Table S1. List of mouse models used for the experiments.

Nomenclature	Acronym	Definition
Atg7$^{F/F}$	*Atg7* cWT	*Atg7* (autophagy related 7) conditional wild-type (floxed *Atg7*)
Atg7$^{F/F}$; *Lyz2-Cre*$^{+}$	*Atg7* cKO	Myeloid cell-specific *Atg7* knockout
ob/w	*ob/w*	Heterozygous *Lep* knockout
ob/ob	*ob/ob*	Homozygous *Lep* knockout

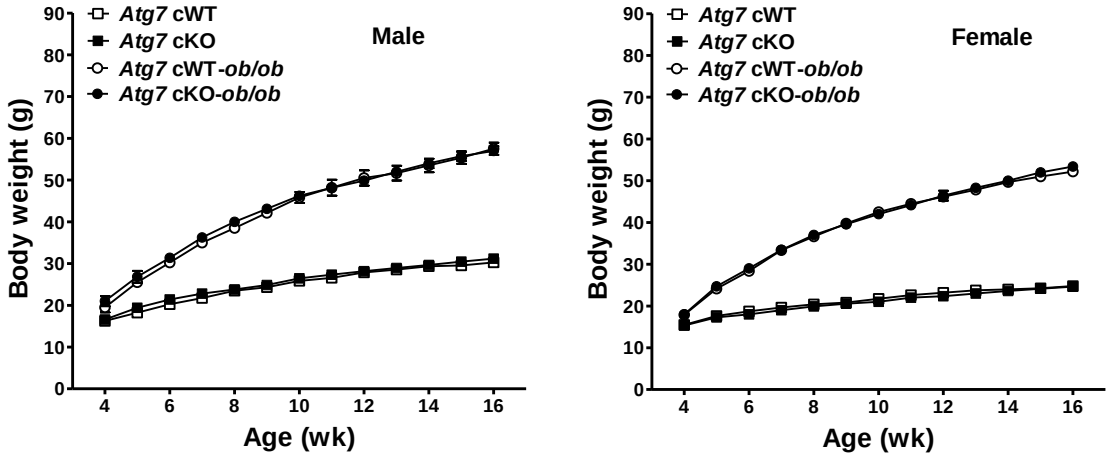

Figure S1. Body weight of *Atg7* cKO, *Atg7* cKO-*ob/ob* and respective control mice was monitored.

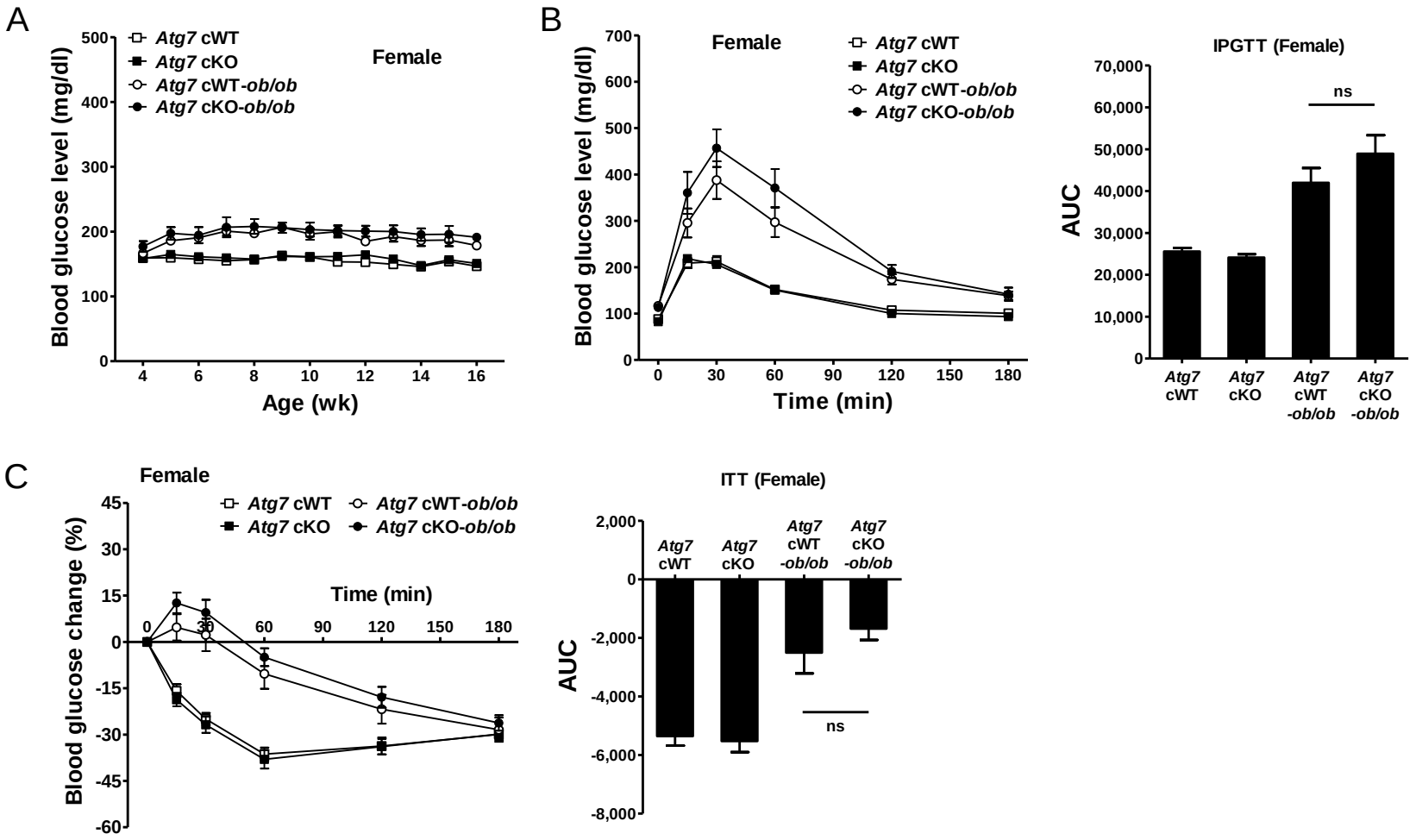

Figure S2. Metabolic profile of female *Atg7* cKO mice. (**A**) Nonfasting blood glucose level was determined in female *Atg7* cKO, *Atg7* cKO-*ob/ob* and respective control mice (n = 10 to 25). (**B**) IPGTT was done in overnight-fasted 16-wk-old female mice, and AUC calculated (n = 6 to 12). (**C**) ITT was done in fasted 16-wk-old female mice, and AUC calculated (n = 6 to 12). ns, not significant.

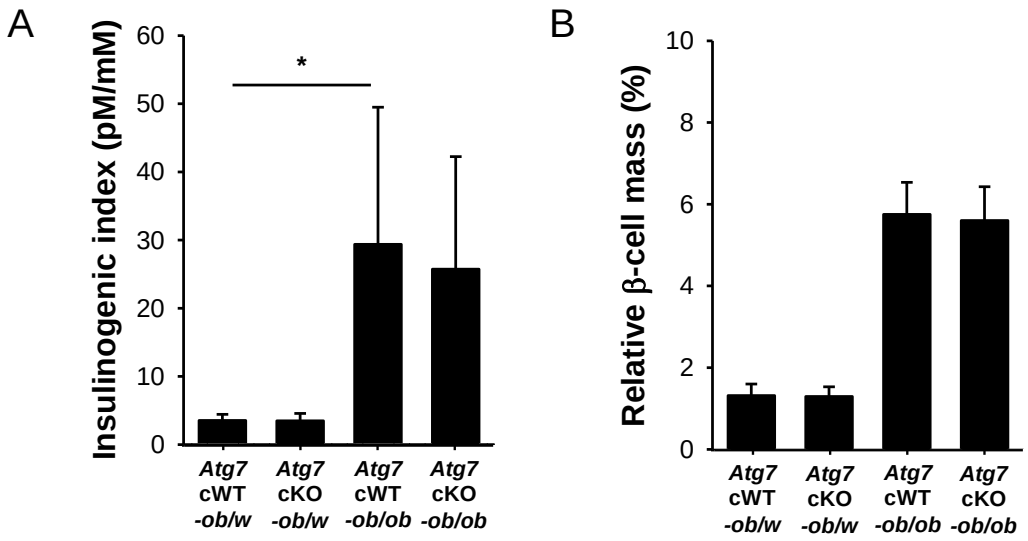

Figure S3. β-cells in *Atg7* cKO mice. (**A**) The insulinogenic index was calculated in 16-wk-old male mice as described in the Materials and Methods (n = 4 to 12). (**B**) Relative β-cell mass was assessed in 12 to 16-wk-old male mice by point counting morphometry (n = 4 each). *, $P < 0.05$.

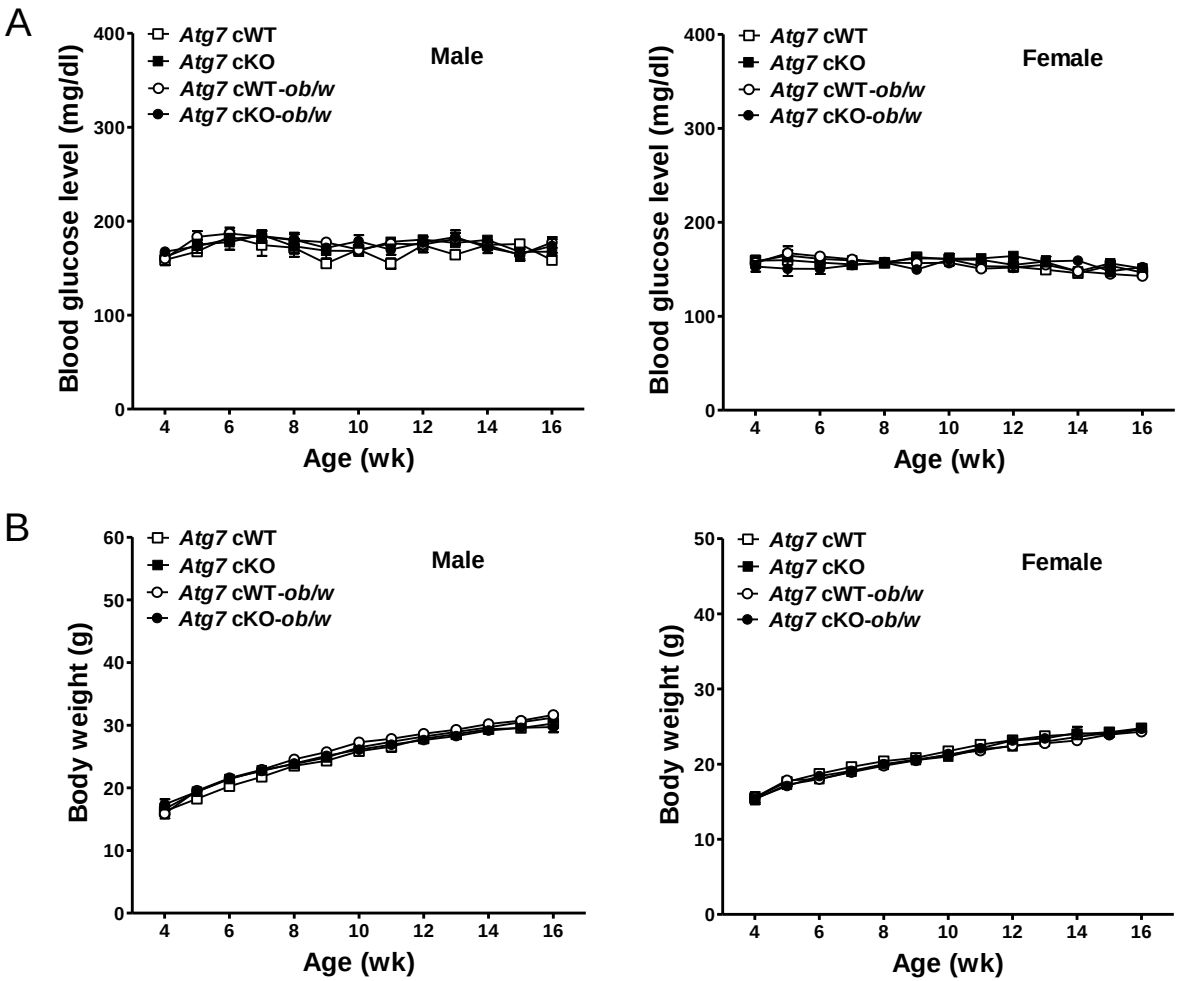

Figure S4. Glucose profile and body weight of *Atg7* cWT, *Atg7* cKO, *Atg7* cWT-*ob/w* and *Atg7* cKO-*ob/w* mice. Nonfasting blood glucose level and body weight of *Atg7* cKO-*ob/w* and *Atg7* cWT-*ob/w* mice were not different from those of *Atg7* cKO and *Atg7* cWT mice, respectively (male, n = 10 to 15; female, n = 10 to 14).

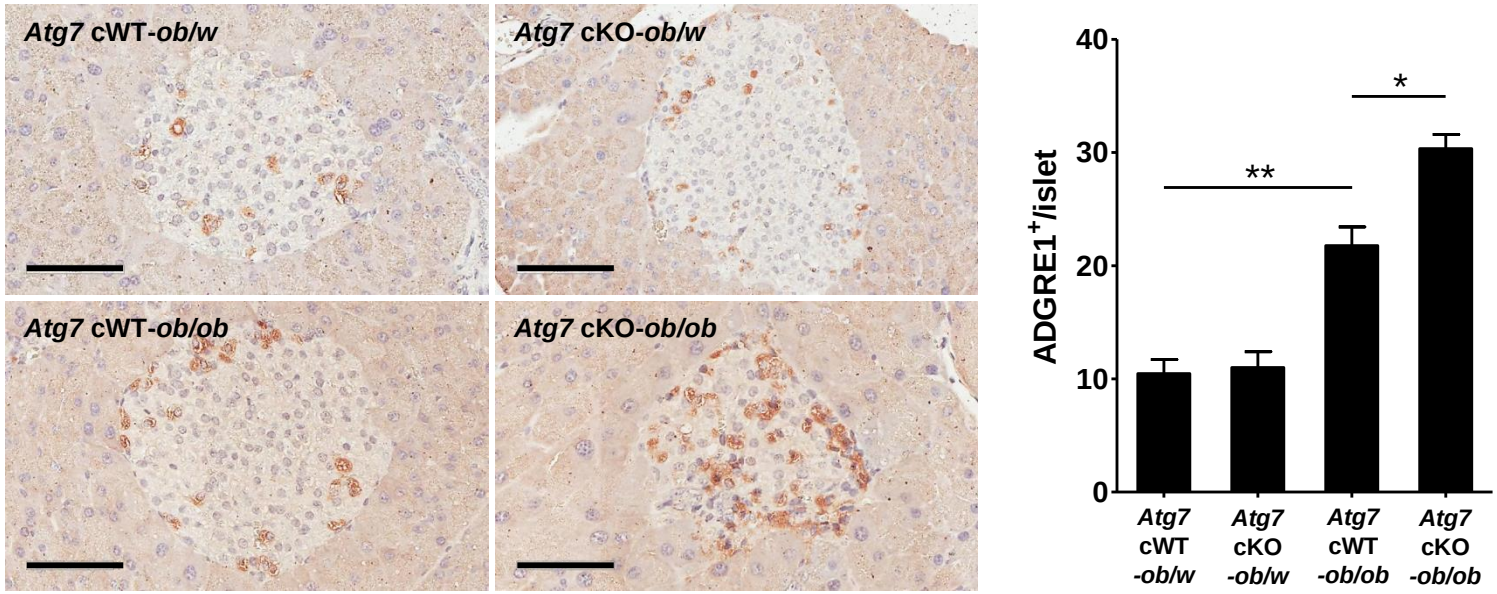

Figure S5. Infiltration of ADGRE1$^+$ MΦs into islets was evaluated by immunohistochemistry and expressed as the number of ADGRE1$^+$ cells/islet. Representative immunostained sections are shown (left). *, $P < 0.05$.

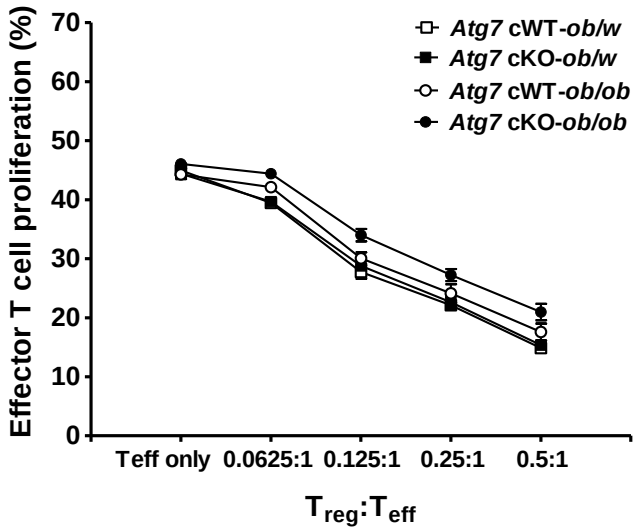

Figure S6. Suppressive activity of Treg cells in adipose tissue from male mice of each genotype. Graded numbers of $CD4^+$ $IL2RA^+$ Treg cells prepared from the SVF using a MACS Regulatory T cell isolation kit were cocultured with CFSE-labelled $CD4^+$ $IL2RA^-$ T cells and irradiated non-$CD4^+$ T cells in the presence of anti-CD3E Ab for a total of 3 days. Proliferation of CFSE-labelled T effector cells was assessed by flow cytometry.

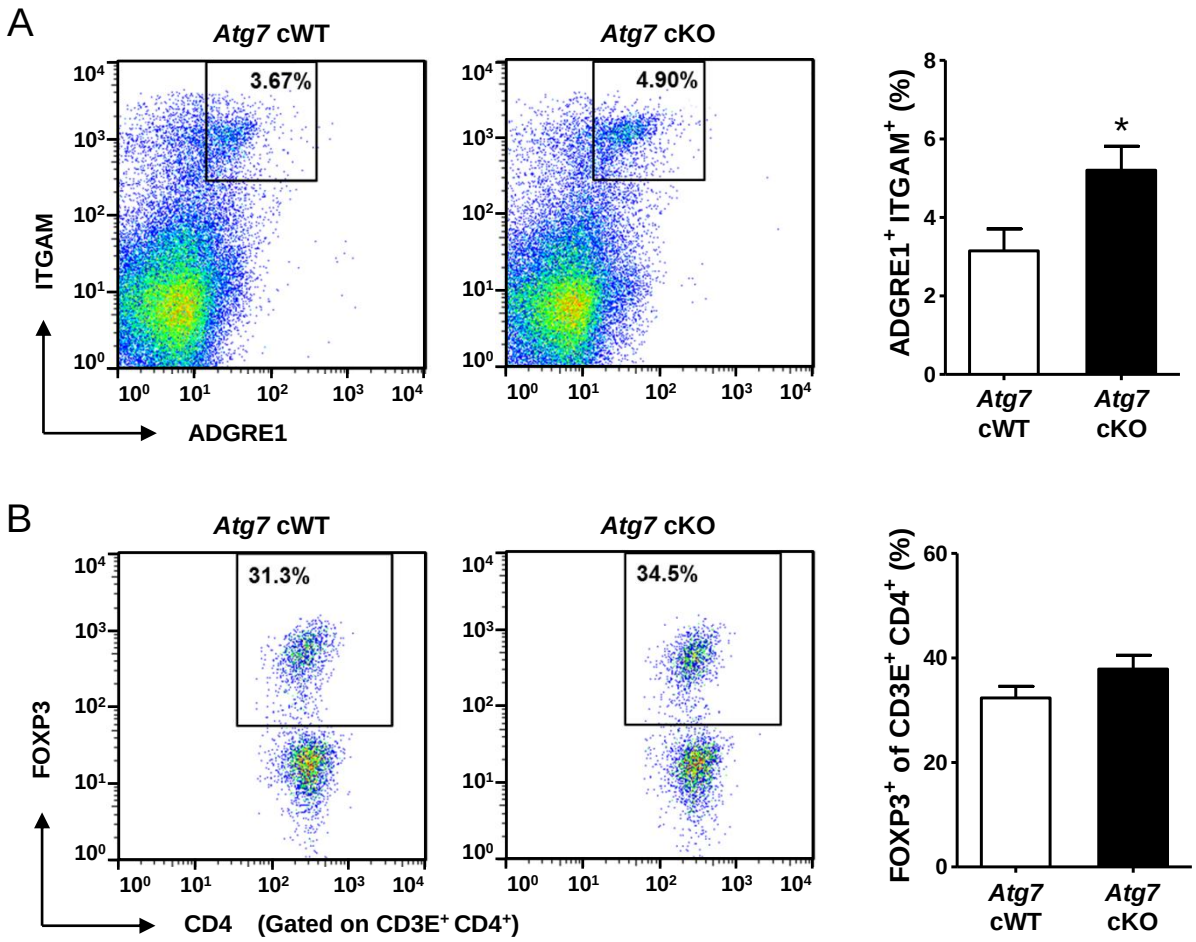

Figure S7. Myeloid cells and Treg cells in the colonic lamina propria after DSS treatment. The proportion of ADGRE1$^+$ ITGAM$^+$ myeloid cells (**A**) and that of FOXP3$^+$ CD4$^+$ Treg cells (**B**) were evaluated on day 7 of DSS treatment by flow cytometry (n = 4 each) (right). Representative scattergrams are shown (left). *, $P < 0.05$.