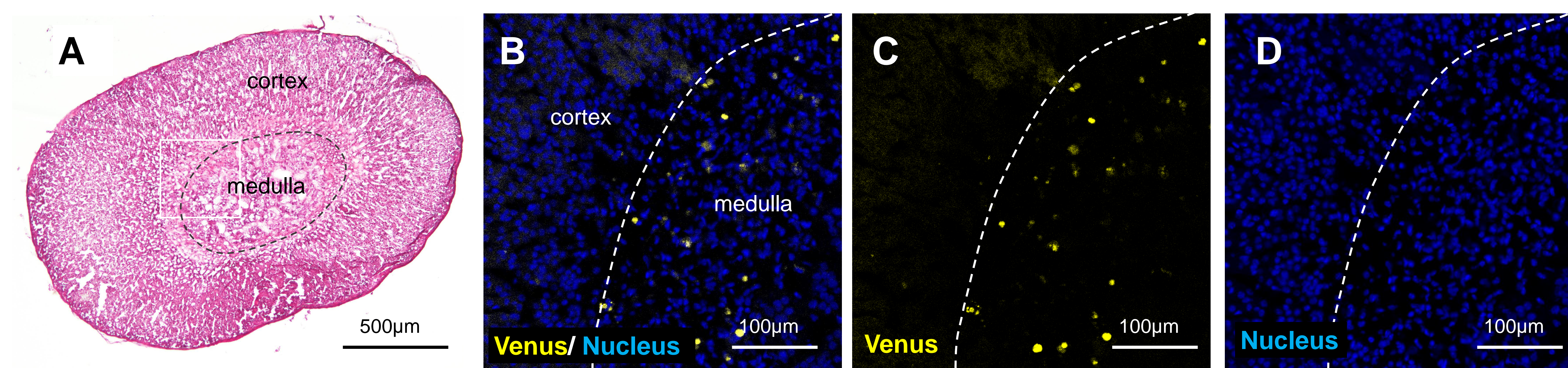


**Figure S1.** Confocal microscopic images of TRiCK mouse sublingual gland (SLG) and parotid gland (PG). (A-F). Boxed area in (A) is enlarged in (B-F). Scale bars: 200 μm (G), 50 μm (B-F). (G-L) The white arrowhead shows that TUBB3 is not localized to Venus-positive PG cells. Boxed area in (G) is enlarged in (H-L). Scale bars: 200 μm (G), 50 μm (H-L).





**Figure S2.** *Distribution of Sox1-dependent Venus positive cells in the TRiCK mouse adrenal gland.* (A-D) Mouse adrenal gland histology. Boxed area in (A) is enlarged in (B-D). co, cortex; me, medulla. Sox1-dependent Venus positive cells are dispersed in the medulla. Scale bars: 500  $\mu\text{m}$  (A), 100  $\mu\text{m}$  (B-D)



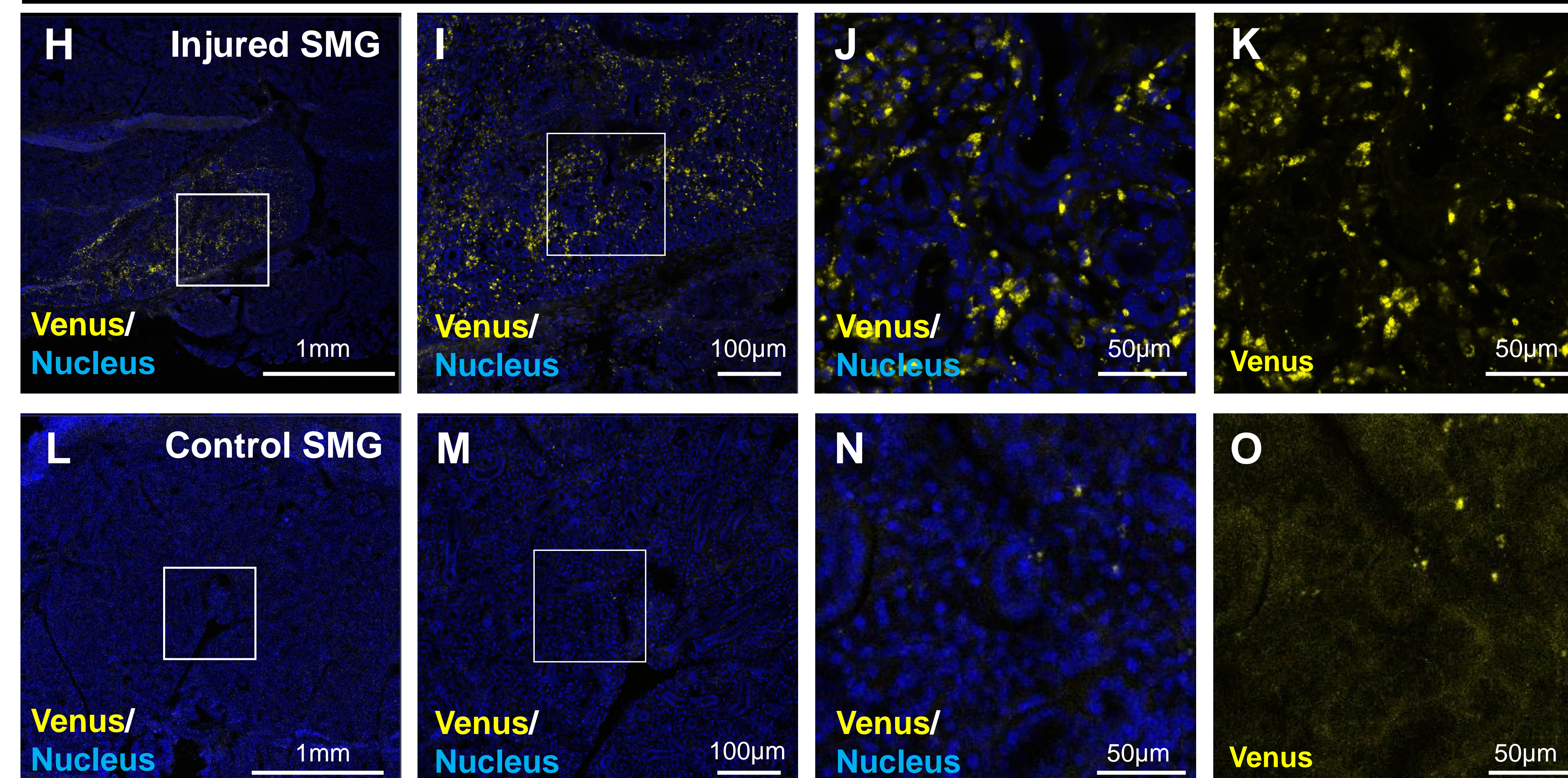
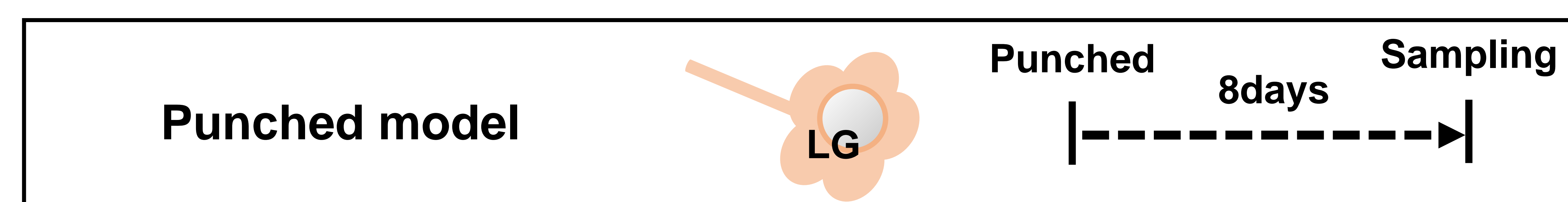
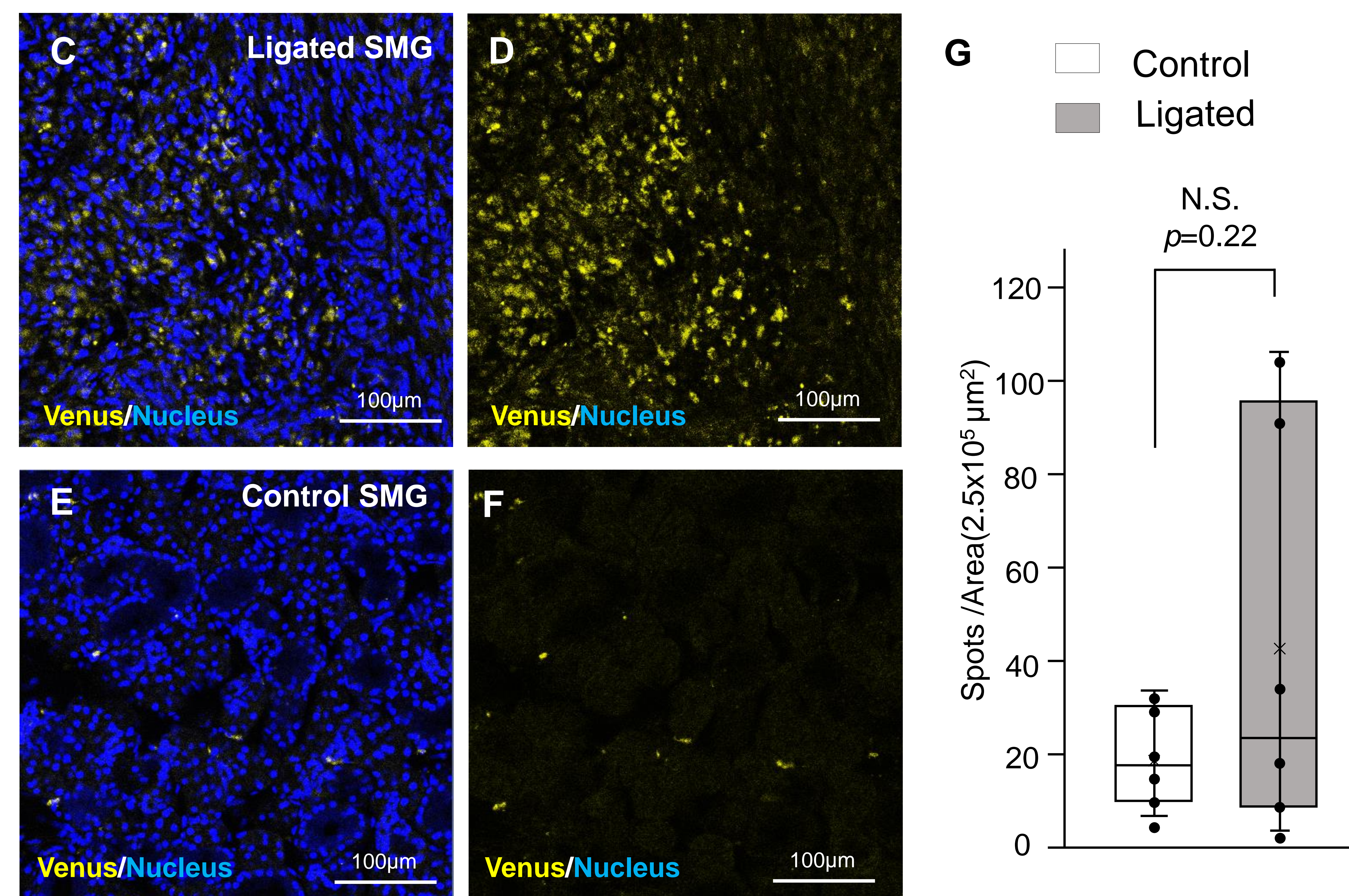
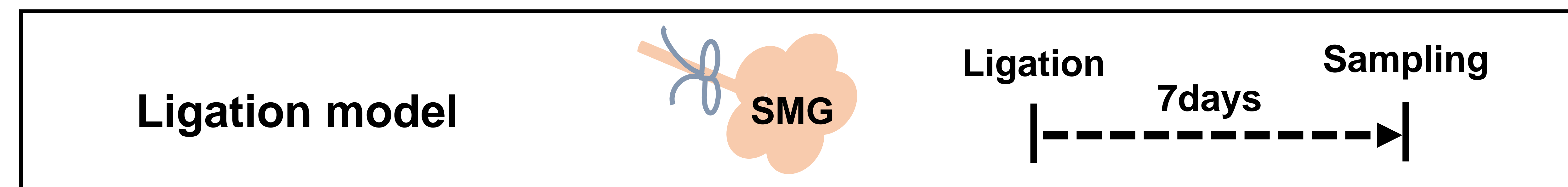
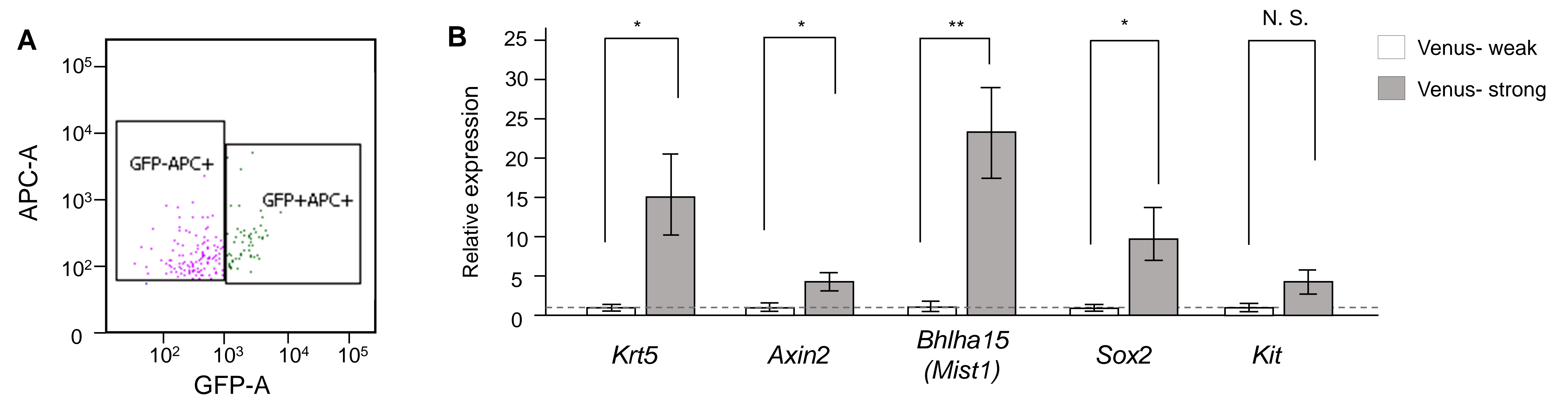
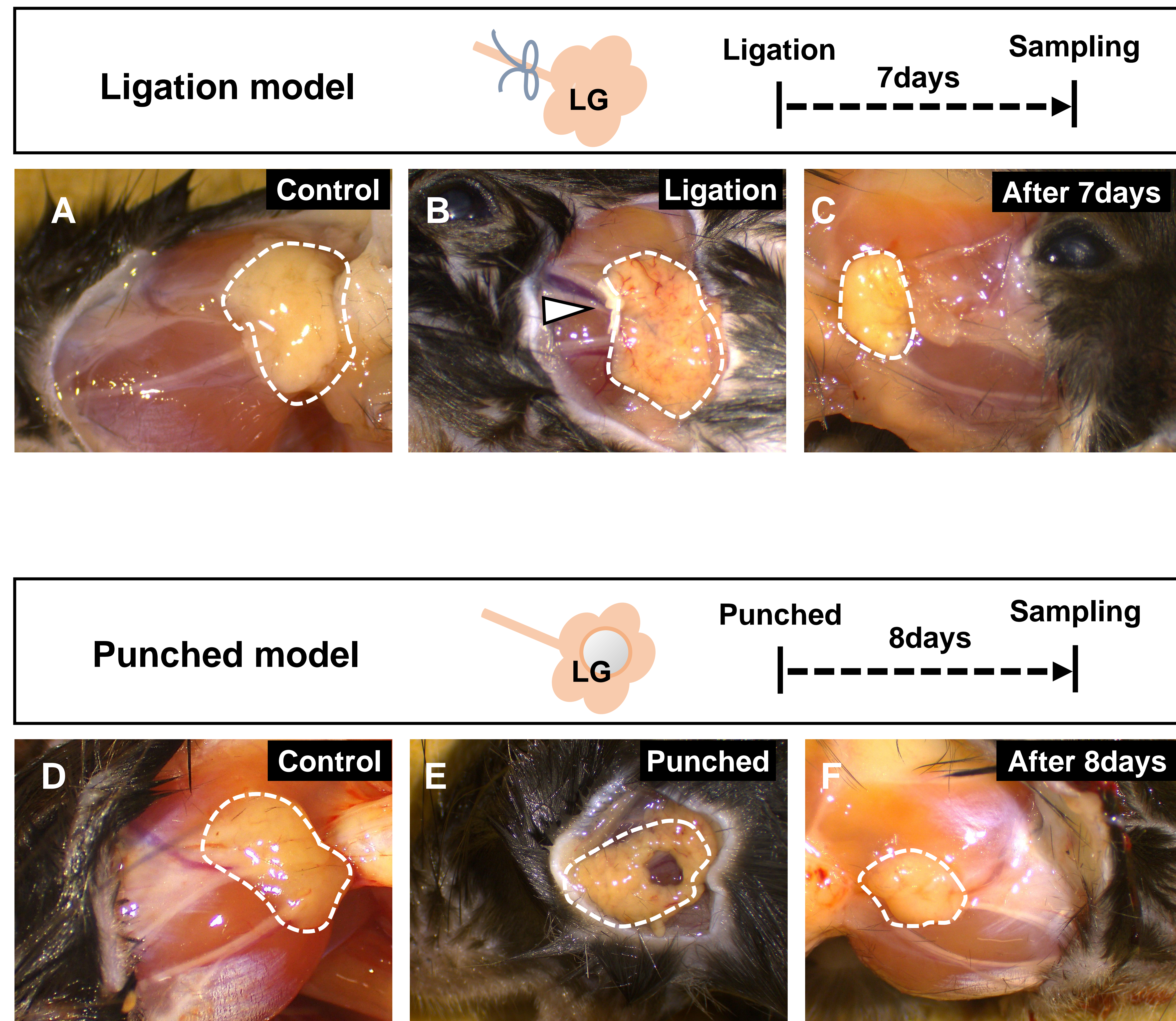


Figure S3



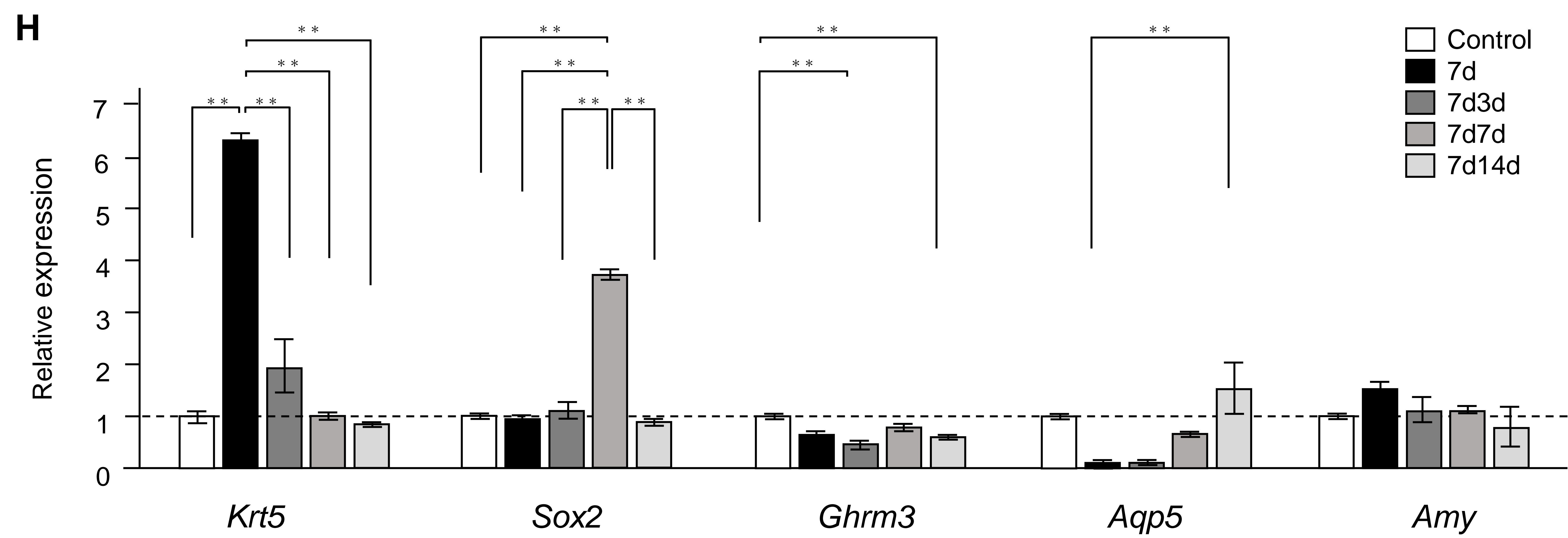
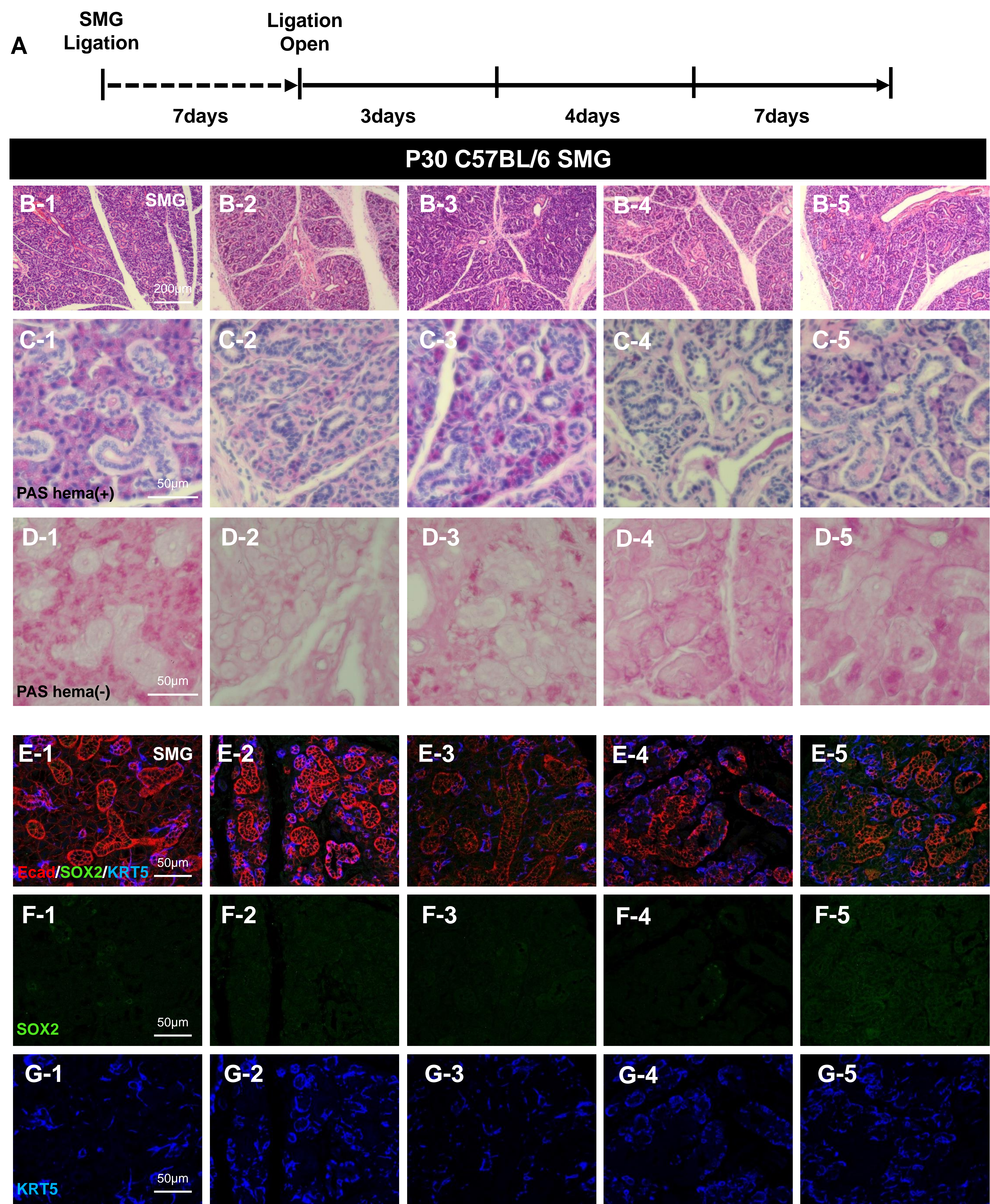
**Figure S3.** Contribution of *Sox1*-dependent Venus-positive epithelial cells to SMG tissue regeneration. (A) Single cells isolated from TRiCK SMG were stained with CD44. CD44-positive SMG epithelial cells separated those with strong and weak expression of Venus by fluorescence-activated cell sorter. (B) Comparison of *CK5*, *Axin2*, *Bhlha15*(*Mist1*), *Sox1*, and *Kit* expression between Venus-high and Venus-low SMG cells by quantitative RT-PCR. Error bars indicate standard deviations. n=6 \*\*  $p<0.01$ , \*  $p<0.05$ . Fluorescence images of TRiCK ligated (C, D) and control (E, F) SMG 7 days after ligation. Scale bars: 100  $\mu\text{m}$ . (G) The number of Venus-positive cells in one area from six individual mice, showing that ligated salivary glands had higher numbers of Venus-positive cells. Bars indicate mean values and standard deviations. No significant (N. S.) differences were found between the two groups. (H-I) Fluorescence images of SMG at 8 days after foundation, (L-O) and its control side SMG. Boxed areas in (H, L) are enlarged in (H, L), respectively. Boxed areas in (I, M) are enlarged in (J, K) and (N, ), respectively. Scale bars: 1 mm (H, L), 100  $\mu\text{m}$  (I-K), 50 $\mu\text{m}$  (M-O).





**Figure S4.** Stereoscopic images of pre- and postoperative lacrimal glands. (A) Contralateral control gland of a ligated mouse. (B) Just after ligation and (C) 7 days after conduit ligation. White arrowhead in (B) points to the ligation area. LG is in the dotted area. (D) Contralateral control gland of the punched mouse. (E) Just after punching and (F) 8 days after the operation.





**Figure S5**



**Figure S5.** *SMG changes in a duct ligation mouse model.*

(A) Time course of sampling in a duct ligation model. Images before ligation of SMG (B-1 to G-1). Images of ligated SMG obtained at 7 days after ligation (B-2 to G-2), at 3 days (B-3 to G-3), at 7 days (B-4 to G-4), or at 14 days (B-5 to G-5) after removal of the ligature. The process of SMG regeneration is shown with HE staining (B), hematoxylin and PAS staining (C), and PAS staining only (D). (E-G) Confocal images of protein expression obtained during salivary gland regeneration. E-cadherin (E-cad) (red), SOX2 (green), Cytokeratin 5 (CK5) (blue). Scale bars: 200  $\mu\text{m}$  (B), 50  $\mu\text{m}$  (C-G). (H) Changes in gene expression of salivary gland markers and regeneration markers as revealed by real time RT-PCR. \*\*  $p < 0.01$ , \*  $p < 0.05$ .



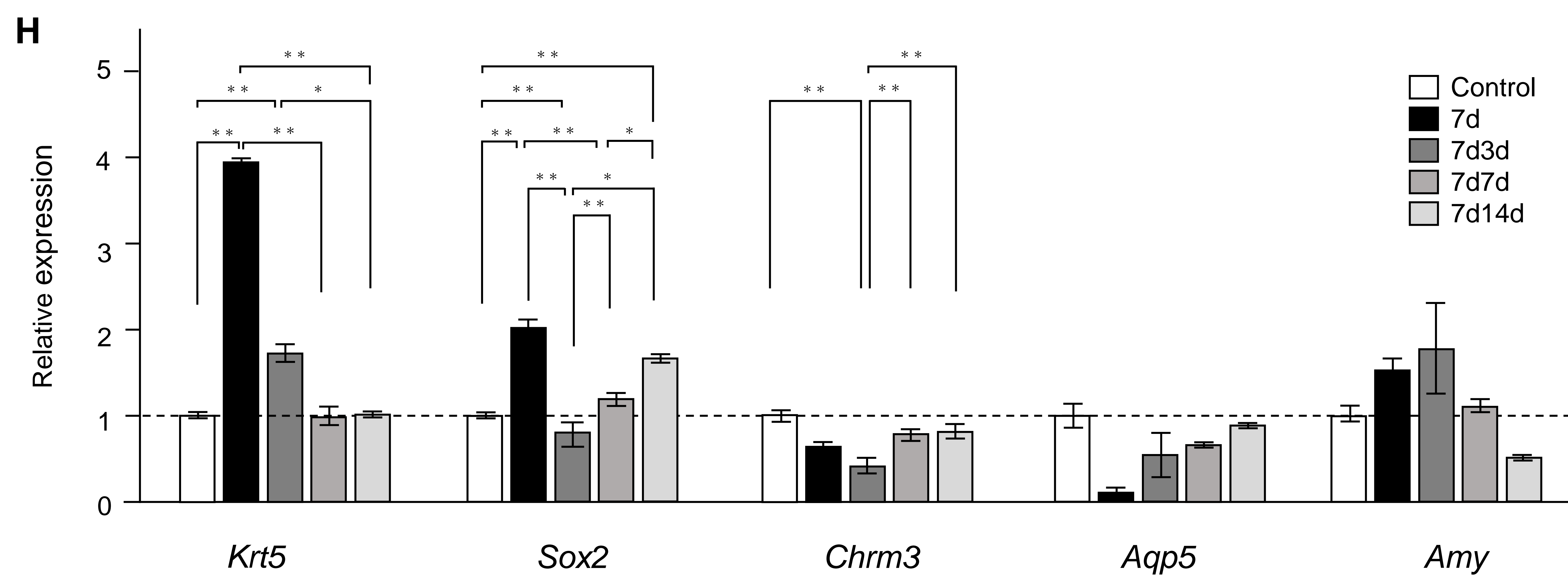
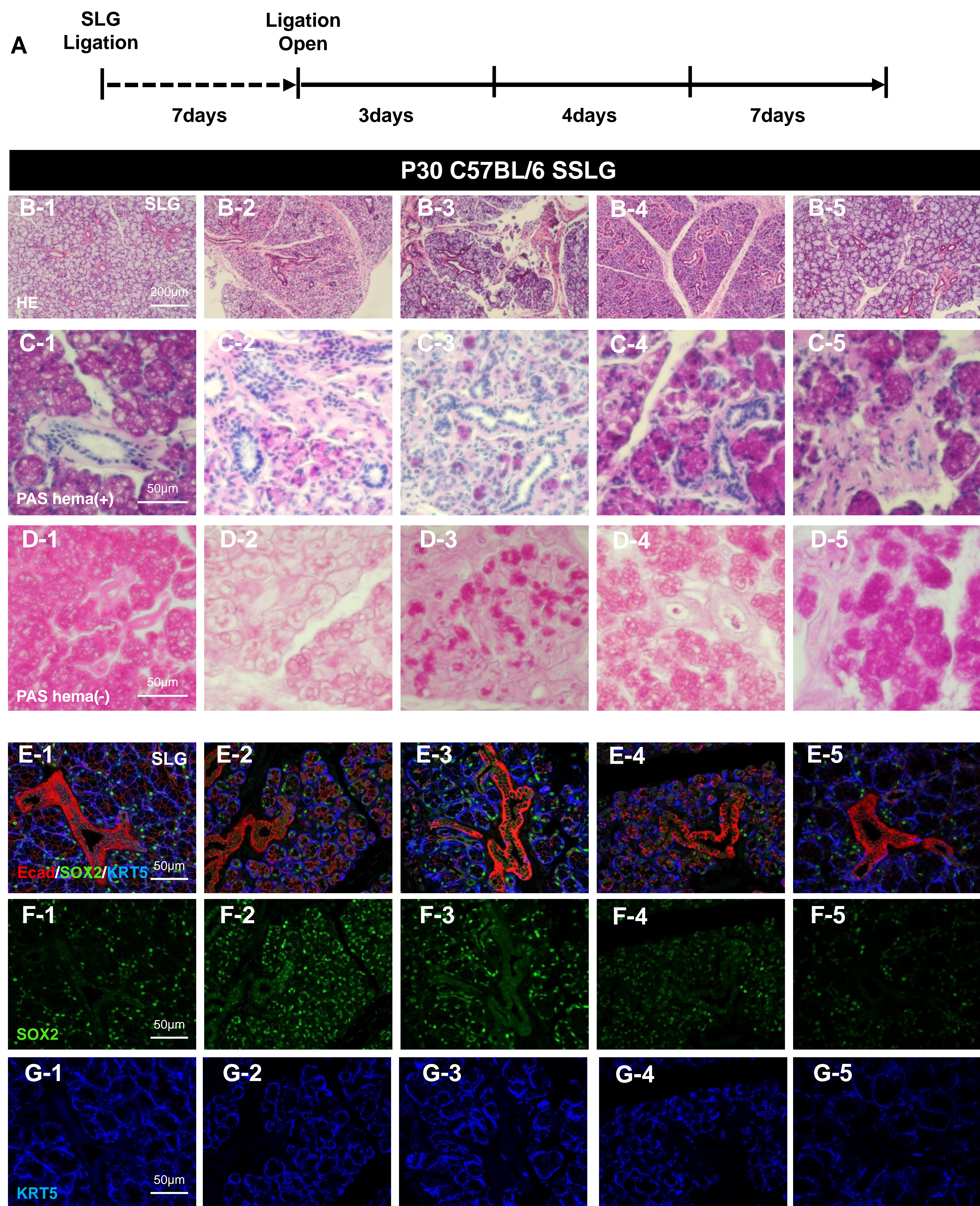


Figure S6



**Figure S6.** *SLG changes in a duct ligation mouse model.*

(A) Time course of sampling in a duct ligation model. Images before ligation of SLG (B-1 to G-1). Images of ligated SLG obtained at 7 days after ligation (B-2 to G-2), at 3 days (B-3 to G-3), at 7 days (B-4 to G-4), or at 14 days (B-5 to G-5) after removal of the ligature. The process of SLG regeneration is shown with HE staining (B), hematoxylin and PAS staining (C), and PAS staining only (D). (E-G) Confocal images of protein expression obtained during salivary gland regeneration. E-cad (red), Sox2 (green), Cytokeratin 5 (CK5) (blue). Scale bars: 200  $\mu\text{m}$  (B), 50  $\mu\text{m}$  (C-G). (H) Changes in expression of salivary gland marker and regeneration marker genes as revealed by real time RT-PCR. \*\*  $p < 0.01$ , \*  $p < 0.05$ .



Table S1. Primer sequences for real time qPCR	
Primer names	Primer sequences
<i>Gapdh</i> -F	5′ -CCATCACCATCTTCCAGGAG-3′
<i>Gapdh</i> -R	5′ -GCATGGACTGTGGTCATGAG-3′
<i>Sox10</i> -F	5′ -CACATCGACTTCGGCAACGT-3′
<i>Sox10</i> -R	5′ -CCGTTGGGTGGCAGGTATT-3′
<i>Krt5</i> -F	5′ -ATCGCCACTTACCGCAAGCTGCTGGAGGG-3′
<i>Krt5</i> -R	5′ -AAACACTGCTTGTGACAACAGAG-3′
<i>Axin2</i> -F	5′ -AAGAGAAGCGACCCAGTCAATCC-3′
<i>Axin2</i> -R	5′ -GGTTCCACAGGCGTCATCTCC-3′
<i>Bhlha15(Mist1)</i> -F	5′ -GGCTAAAGCTACGTGTCCTTG-3′
<i>Bhlha15(Mist1)</i> -R	5′ -GGTGAGGCCCTTCCAAC-3′
<i>Sox2</i> -F	5′ -GGGAAATGGGAGGGGTGCAAAAGAGG-3′
<i>Sox2</i> -R	5′ -TTGCGTGAGTGTGGATGGGATTGGTG-3′
<i>Kit</i> -F	5′ -CCCATGTATGAAGTACAGTGGAAG-3′
<i>Kit</i> -R	5′ -CTGATTAAGTCGGATGCGGCCATG-3′
<i>Chrm3</i> -F	5′ -TCGGTAGAGCGGACTGGACA-3′
<i>Chrm3</i> -R	5′ -TCCACTGAGCAAGTCAGAAGTGAAG-3′
<i>Aqp5</i> -F	5′ -TGGAGCAGGCATCCTGTACT-3′
<i>Aqp5</i> -R	5′ -CGTGGAGGAGAAGATGCAGA-3′
<i>Amy</i> -F	5′ -GGATGGAGAAAAGATGTCCTAC-3′
<i>Amy</i> -R	5′ -CATCACCCGTGTGAAACC-3′

Table S1



Table S2. Frequency of Venus-positive glandular epithelial cells																			
	SMG				SLG				PG				LG				Nervus opticus		
	Duct		Acinus		Duct		Acinus		Duct		Acinus		Duct		Acinus				
Sample	Right	Left	Right	Left	Right	Left	Right	Left	Right	Left	Right	Left	Right	Left	Right	Left	Right	Left	
A	-	-	-	-	-	-	-	-	+	+	-	-	+	-	-	+	+	+	
B	-	-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	+	+	
C	-	-	-	-	-	-	-	-	-	-	+	-	-	-	-	-	+	+	
D	-	+	-	+	-	-	-	-	+	+	-	-	-	+	-		+	+	
E	-	-	-	-	-	-	-	-	+	+	-	-	+	-	+	+	+	+	
F	-	-	-	-	-	-	-	-	+	+	-	-	-	+	-	-	+	+	
G	+	+	-	-	+	-	+	-	+	+	-	-	+	+	+	-	+	+	
H	-	+	-	-	-	+	-	-	-	+	-	-	-	+	-	-	+	+	
I	+	-	-	-	-	-	-	-	+	-	-	-	+	-	+	-	+	+	
J	+	-	-	-	+	-	-	+	+	-	-	-	-	-	-	-	+	+	
K	+	+	-	-	+	-	-	-	+	+	-	-	-	-	-	-	+	+	
Percentage of individuals with positive epithelial appearance organ	36.36%		4.54%		18.18%		9.09%		72.72%		4.54%		36.36%		22.72%		100%		

*Table S2. Frequency of Venus-positive glandular epithelial cells.*