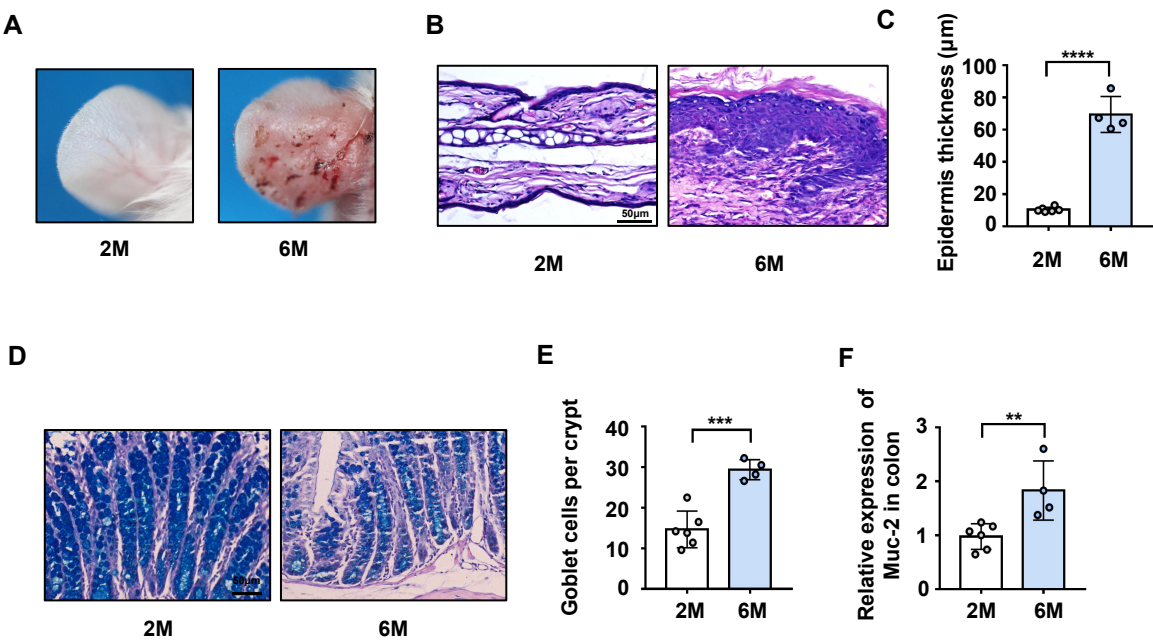
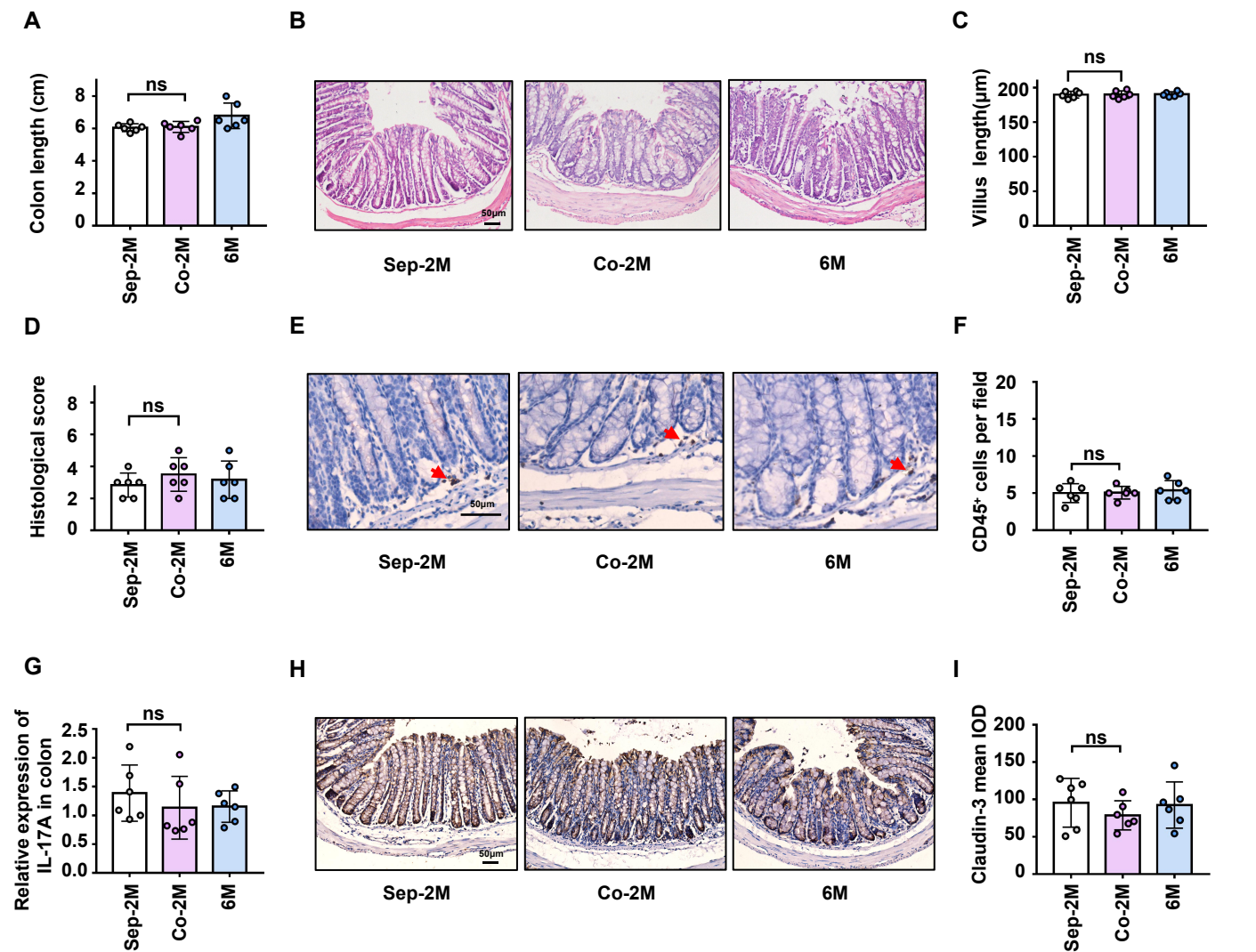


sFigure 1: The severity of psoriasis-like phenotype was companied with the changes of intestinal microorganisms in 2M and 6M mice



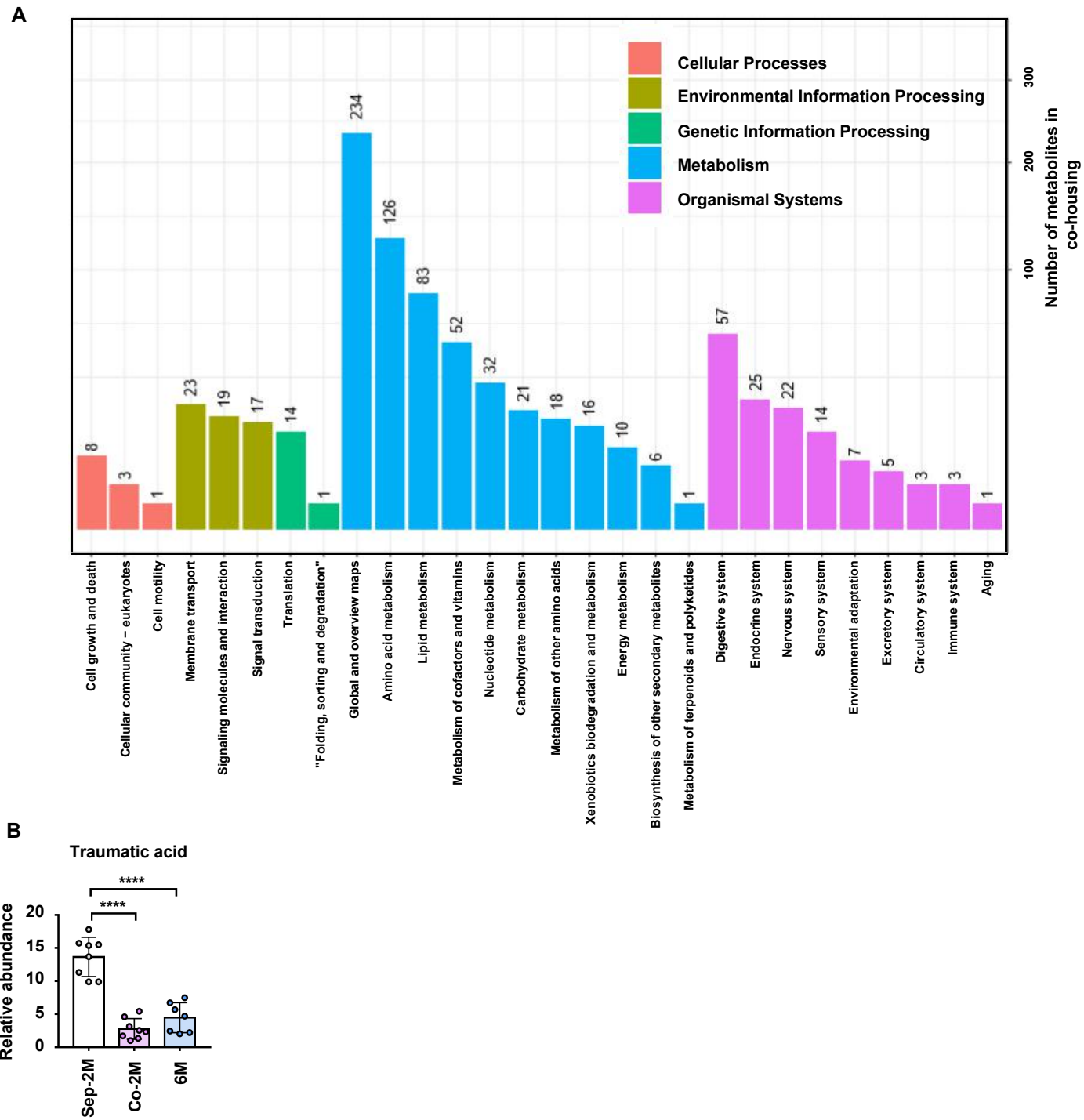
A. Macroscopic characteristics of the ears in 2M and 6M mice. B. Representative H&E staining of ears of 2M and 6M mice. (Scale bars: 50 μ m). C. Average epidermal thickness. D. Representative AB-PAS staining of colons of 2M and 6M mice. (Scale bars: 50 μ m). E. Quantitation of average goblet cells per crypt. F. Relative expression levels of Muc-2 in the colon of 2M and 6M mice. Data presented as mean $\pm$ SEM on relevant graphs. * $p \leq 0.05$; * * $p \leq 0.01$; * * * $p \leq 0.005$ (Mann-Whitney test, two-tailed)

sFigure 2: Co-housing with 6M K14-VEGF mice aggravated the psoriasis-like phenotype of 2M K14-VEGF mice by changing the composition of intestinal microbiota



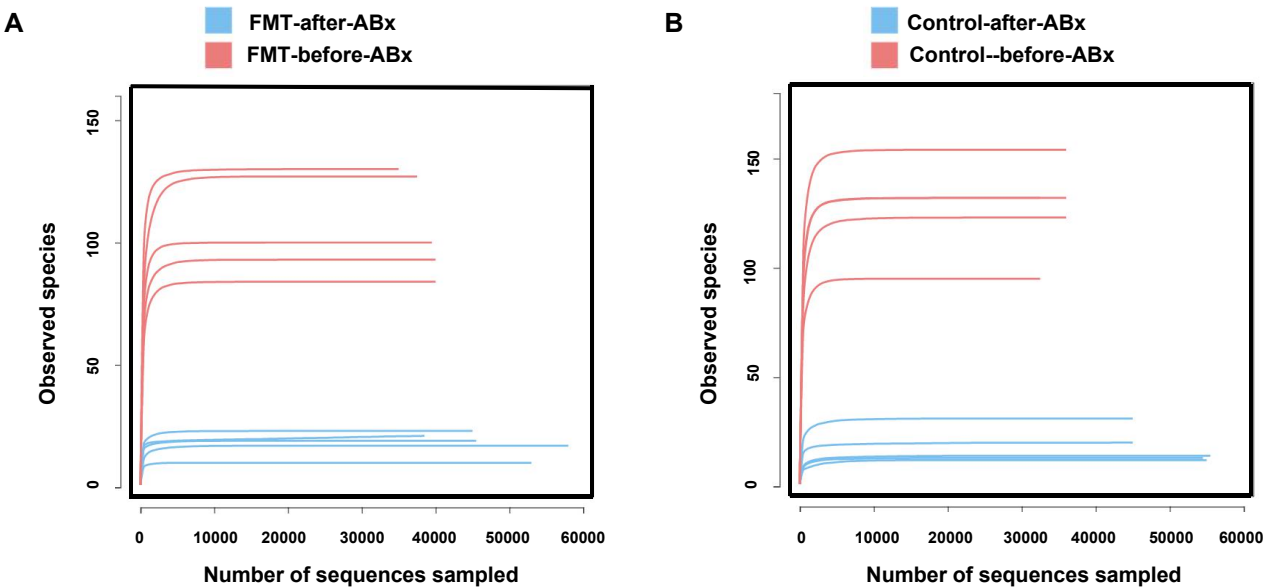
A. Colon length. B. Representative H&E staining of colons of Sep-2M Co-2M and 6M mice. (Scale bars: 50 μ m). C. Villus length. D. Cumulative histological score of colon. E. Relative expression levels of IL-17A in the colon of Sep-2M Co-2M and 6M mice. F. Representative micrographs of colon sections staining of anti-claudin-3 antibody. G. Median values of mean IOD of claudin-3 in Sep-2M Co-2M and 6M mice. H. Representative micrographs of colon sections staining of anti-CD45 antibody. I. Quantification of the number of CD45⁺ cells per field in the colon. Data presented as mean $\pm$ SEM on relevant graphs. * $p \leq 0.05$; * * $p \leq 0.01$; * * * $p \leq 0.005$ (Mann-Whitney test, two-tailed).

sFigure 3:Co-housing with 6M K14-VEGF mice altered the composition of intestinal metabolites in 2M K14-VEGF mice



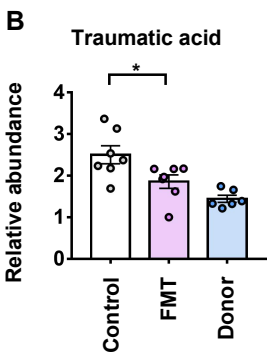
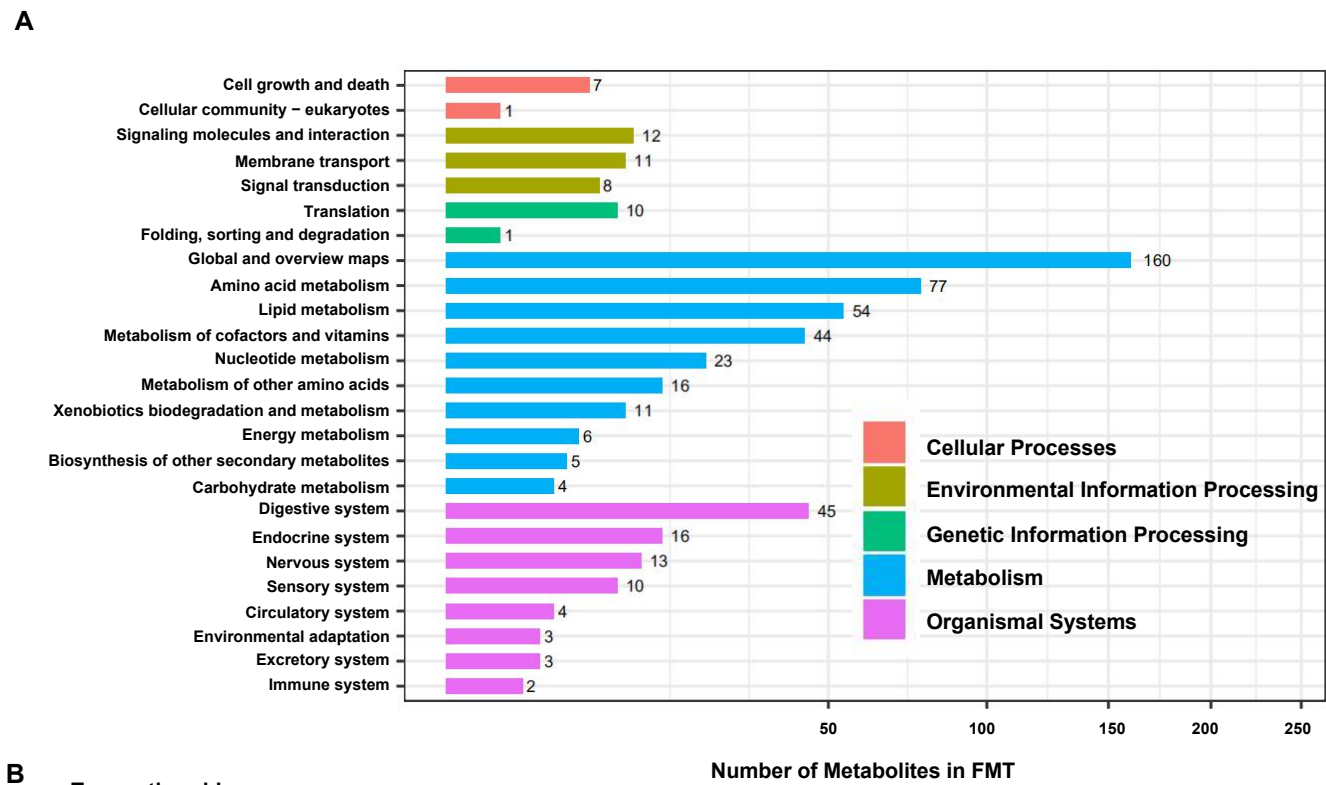
A. KEGG pathway classification chart of fecal metabolites from co-housing experiment. B. Relative abundance of Traumatic acid. Data presented as mean $\pm$ SEM on relevant graphs. * $p \leq 0.05$; ** $p \leq 0.01$; * $p \leq 0.005$ (Mann-Whitney test, two-tailed).**

sFigure 4:Fecal microbiota transplantation from 6M K14-VEGF mice altered the composition of intestinal metabolism in 2M K14-VEGF mice



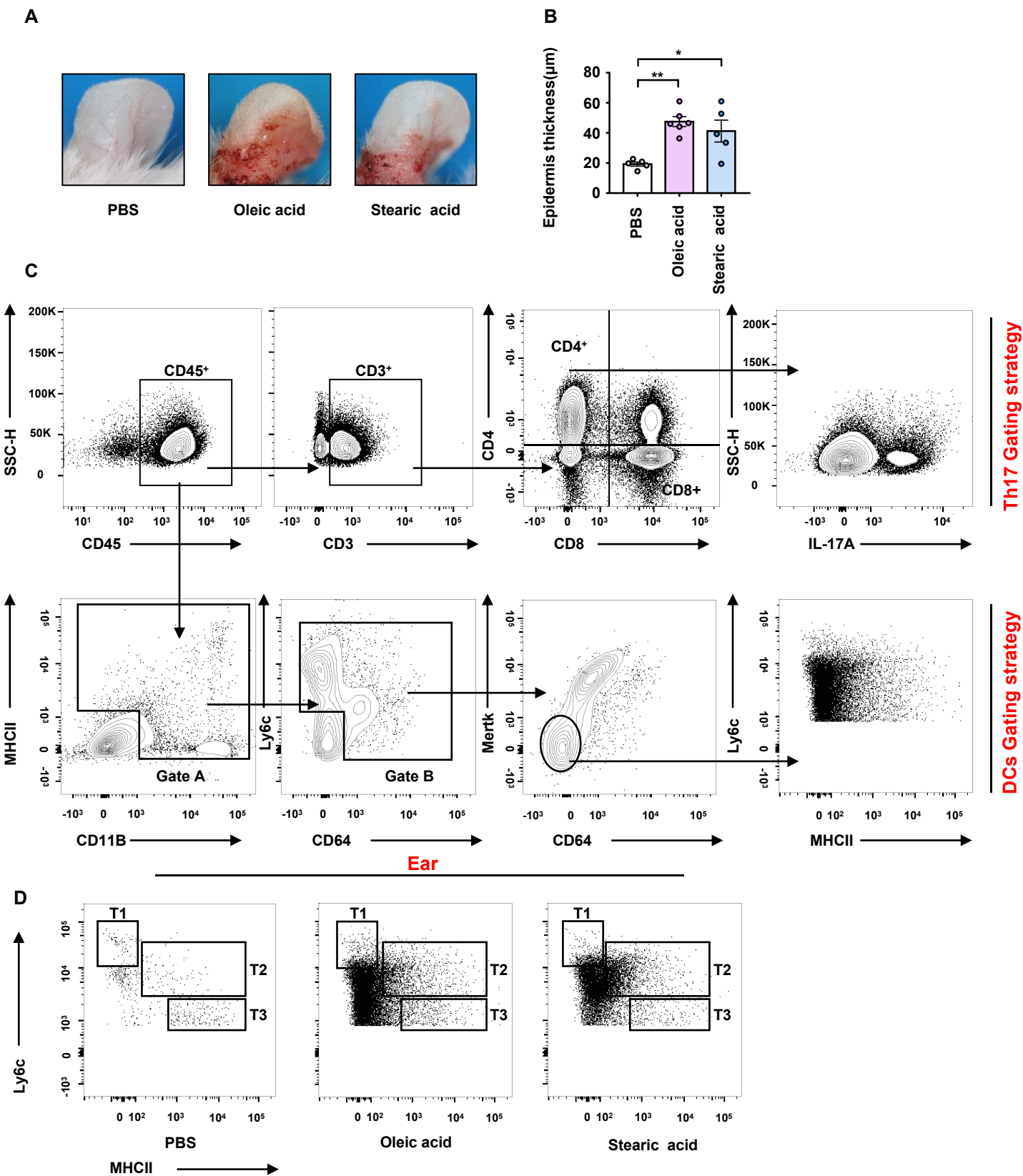
A. Observed species of FMT mice before and after antibiotic treatment. **B.** Observed species of Control mice before and after antibiotic treatment.

sFigure 5:Fecal microbiota transplantation from 6M K14-VEGF mice altered the composition of intestinal metabolism in 2M K14-VEGF mice



A. KEGG pathway classification chart of fecal metabolites from FMT experiment. B. Relative abundance of traumatic acid in fecal metabolites.

sFigure 6:Administration of free fatty acid exacerbated the pathogenesis of psoriasis of 2M K14-VEGF mice and promoted the differentiation of Th17 in DLN as well as increased the infiltration of moDDCs and Th17 in ears



A. Macroscopic characteristics of the ears in PBS, Oleic acid and Stearic acid group mice. **B.** Average epidermal thickness. **C.** Flow cytometry plots, and gating strategy for the identification of monocytes (T1) and moDDCs (T2 and T3) in ear and Th17 in ear and DLN. **D.** Analysis of monocytes (T1) and moDDCs (T2 and T3) by flow cytometry in ears. Data presented as mean $\pm$ SEM on relevant graphs. * $p \leq 0.05$; ** $p \leq 0.01$; *** $p \leq 0.005$ (Mann-Whitney test, two-tailed).