

Supplemental Figure S1. Synthesis of proinsulin and thyroglobulin is proportional to the amount of plasmid transfected; a KDEL-tag retains proinsulin in an ER-like compartment. A) 293T cells were transiently transfected in 12-well plates with the plasmids and amounts (ng/well) indicated. The transfected cells were pulse labeled with <sup>35</sup>S-Cys for 10 min and lysed in RIPA buffer. Cell lysates were immunoprecipitated with either anti-insulin (left panel) or anti-myc (right panel) and analyzed by reducing SDS-PAGE and autoradiography. EV=Empty Vector **B)** INS1 cells were co-transfected with ER-RFP (red fluorescence) and either wt hPro-CpepSfGFP (upper) or hPro-CpepSfGFP-KDEL (lower) (green fluorescence), fixed in 4% formaldehyde, and imaged by confocal miscriscopy. Scale bar = 20 μm.

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Supplemental Figure S2. Expression of rdw-Tg3xMyc protein in the thyroid glands of *rdwTg3xMyc* transgenic mice in a C57BL/6-wt or C57BL/6-*cog/cog* background. Thyroid glands from mice of the indicated genotypes were lysed by sonication in lysis buffer. Lysates, normalized to total DNA content, were analyzed by immunoblotting with anti-myc antibodies.

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