



**Figure S5. The smCBA Promoter Delivered by Intravitreal Injection in Adult Nonhuman Primate Showed Ubiquitous Expression**

smCBA driving EmGFP-WPRE in rAAV9, was injected directly into adult rhesus macaque eye at a dose of  $4.08 \times 10^{12}$  GC/eye, and harvested four weeks later. At harvest, A) *in vivo* color fundus photography showed intense expression in perifoveal ring compared to baseline (white arrow). B) *In vivo* fundus autofluorescence (FAF) demonstrated intense expression (white) in the perifoveal ring, optic nerve, and nerve fibers. C) *In vivo* spectral domain optical coherence tomography imaging showed no disruption of retinal structure or changes in retinal thickness. D) *In vivo* ultra-widefield FAF showed expression (white) in patches of ganglion cells and their fibers in the far periphery. E) Histological confocal images demonstrated expression in all layers of peripheral retina, around blood vessels (white arrows), in the fovea, and at the optic nerve. EmGFP, emerald green fluorescent protein; GCL, ganglion cell layer; INL, inner nuclear layer; ONL, outer nuclear layer; rAAV9, recombinant adeno-associated virus packaged in capsid 9; WPRE, woodchuck hepatitis virus posttranscriptional regulatory element. Blue, DAPI; green, EmGFP epifluorescence.