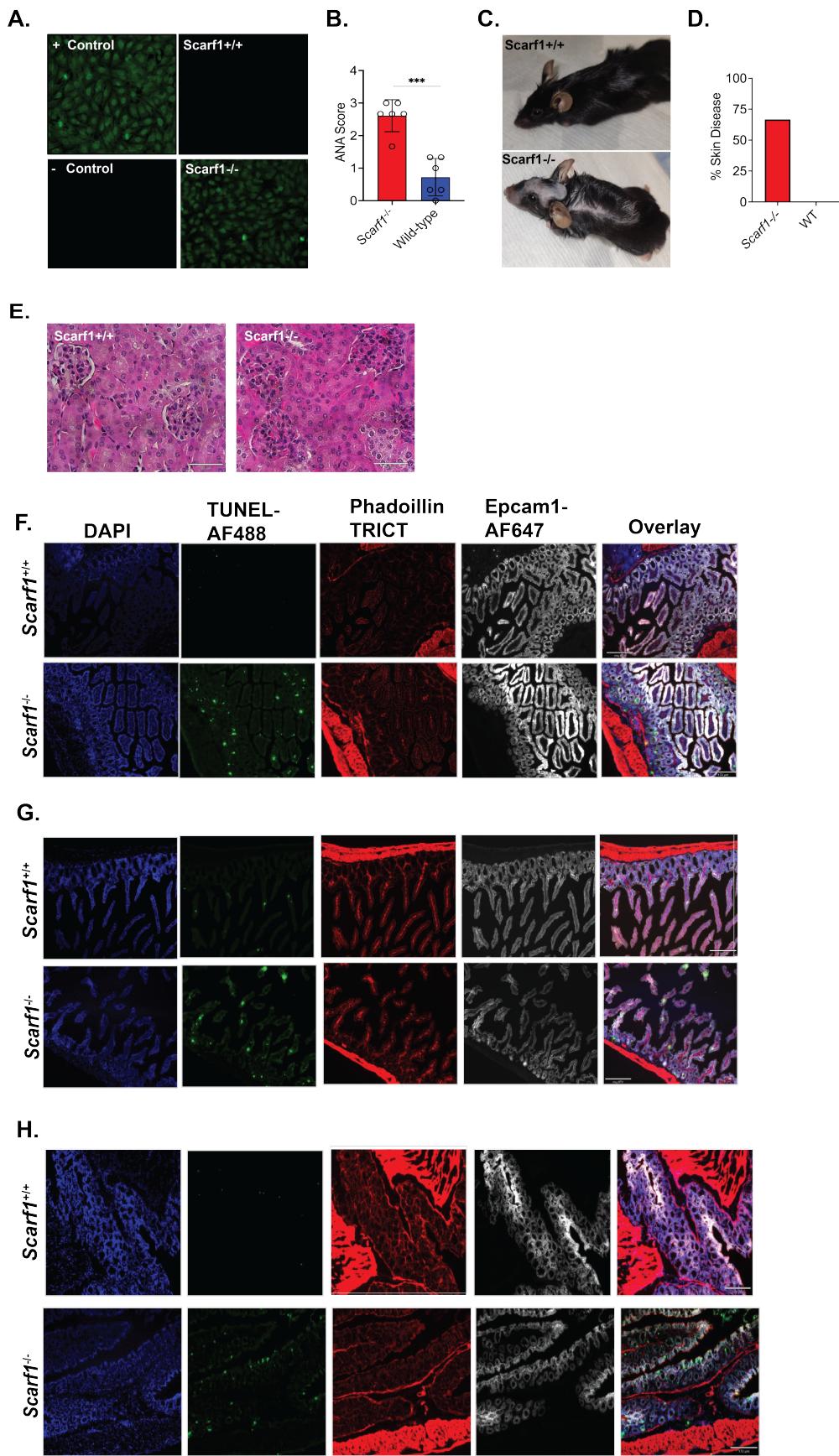
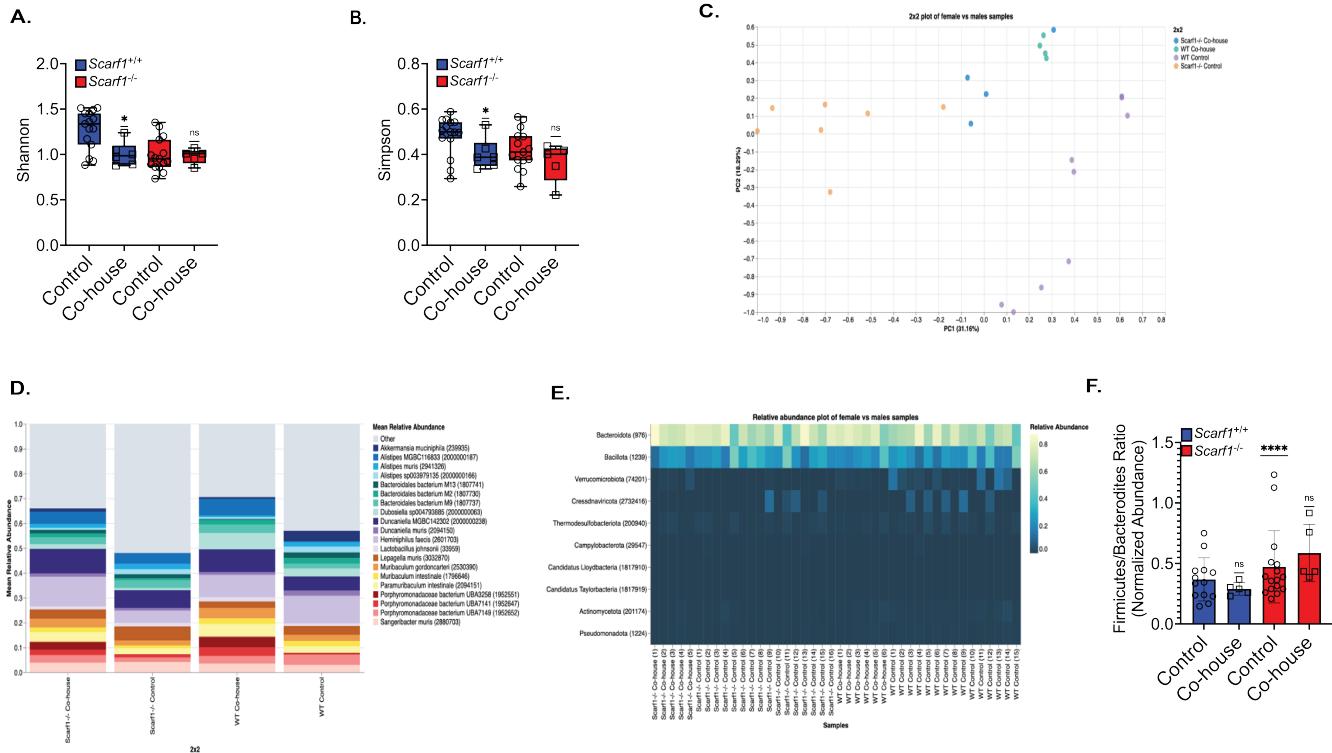


Supplemental Figure:

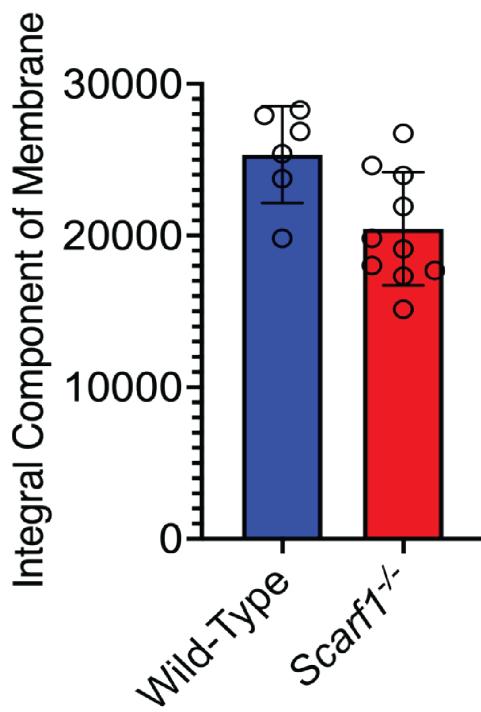
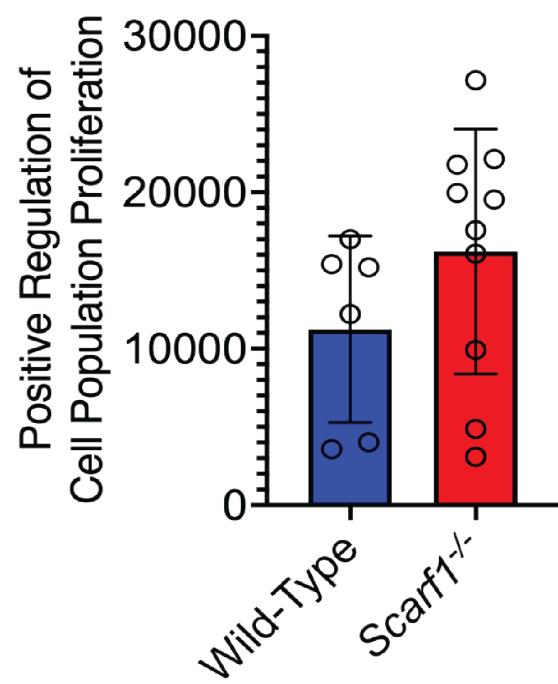


Supplemental Figure 1. *Scarf1*^{-/-} develop autoimmunity after 20-weeks of age. A) ANA immunofluorescence of HEp-2 cells, with serum from 20-week-old *Scarf1*^{+/+} and *Scarf1*^{-/-} mice (n = 6 female mice per group). Original magnification, $\times 20$. B) Frequency of serum ANA. n = 6 female mice, $p < 0.05$ C) *Scarf1*^{-/-} mice develop skin disease after 20-weeks of age. Photography of *Scarf1*^{+/+} and *Scarf1*^{-/-} mice. D) Incidence and total severity of skin disease in *Scarf1*^{-/-} mice (n = 6 per group). E) Hematoxylin-and-eosin staining of fixed cryosections of kidneys from 20-week-old female *Scarf1*^{+/+} and *Scarf1*^{-/-} mice (n = 3 per group). Original magnification, $\times 20$. F-H) Fluorescence microscopy of Duodenum, Ileum and Colon sections from >20-week-old *Scarf1*^{+/+} and *Scarf1*^{-/-} mice, showing apoptotic cells stained by TUNEL (green) and phalloidin (red), EPCAM-1 (white) and DAPI (blue). Representative image of 3 independent experiments. 20x magnification. F) Ileum, G) Duodenum, H) Colon



Supplemental Figure 2: Co-housing wild-type and *Scarf1*^{-/-} does not alter alpha diversity

or F/B ratio. Mice were co-housed in a 2x2 system for 14 days. A-B) Alpha diversity of fecal microbiota in wild-type and *Scarf1*^{-/-} mice from control or co-house conditions, measured by A) Shannon and B) Simpson diversity indices. C) Principal Coordinates Analysis (PCoA) plot of bacterial beta-diversity based on Bray–Curtis dissimilarities. Data represent two independent experiments combined. E) Heat map showing mean relative abundance of the top 10 phyla, F) F/B ratio calculated from normalized read counts.

A.**B.**

Supplemental Figure 3. Quantification of Functional Analysis. GO Term analysis in gut samples as copies per million comparing *Scarf1^{+/+}* and *Scarf1^{-/-}* mice. A) Integral component of membrane, B) Positive regulation of cell proliferation. Samples are for individual *Scarf1^{+/+}* (n=6) and *Scarf1^{-/-}* (n=10) mice. Samples show trends but are not statistically significant according to the non-parametric Wilcoxon rank statistical test.