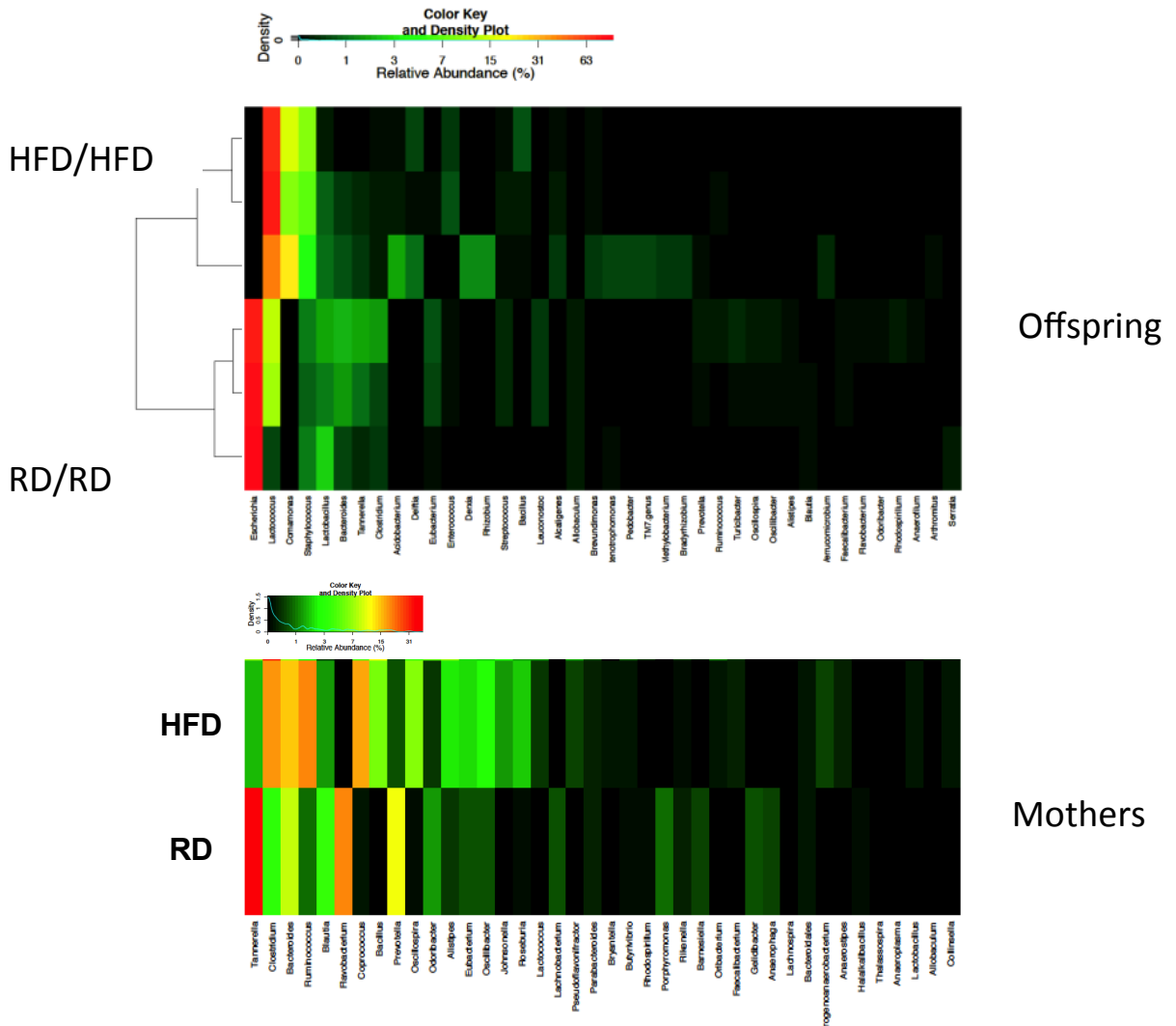
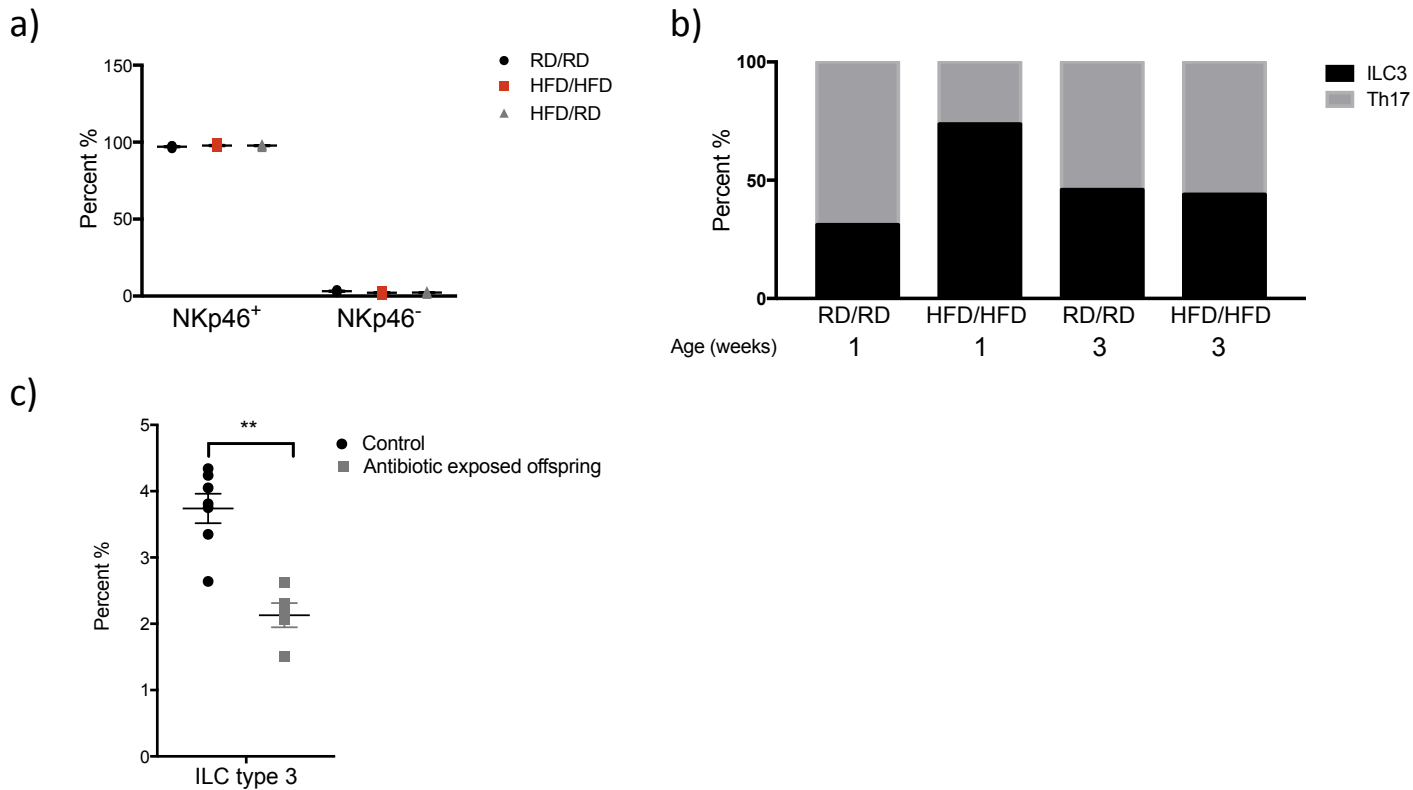


Supplementary Figures and Figure legends:

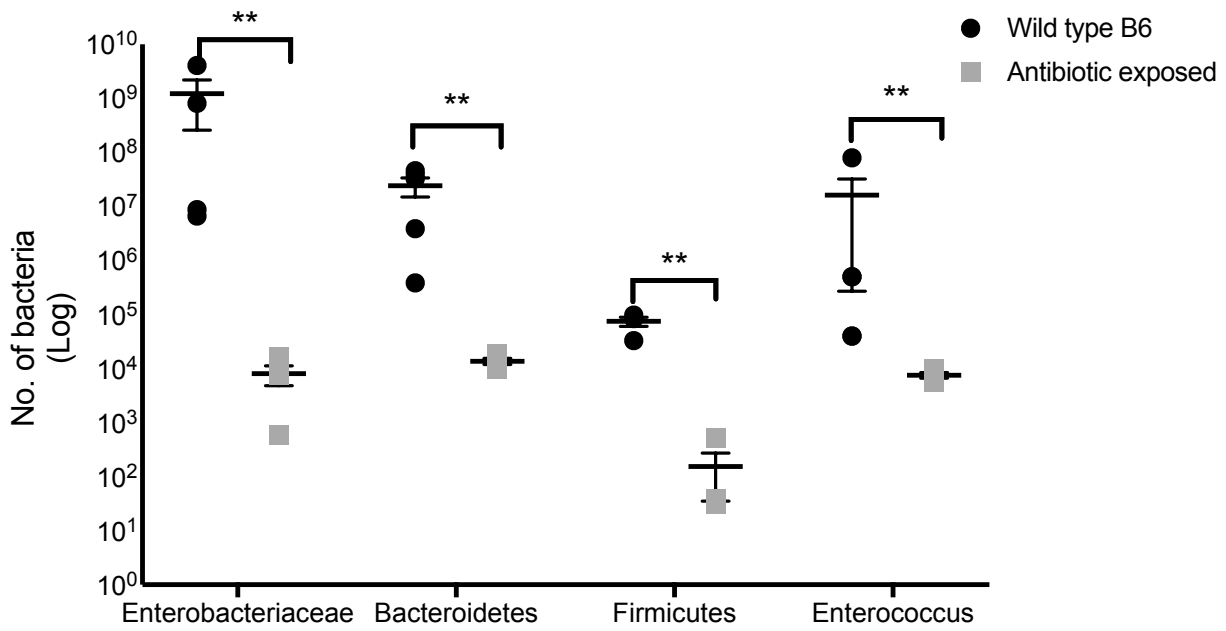
a)



Supplementary Figure 1: Heatmap of the relative abundance of the most dominant genera in the fecal colonic contents of female C57BL/6 mice and their offspring as determined by genomic DNA analysis by next generation sequencing. The top panel is representative of three 2-week-old mice in either HFD/HFD (above) or RD/RD (below) groups. Maternal microbiota is shown in the bottom panel representative of one HFD mother (top) and one RD mother (bottom). RD/RD represent regular diet offspring cross-fostered to RD mothers at birth. HFD/HFD represents high fat diet offspring cross-fostered to HFD mothers at birth.



Supplementary Figure 2: **Majority of ILC3 present in neonatal mice are NKp46⁺.** (a) Flow cytometric analysis of LP cells from 2-week-old RD/RD, HFD/HFD and HFD/RD offspring was performed and the percent of ILC3s present that are NKp46⁺ and NKp46⁻ cells shown. (b) Proportion of IL17 positive cells that are Th17 and ILC3 is shown in 1-week and 3-week RD/RD and HFD/HFD offspring. (c) HFD/HFD offspring were exposed antibiotics through their dams at birth and at 2-weeks old the lamina propria was examined by flow cytometry for the presence of ILC3s. The percent of ILC3s in control and antibiotic exposed HFD/HFD offspring is shown. RD/RD represent regular diet offspring cross-fostered to RD mothers at birth. HFD/HFD represents high fat diet offspring cross-fostered to HFD mothers at birth. HFD/RD represents HFD offspring cross-fostered to RD mothers at birth. These data are representative of at least 3 independent experiments each involving 5-8 mice per group.



Supplementary Figure 3: Quantification of Enterobacteriaceae, Bacteroidetes, Firmicutes and Enterococcus (log scale) in colonic contents of 2-week-old naïve and antibiotic exposed mice by qRT-PCR. The data shows suppression of all groups in the antibiotic exposed mice. The data shown are representative of 3 experiments with 4-6 mice in each group. Data are depicted as mean \pm SEM with ** $p < 0.01$ according to 2-tailed student's t-test.