

# Supplementary Figure S1

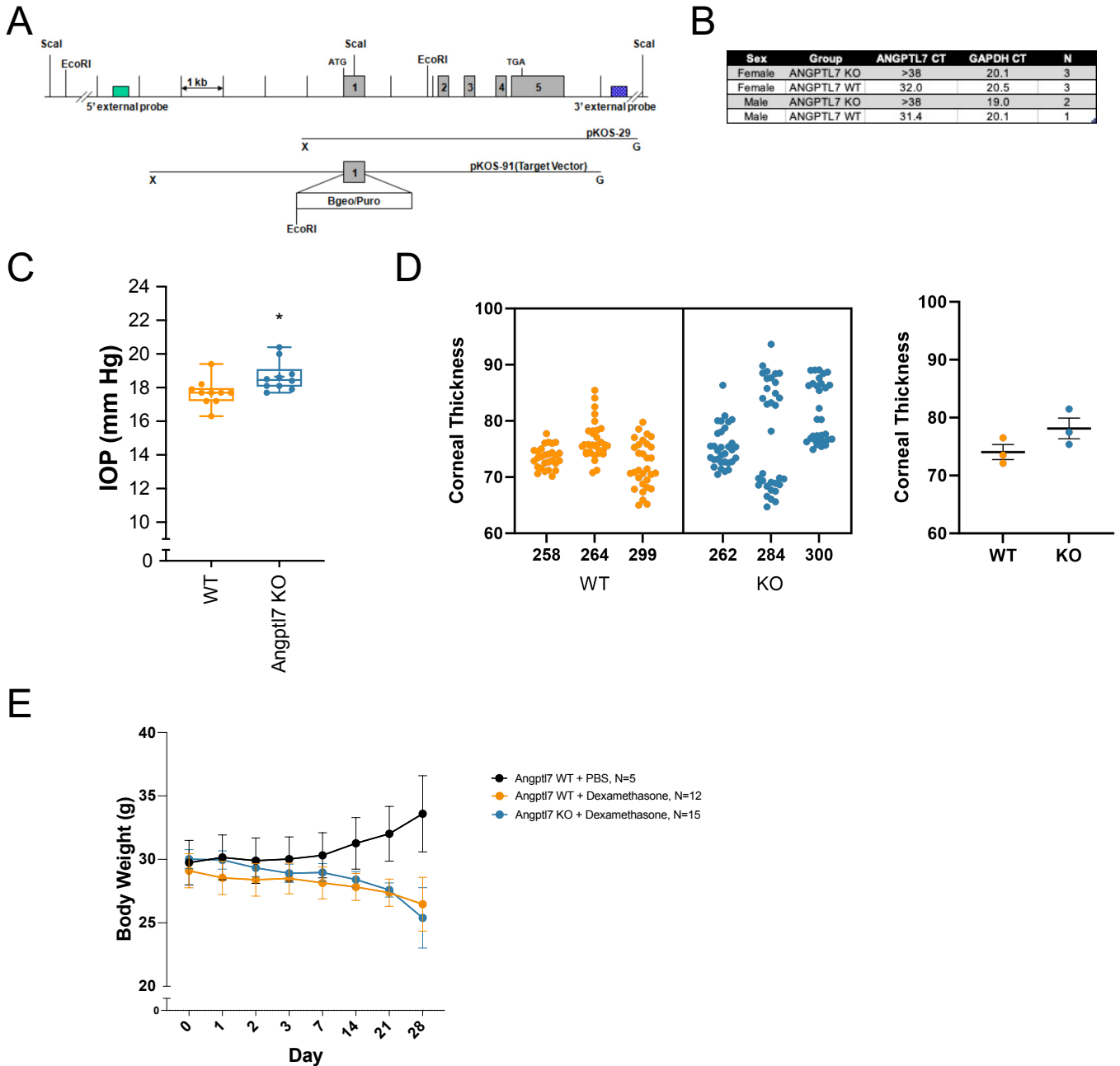
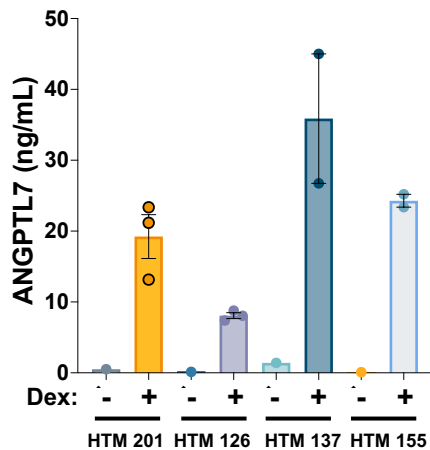


Figure S1. (A) Mouse *Angptl7* knockout scheme. (B) Verification of *Angptl7* knockout. qPCR of whole mouse eyes was used to quantify expression of the *Angptl7* gene. Knockout animals had no detectable gene expression, while WT littermates showed moderate levels of expression. (C) *Angptl7*<sup>-/-</sup> knockout in mice results in slightly higher IOP compared to WT littermates (n = 10 mice each), as quantified at a North Carolina site. Data are presented as box and whisker plots with a median line and mean represented as a '+' (\* p = 0.02, unpaired t-test). (D) Plot of individual cornea measurements recorded for each eye (left panel), and average cornea thickness recorded for each eye (right panel). Measurements were made from either wildtype (WT) or knockout (KO) ANGPTL7 mouse eyes, n = 3 eyes per group. Statistical significance was determined by unpaired t-test. (E) Body weights of mice implanted with Dex or PBS osmotic pumps. On day 28, *Angptl7* WT + PBS = 33.59 ± 3.00 g, *Angptl7* WT + Dex = 26.47 ± 2.12 g, *Angptl7* KO + Dex = 25.39 ± 2.38 g (n = 5-15; NS, ANOVA with Tukey's multiple comparisons test).

# Supplementary Figure S2

## A



## B

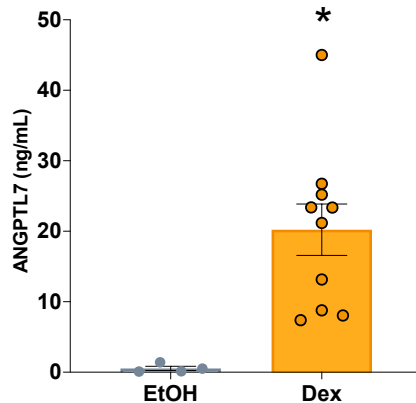


Figure S2. Human ANGPTL7 protein is induced by steroid treatment. Primary HTM cells were treated with 100 nM Dex or vehicle (0.1% ethanol) for 5 days. Media were collected from the cells, and ANGPTL7 protein secretion was quantified by ELISA. Individual cell lines are shown in (A), and pooled results are shown in (B). (\*  $p = 0.006$ , unpaired t test). Data are shown as mean  $\pm$  SEM.

# Supplementary Figure S3

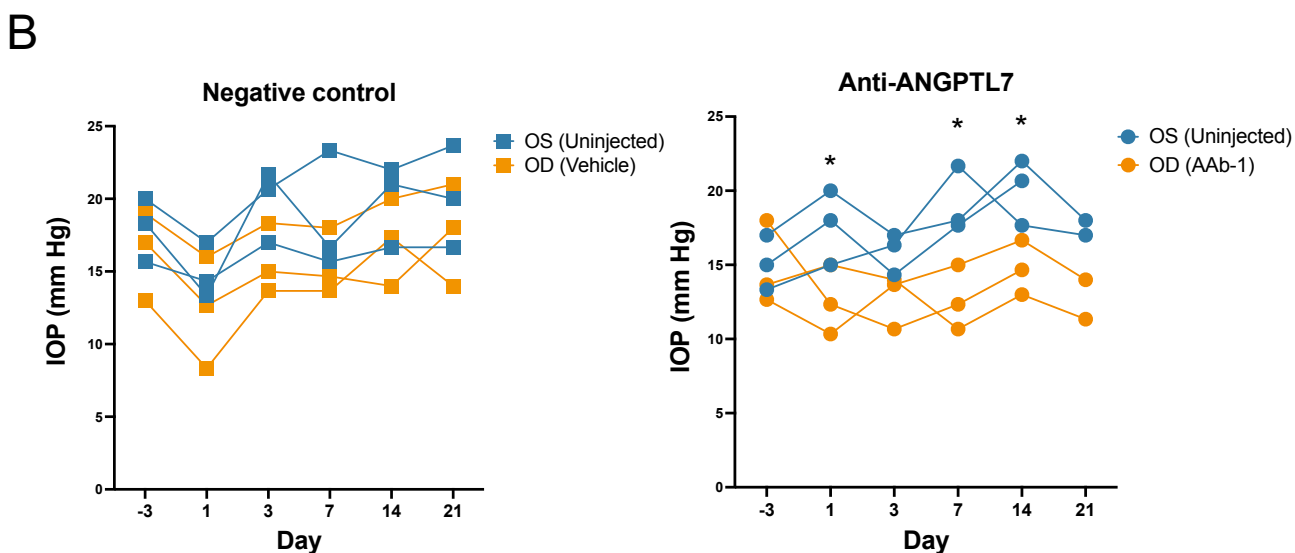
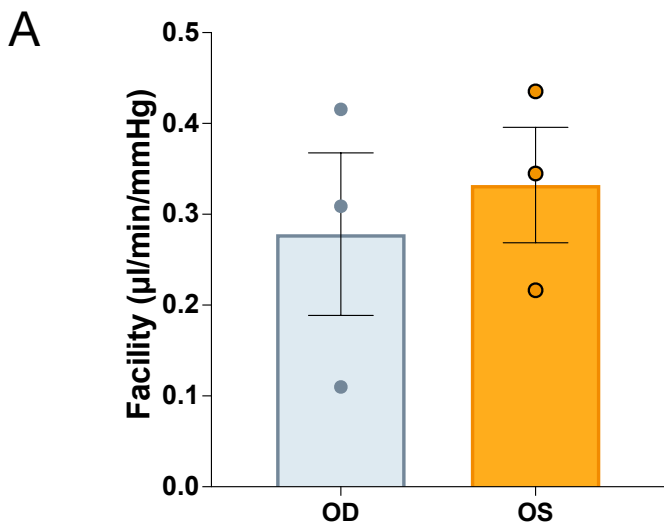


Figure S3: (A) Outflow facility from perfused human eyes ( $n = 3$  donors) used for effluent collection experiment. No significant differences were seen among eyes tested (paired t-test). Data are shown as are mean  $\pm$  SEM. (B) Raw IOP numbers from Figure 5C. An intravitreal injection of 2 mg of an antibody targeting ANGPTL7 (AAb-1) significantly lowered IOP in New Zealand White rabbits (right panel; \*  $p < 0.05$  vs. vehicle, ANOVA with Sidak's multiple comparisons test). No significant change was seen with intravitreal injection of antibody buffer compared to the uninjected eye (left). Data are shown as are mean  $\pm$  SEM.  $N = 3$  eyes at each timepoint, except on day 21  $n = 2$  for AAb-1 after one rabbit was removed on day 18 out of an abundance of caution due to slight squinting of the OD eye.