Supplemental Data

Materials: Primary antibodies used in the supplemental data that were not listed in the Materials and Methods: Anti-Cre (#69050-3, END Millipore, Bellerica, MA, USA); anti-ERK (#9102) and anti-pERK (# 9101) (Cell Signaling, Danvers, MA, USA); anti-Krt13 (ab58744) and anti-Muc5AC (ab3649) (Abcam, Cambridge, MA, USA), anti-Krt17 (NBP2-16089, Novusbio, Littleton, CO, USA).

Figure S1. Muc5AC and keratin13 (Krt13) expression. (A, B) Immunofluorescence of Muc5AC (green) showing the presence of goblet (gb) cells in the conjunctiva of control and *Fgfr2*^{CKO} mice fed with Dox chow for 2 weeks. While no significant difference was observed in the goblet cell density between the control and *Fgfr2*^{CKO} mice, corneal epithelial layer (arrows) was drastically thinner in *Fgfr2*^{CKO} mice. **(C, D)** Krt13 expression (green fluorescence) in conjunctival epithelium was not altered in *Fgfr2*^{CKO} mice (D) when compared to that in control mice (C).

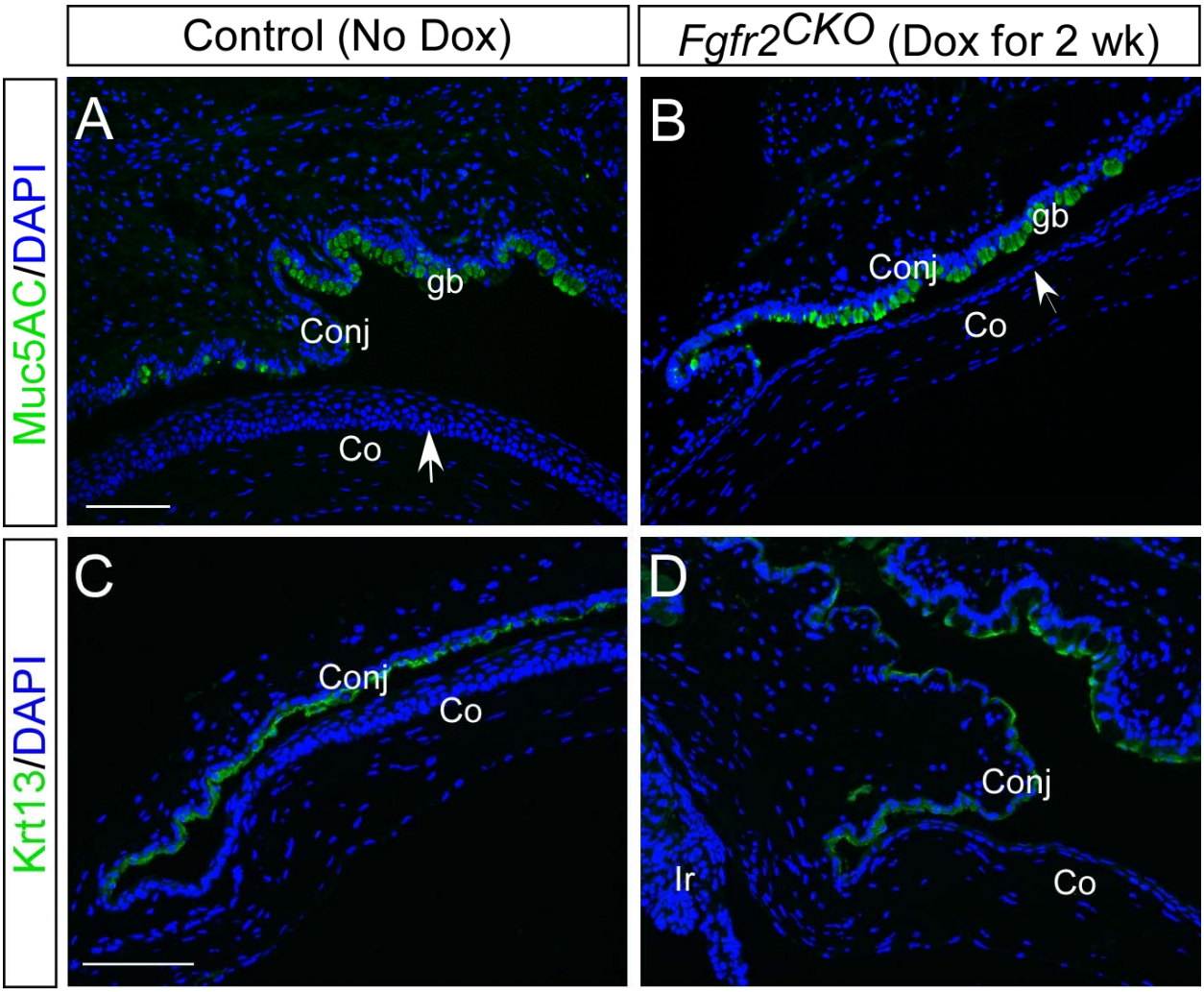

Figure S2. Cre and FGFR2 expression. (A-C) Cre immunohistochemistry counterstained with hematoxyline. In control mice (A, No Dox), a background signal (not specific to cell nuclei) was seen in MGs. After Dox feeding for 4 days (B), Cre expression was detected in the cell nuclei of MG acinar and ductal cells in *Fgfr2*^{CKO} mice, but its expression was low in some cell nuclei (indicated by arrows). After Dox feeding for 6 days (C), a stronger nuclear staining of Cre was found in most the acinar and ductal cells. (D-F) FGFR2 immunofluorescence. After 4 days of Dox feeding, FGFR2 immunofluorescence intensity was reduced in the MG acini (a) but still detectable in the ducts (d) of *Fgfr2*^{CKO} mice (E, E'). After Dox induction for 10 days, FGFR2 immunofluorescence was diminished in the MGs of *Fgfr2*^{CKO} mice (F, F'). FGFR2 signal was still seen in the conjunctival epithelial cells. M: muscles.

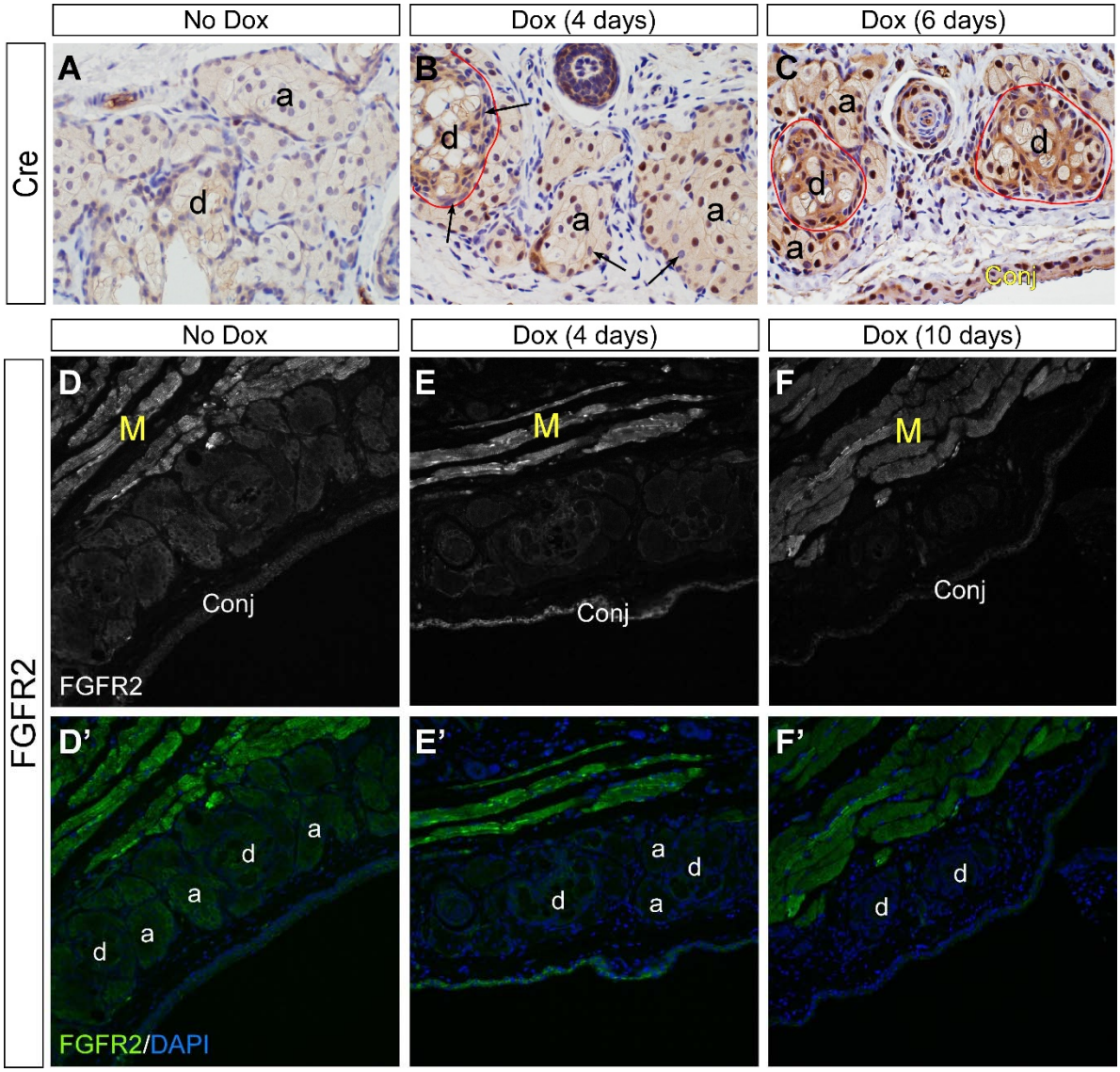

Fig. S3. Co-localization of PCNA and keratin 17 (Krt17). Krt17 immunofluorescence (red) was localized in the MG ducts in control (A, No Dox) and *Fgfr2*^{CKO} mice treated with Dox for 5 days (B). In control mice, PCNA (green) was found in the nuclei of acinar (a) and ductal (d) basal cells (arrows in A). In *Fgfr2*^{CKO} mice, most of the PCNA-positive nuclei were associated with MG ducts (arrows in B).

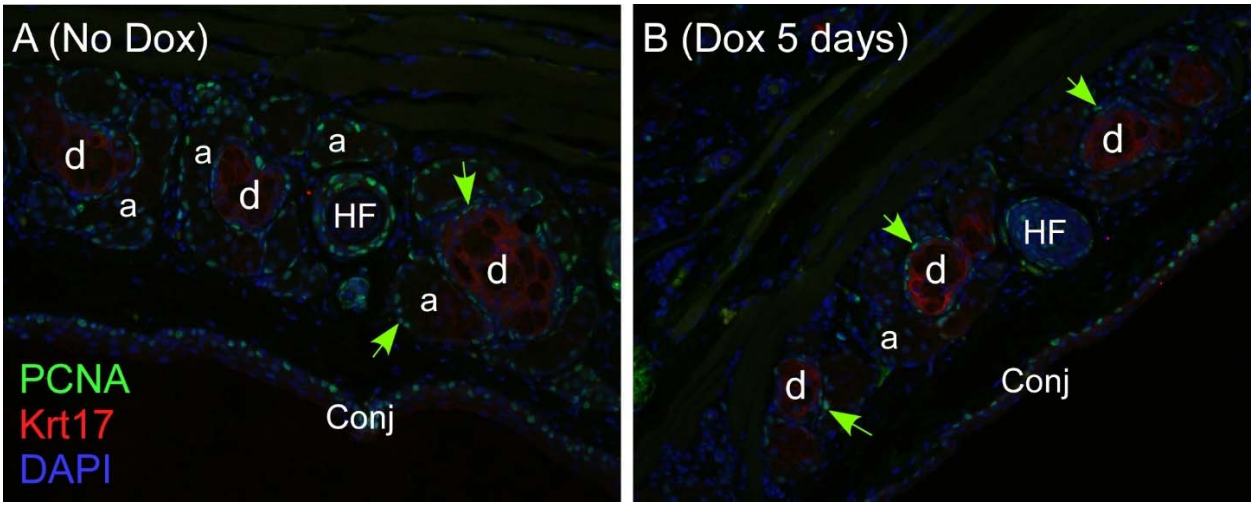

Fig. S4. Expression of ERK and pERK in MG acinar cells. ERK proteins were found in MGs of control (A) and *Fgfr2*^{CKO} mice fed with Dox for 4 days (C). ERK activity, as determined by the presence of pERK (arrows in B' and D'), was expressed primarily in the nuclei of MG acinar cells in both control (B, B') and *Fgfr2*^{CKO} (D, D') mice.