

Supplementary Table S1. List of significant genes in stem/early TA cell population of corneal epithelium. Raw sequencing data was analyzed using 10X Genomics data analysis pipeline. The table was exported via the Loupe program.

Supplementary Table S2. List of significant genes in the mature TA cell population of corneal epithelium. Raw sequencing data was analyzed using 10X Genomics data analysis pipeline. The table was exported via Loupe program.

Supplementary Table S3. List of significant genes in cluster 9 of the integrated corneal epithelial cells from wild type and beclin 1<sup>+/-</sup> mice. Sequencing data from wild type and beclin 1<sup>+/-</sup> mice were integrated and analyzed using Seurat package in R.