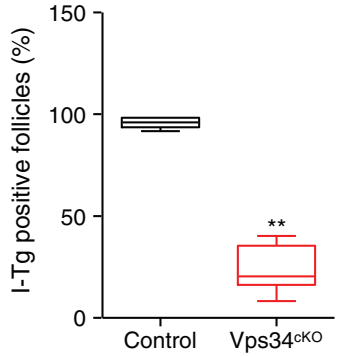
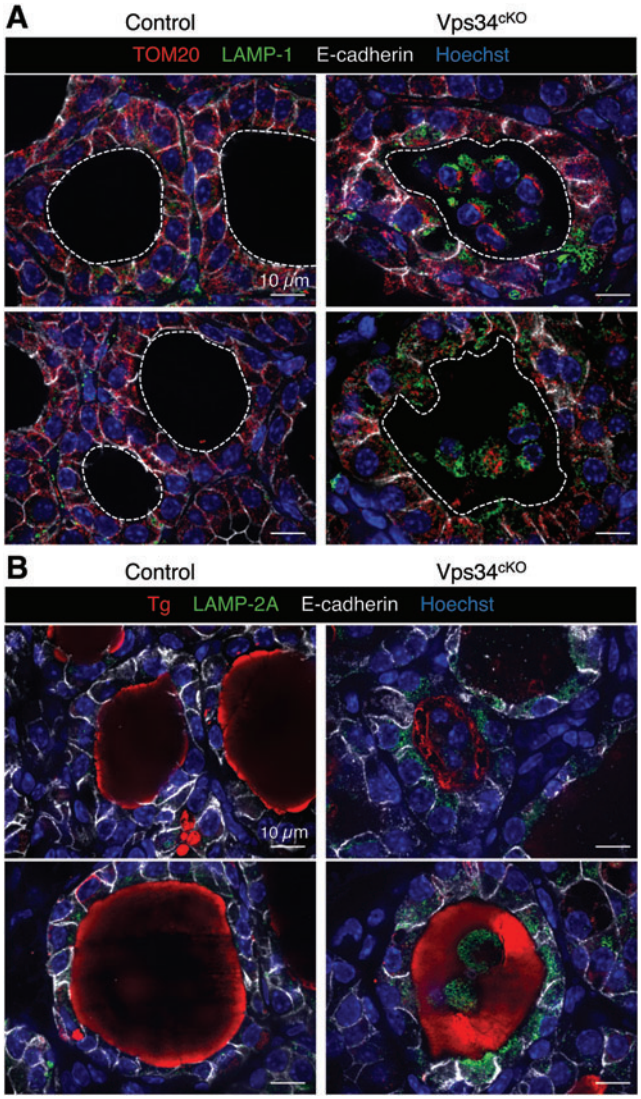


SUPPLEMENTARY FIG. S2. Histopathological evidence of I-Tg defect: quantification. Follicles from five controls and seven Vps34^{cKO} sections stained with I-Tg were counted for the presence of the thyroxine hormonogenic peptide. Results are expressed as a percentage of I-Tg-positive follicles (2712 control follicles and 3436 Vps34^{cKO} were counted). As compared with control mice (black box; 96 ± 3%), only a quarter (red box; 25 ± 12%) of Vps34^{cKO} follicles were positive for I-Tg (**$p = 0.01$ by Mann–Whitney nonparametric test). I-Tg, iodinated thyroglobulin.



SUPPLEMENTARY FIG. S3. Macroautophagy and chaperone-mediated autophagy. (**A**) Thyroid sections from control (left) and Vps34^{cKO} (right) labeled for TOM20 (red), lysosomal LAMP-1 (green), and E-cadherin (white). Nuclei are labeled by Hoechst (presented in blue). In control and Vps34^{cKO}, TOM20 shows a perinuclear localization without colocalization with LAMP-1 (no yellow), even though LAMP-1 signal is more widespread. (**B**) Thyroid sections from control (left) and Vps34^{cKO} (right) labeled for thyroglobulin (red), LAMP-2A (green), and E-cadherin (white). Nuclei are labeled by Hoechst (shown in blue). In Vps34^{cKO} sections, LAMP-2A signal is much stronger than in control thyroid, indicating up-regulation of chaperone-mediated autophagy.