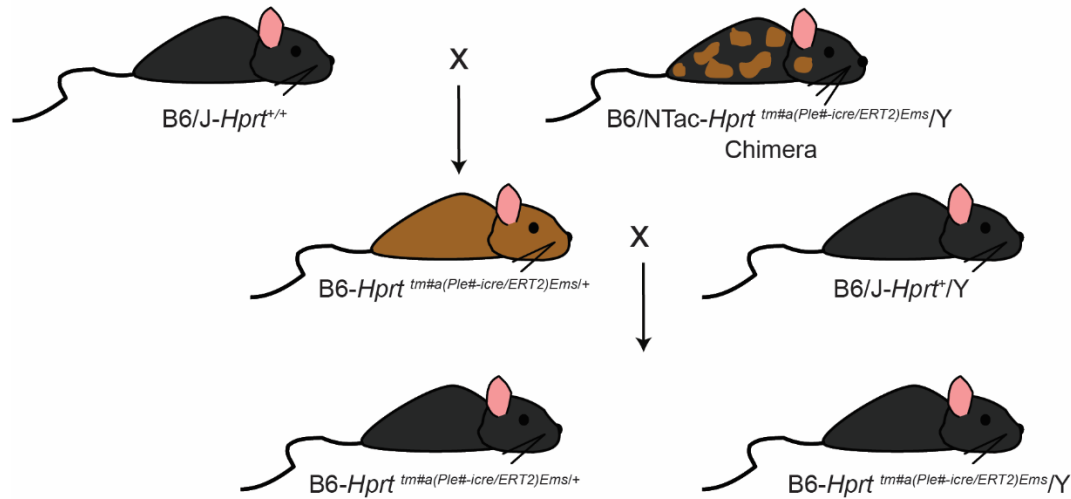
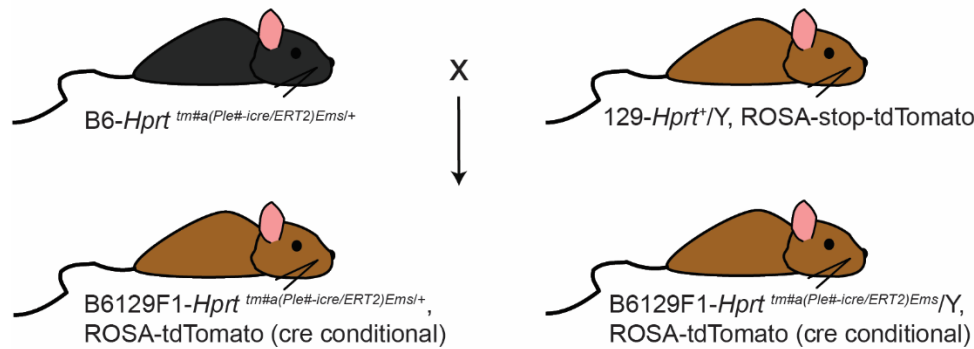


Supplemental Materials

A) Generating females for breeding and males for RT-PCR analysis



B) Generating B6129F1 inducible cre $tm\#a$ females and males for histology



C) Generating B6129F1 constitutive cre $tm\#b$ females and males for histology

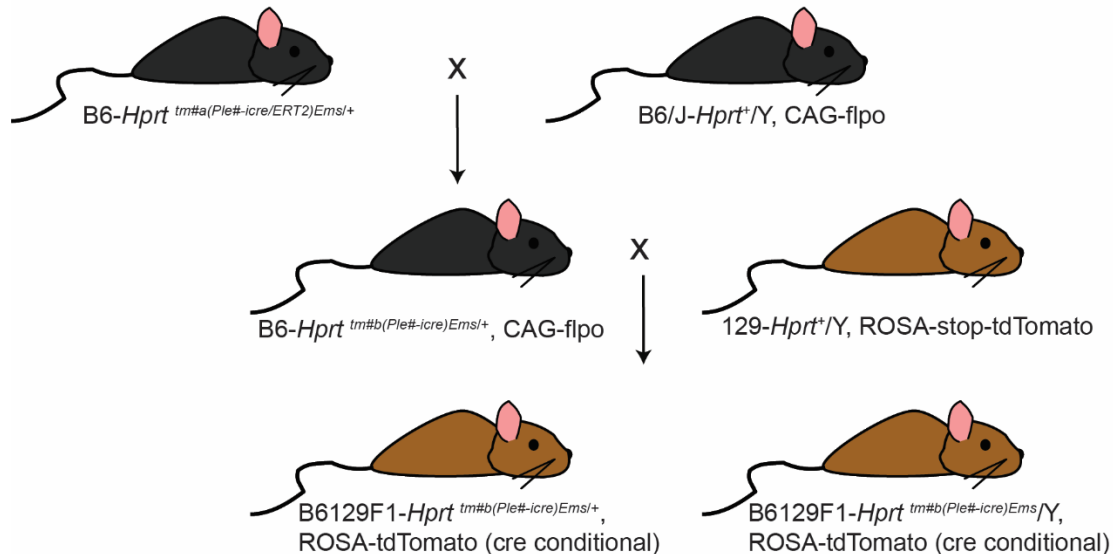
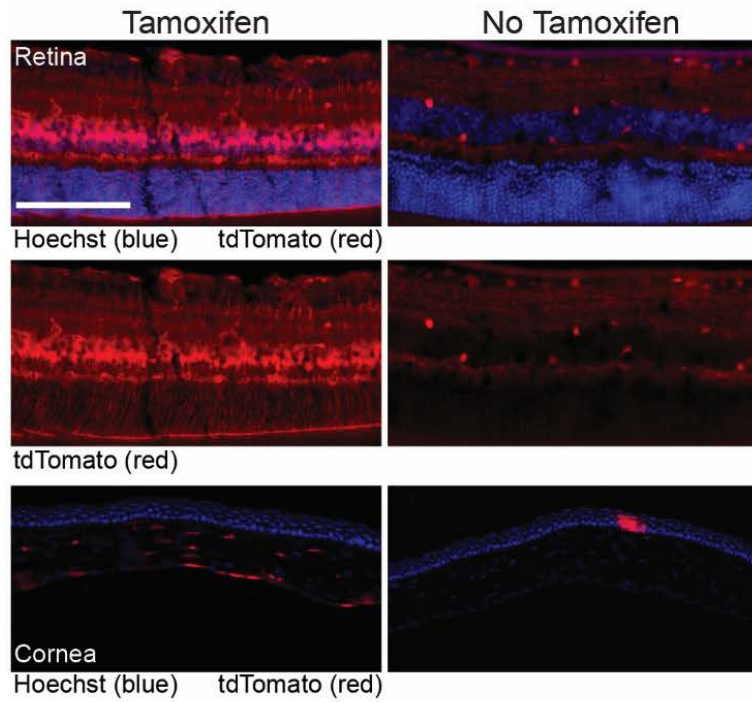


Fig. S1 Typical breeding strategy for MaxiPromoter and MiniPromoter mice.

A) Generating B6 females for breeding and males for RT-PCR analysis. Male chimeras carrying cells from the targeted B6/NTac embryonic stem cell line, for either a MaxiPromoter or MiniPromoter inserted at the *Hprt* gene on the X Chromosome, were bred to female B6/J to generate germline heterozygous female mice (B6-*Hprt*^{tm#a(Ple#-ice/ERT)Ems/+}). These heterozygous females were then bred to B6/J males to generate both more heterozygous female mice for further breeding and hemizygous male mice (B6-*Hprt*^{tm#a(Ple#-ice/ERT)Ems/Y}) for RT-PCR analysis. **B)** Generating B6129F1 inducible cre tm#a females and males for histology. Heterozygous female MaxiPromoter or MiniPromoter mice were bred to 129-ROSA-stop-tdTomato males to generate both B6129F1 heterozygous female and hemizygous male inducible mice, conditionally expressing tdTomato once fed tamoxifen food. **C)** Generating B6129F1 constitutive cre tm#b females and males for histology. Heterozygous female MiniPromoter mice were bred to B6/J-CAG-flpo males to generate heterozygous female constitutive cre mice (B6-*Hprt*^{tm#b(Ple#-ice)Ems/+}), these females were then bred to 129-ROSA-stop-tdTomato males to generate both B6129F1 heterozygous female and hemizygous male constitutive cre mice, conditionally expressing tdTomato for histology. #, stands for all numbers in the collection; 129, 129S1/SvlmJ; B6/J, C57BL/6J; B6/NTac, C57BL/6NTac; B6, mixed genetic background of B6/NTac and B6/J; tm, targeted mutation; Ple, Pleiades promoter. Agouti, A^{w-J} from B6/NTac embryonic stem cells or A^w from 129; black, a from B6/J.

A) UBC-cre/ERT2 (inducible)



B) ACTB-cre (contitutive) C) ROSA-stop-tdTomato

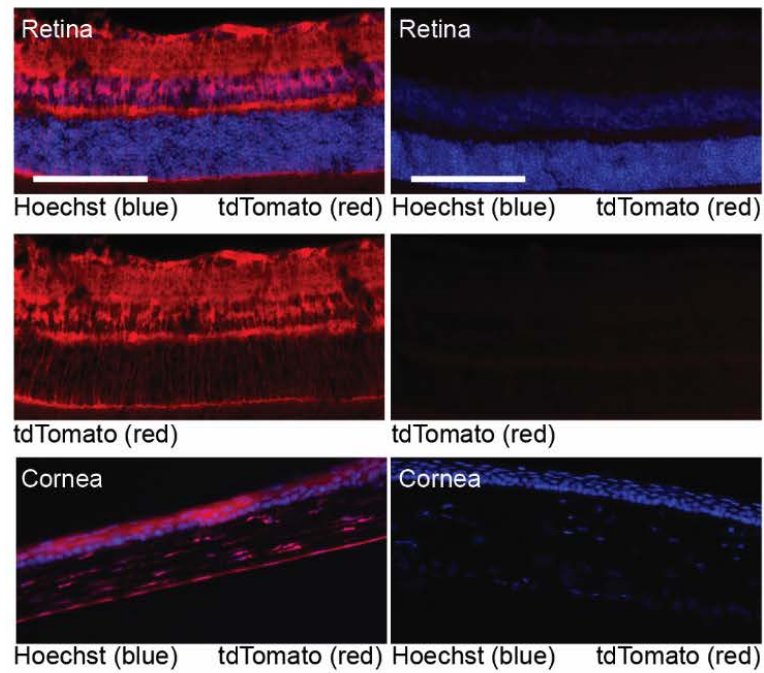


Fig. S2 Control strains showed the typical expression of cre.

A) The UBC-cre/ERT2 strain was used as a control for the tamoxifen-inducible strains. Adult mice that carried both the UBC-cre/ERT2 and ROSA-stop-tdTomato alleles were fed either tamoxifen food or no tamoxifen control food, and cre expression was examined using tdTomato epifluorescence (red). First panel: tamoxifen fed mouse stained throughout most layers of the retina; no-tamoxifen mouse also stained at a low level in the retina due to cre “leakiness”. Hoechst nuclear stain (blue). Second panel: data shown without Hoechst. Third panel: tamoxifen fed mouse stained in the stromal and endothelial layers of the cornea; no-tamoxifen mouse also stained at a low level in the cornea due to cre “leakiness”. **B)** The ACTB-cre strain was used as a control for the constitutive strains. Adult mice carried both the ACTB-cre and ROSA-stop-tdTomato alleles. First panel: mouse stained throughout most layers of the retina. Second panel: data shown without Hoechst. Third panel: mouse stained in all three layers of the cornea (epithelial, stromal, and endothelial). **C)** The ROSA-stop-tdTomato strain, not having been crossed to any cre strain, was used as a negative control for the constitutive strains. First panel: as expected, no tdTomato expression was observed in the retina. Second panel: data shown without Hoechst. Third panel: as expected, no tdTomato expression was observed in the cornea. Scale bars represent 100 μm .

Ple	Gene/ Genomic Region	Size (bp)	Design Type	Design Source	Previously Published (PMID)
67	<i>FEV</i>	2,202	Unaltered	KI mouse, rAAV	20807748, 24761428, 27164903
94	<i>GPR88</i>	3,049	Unaltered	rAAV	27164903
155	<i>PCP2</i>	1,652	Unaltered	KI mouse, rAAV	24761428, 27164903
198	<i>SLC6A4</i>	2,826	Unaltered	rAAV	27164903
232	<i>TNNT1</i>	1,209	Unaltered	KI mouse	24761428
251	<i>C8ORF46</i>	2,453	Unaltered	rAAV	27164903
253	<i>PITX3</i>	2,484	Unaltered	rAAV	27164903
264	<i>NR2E1</i>	3,026	Unaltered	rAAV	27164903
265	<i>PCP2</i>	986	Cut Down	Ple155	N/AP
266	<i>S100B</i>	2,982	Unaltered	rAAV	27164903
267	<i>UGT8</i>	3,014	Unaltered	rAAV	27164903
304	<i>OLIG1</i>	2,596	Unaltered	rAAV	27164903
N/AP	hs671	2,129	Literature	VISTA RI mouse (DPYD)	17130149, 23253453, 27164903
N/AP	hs1218	2,338	Literature	VISTA RI mouse (OTX2)	17130149, 27164903
N/AP	<i>Hspa1α</i> *	878	Literature	VISTA control	17130149
N/AP	CAGGS	1,723	Unaltered	rAAV	27164903

Table S1. Design details for the 15 MiniPromoters plus one control promoter.

*, synonym Hsp68; KI, knock in; N/AP, not applicable; Ple, Pleiades promoter; PMID, PubMed ID number; rAAV, recombinant adeno-associated virus; RI, random insertion; VISTA, VISTA Enhancer Project (<https://enhancer.lbl.gov/>).