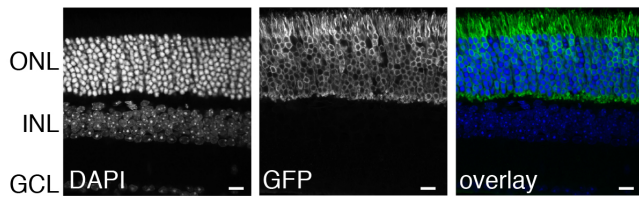
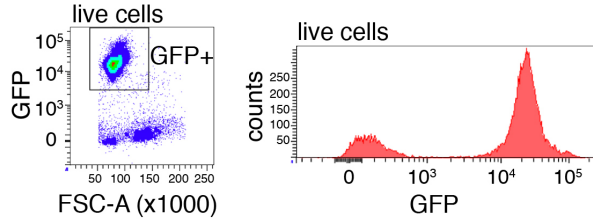


Figure S1

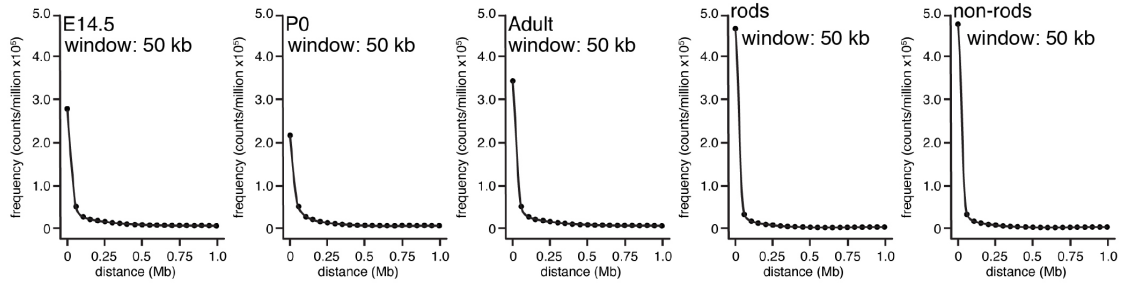
A



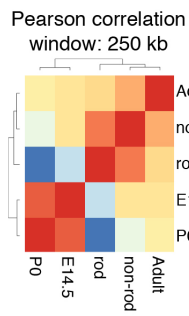
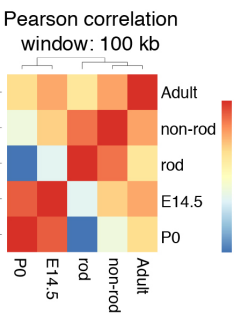
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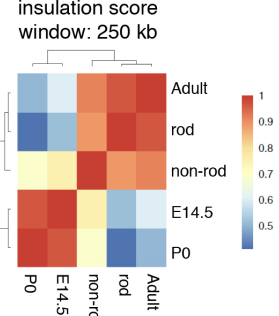
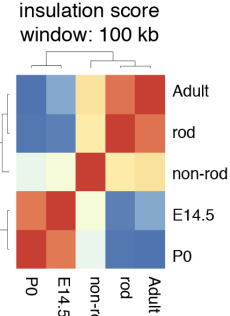
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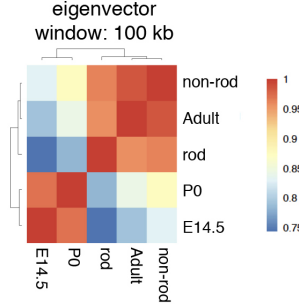
E



F



G



C

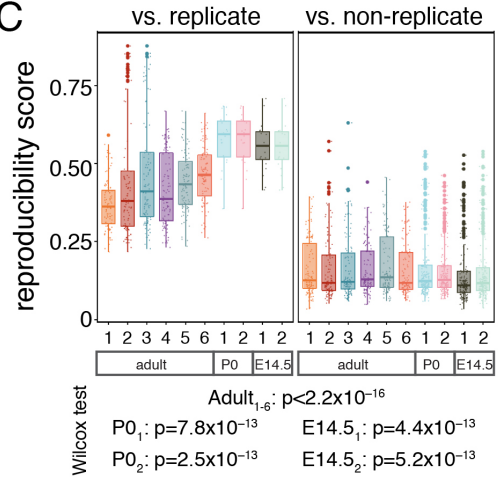


Figure S1 related to Figure 1. Quality control for Hi-C. **A)** Micrograph of retinal section showing nuclei (DAPI, blue) and GFP expression (green) for the Nrl-GFP mouse used to purify rod photoreceptors. **B)** Scatterplot of flow sorting for live rod photoreceptors from Nrl-GFP retinae. **C)** Boxplot of reproducibility score showing reproducibility versus the same sample type (vs. replicate) or for different sample types (vs. non-replicate). Statistical analyses are shown below the plot for each sample type. **D)** Line plot of contact frequency per distance for a 50 kb window across samples. **E-G)** Heatmaps of unsupervised hierarchical clustering of Pearson correlation, insulation score and eigenvector for the indicated window sizes.

Figure S2

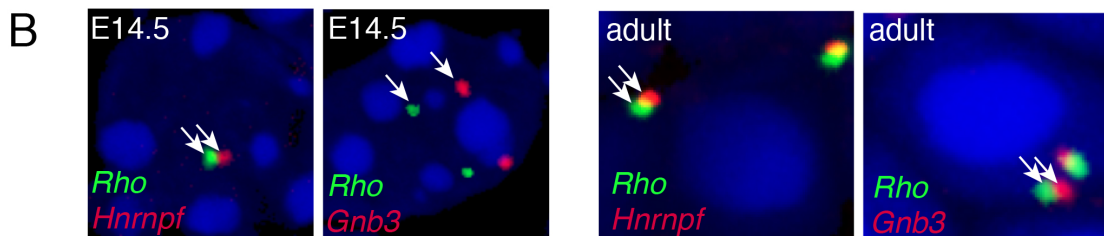
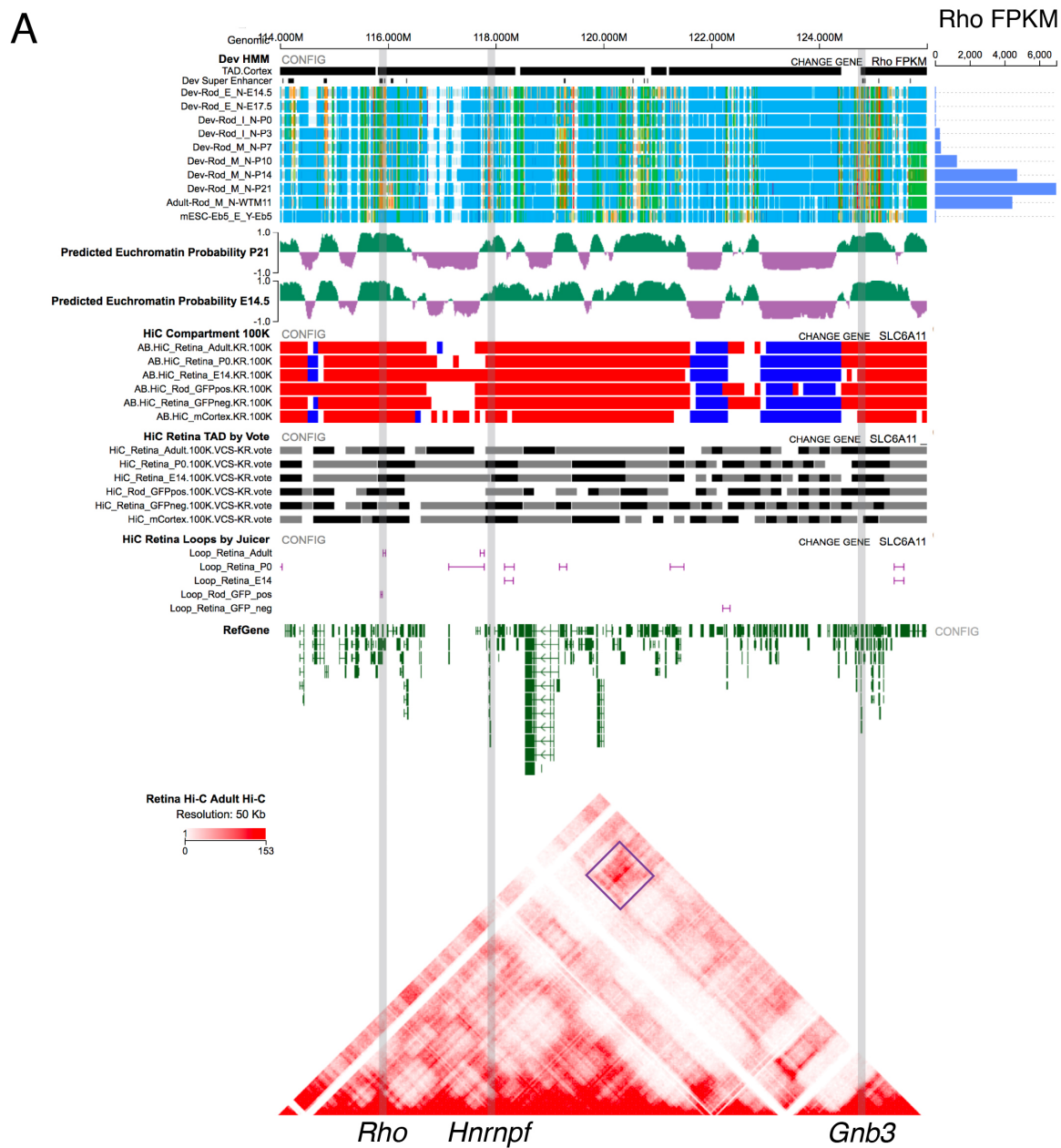


Figure S2 related to Figure 2. Long-range interactions with the *Rho* gene locus. A,B)

ChromHMM of the *Kcnab2* and *Rnf207* genes with gene expression (RNA-seq) showing increased expression during development. ATAC-seq and H3K4me3 ChIP-seq tracks are shown below the gene. C) ChromHMM, euchromatin/heterochromatin prediction, Hi-C compartmentalization, gene looping and Hi-C data for a 12 Mb region including the *Rho*, *Hnrnpf* and *Gnb3* genes. D) Micrographs of 2 color FISH for *Rho* (green) and *Hnrnpf* (red) or *Gnb3* (red) in E14.5 retinal progenitor cells or adult rod photoreceptors.

Figure S3

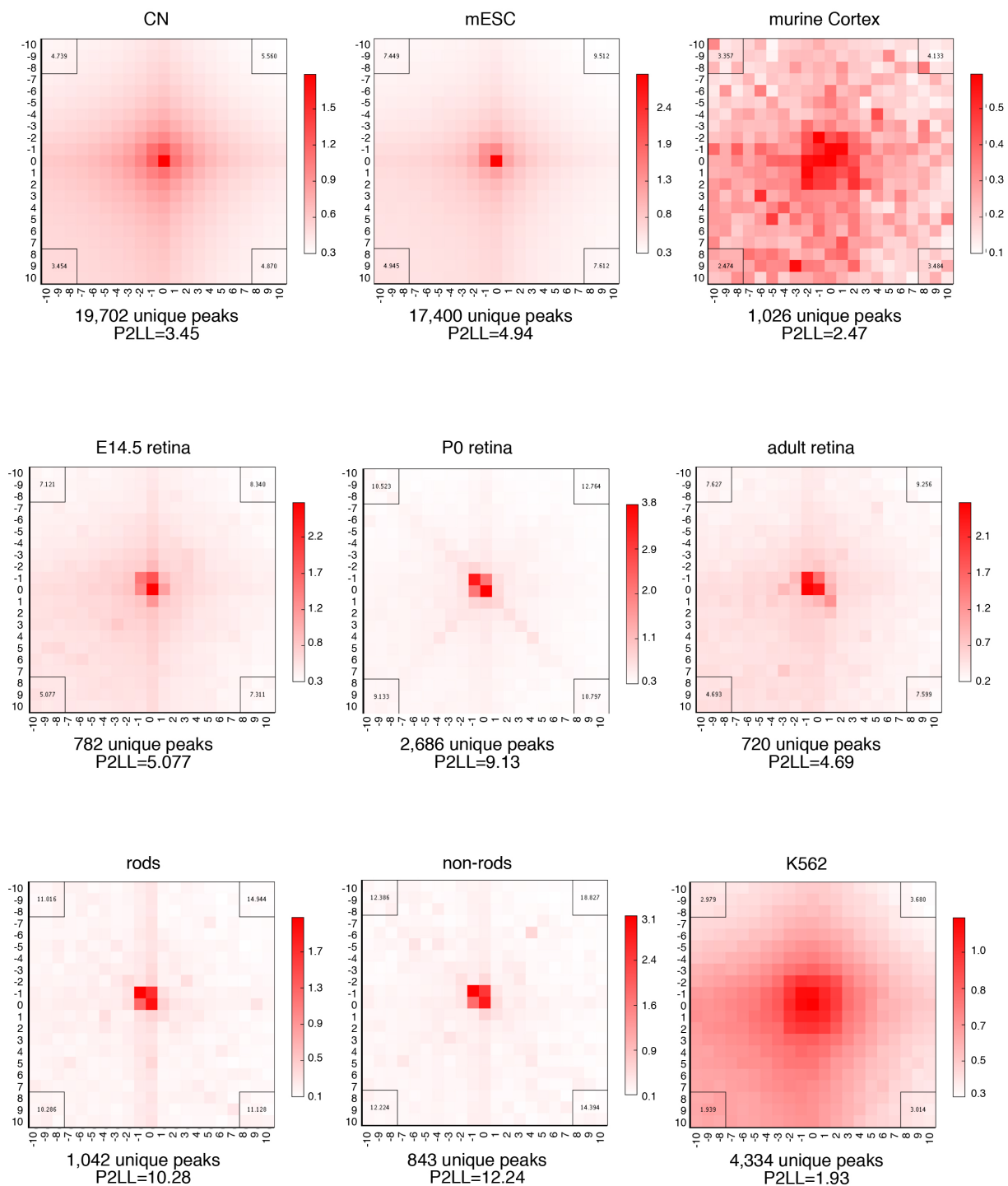


Figure S3 related to Figure 5. APA analysis of Hi-C data. APA plots for each sample analyzed in this study. The number of unique peaks and peak to lower left ratio (P2LL) are shown for each plot.

Figure S4

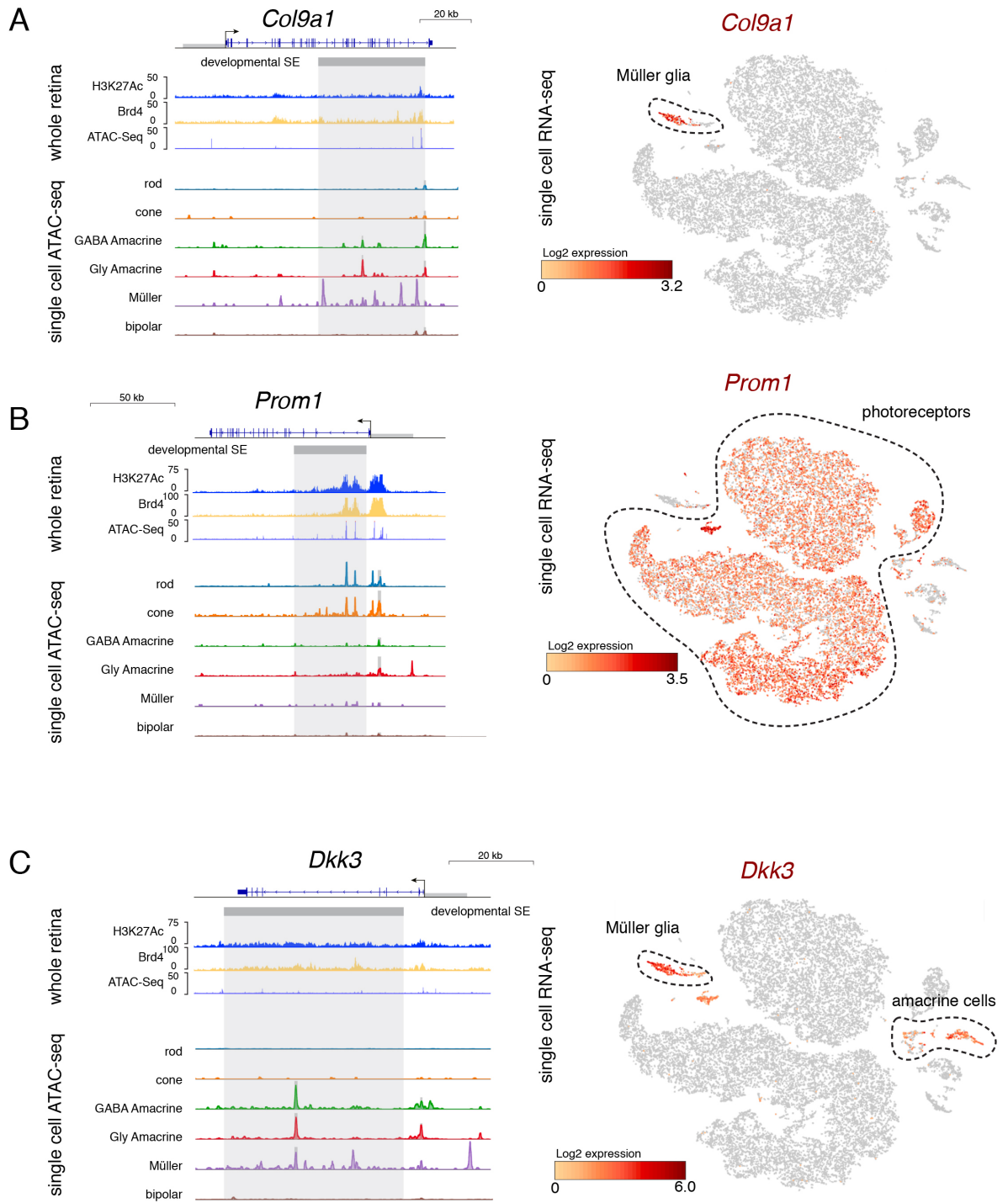


Figure S4 related to Figure 6. Identification of cell-type specific super-enhancers. A) Whole retina ChIP-seq and ATAC-seq for the *Col9a1* gene in adult retina with a developmental super-enhancer (SE) shown in gray. It is difficult to discern the boundaries of the SE because the gene is only expressed in Müller glia and the ChIP-seq signal is reduced in the whole retina. However, in the single cell ATAC-seq, there is a clear signal in the Müller glia with multiple peaks. **B,C)** Similar plots and maps are shown for a gene expressed specifically in photoreceptors (*Prom1*) and amacrine cells+ Müller glia (*Dkk3*).

Figure S5

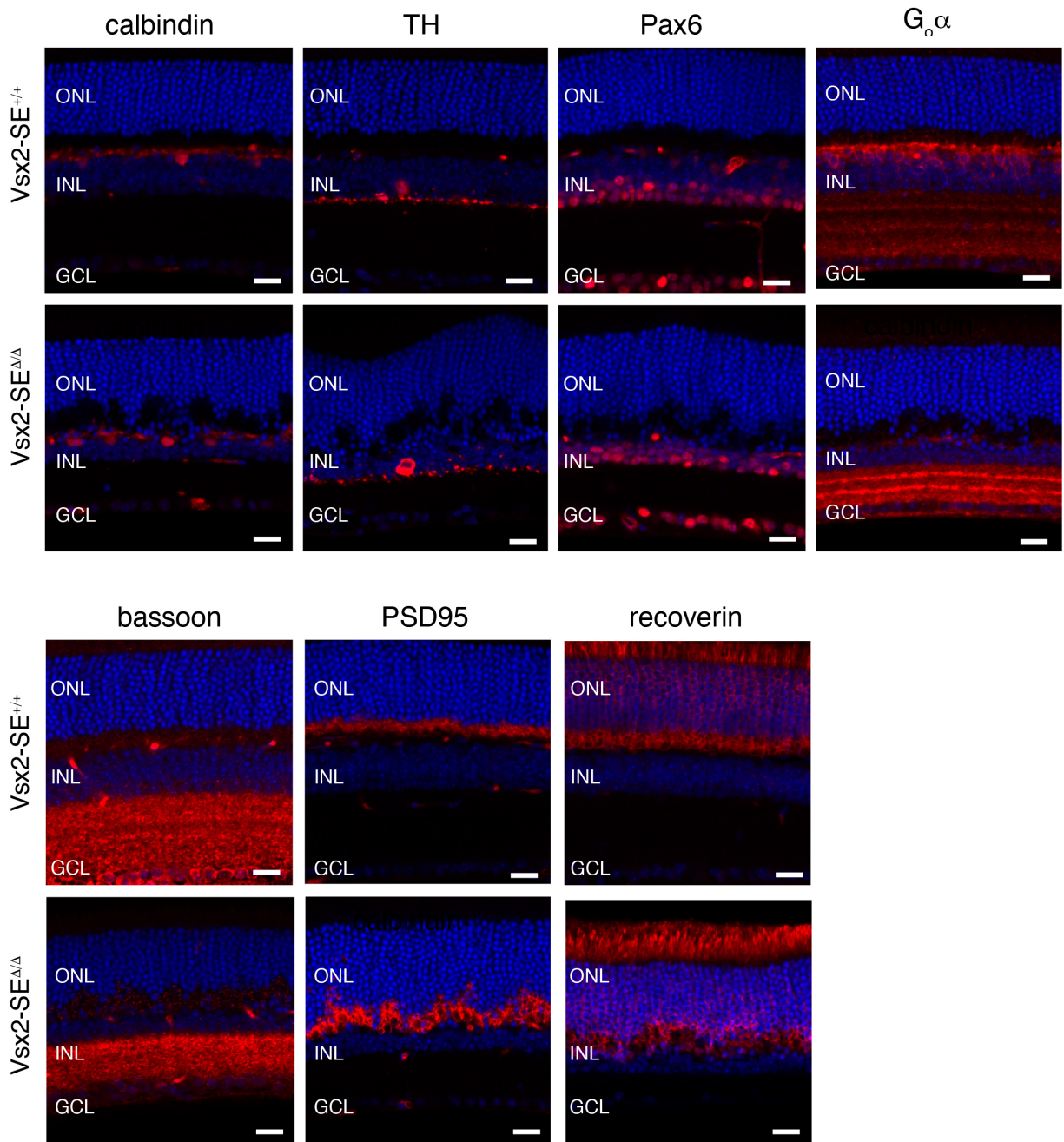


Figure S5 related to Figure 8. Immunostaining of *Vsx2-SE^{4/4}* retinae. Additional immunofluorescence for horizontal cells (calbindin), dopaminergic amacrine cells (TH), amacrine cells (Pax6), bipolar cells ($G_o\alpha$), synapses (bassoon and PSD95) and photoreceptors (recoverin). The sections were counterstained with DAPI (blue). Scale bars: 25 μ m.