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Supplemental Information

Optical Clearing in the Kidney Reveals Potassium-Mediated Tubule Remodeling

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Inventory of Supplemental Information

Figure S1. Related to Figure 1. Segment-specific localization of Ki-67$^+$ cells in thin kidney sections.

Figure S2. Related to Figure 1. Segment-specific localization of BrdU$^+$ cells in thin kidney sections.

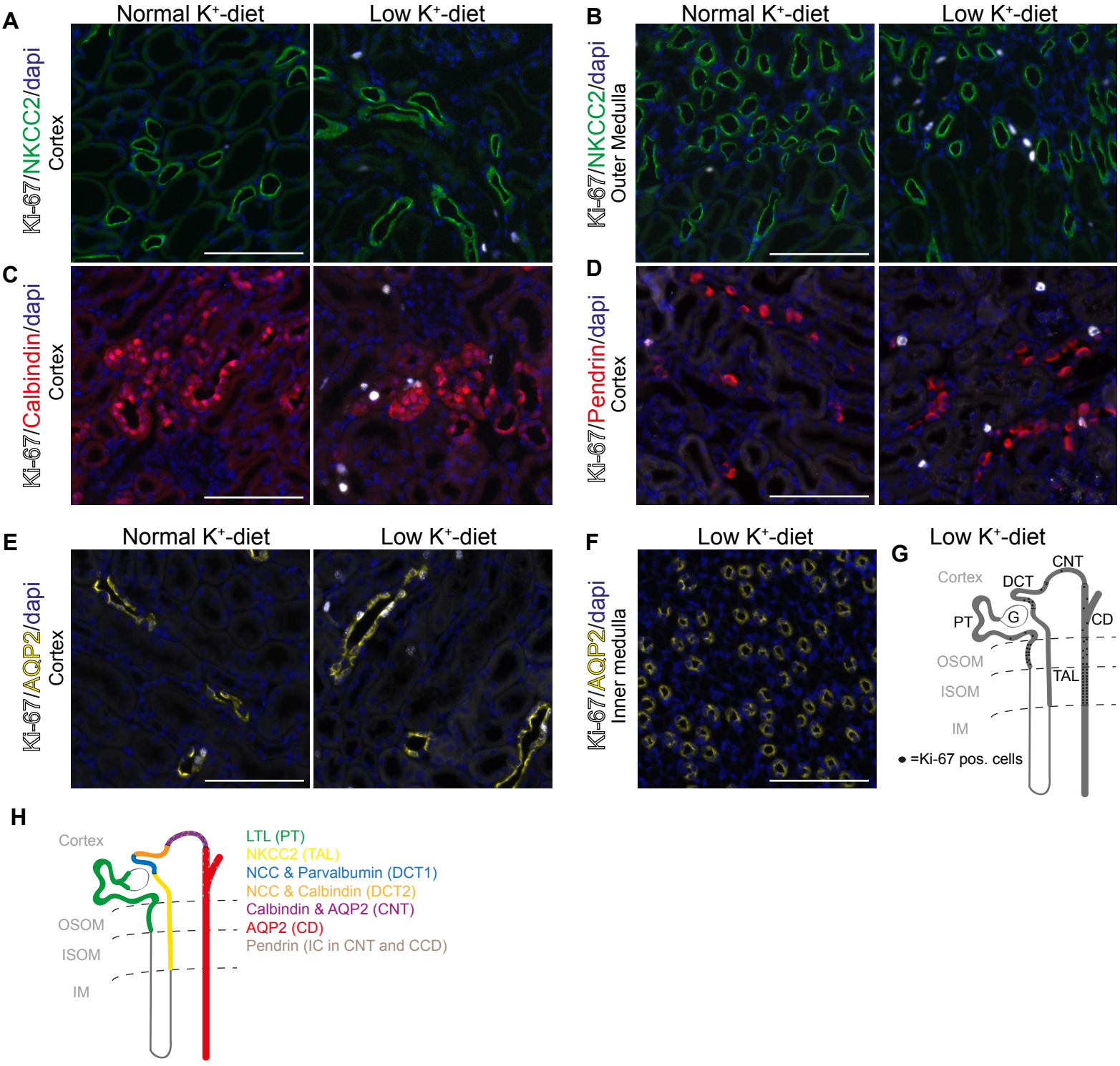

Figure S1. Related to Figure 1. Segment-specific localization of Ki-67⁺ cells in thin kidney sections. A-D: No or only few Ki-67⁺ cells were found in cortical or medullary NKCC2⁺ thick ascending limb of henle (TAL), calbindin⁺ distal convoluted tubule (DCT2)/connecting tubule (CNT) or pendrin⁺ intercalated cells (IC). **E, F:** Ki-67⁺ cells were observed in AQP2⁺ cortical collecting duct (CCD), but not in inner medulla. **G:** Summary of low K⁺-induced segment-specific proliferation based on Ki-67 immunolabeling. **H:** Scheme of the investigated tubule segments: Lotus Tetragonolobus Lectin (LTL) was used to label brush borders specific for proximal tubules (PT). PT reabsorbs salt, water and organic solutes and secretes ammonium into the lumen. Antibody against sodium-potassium-chloride-contransporter 2 (NKCC2) was used to label TAL, which is relevant for salt reabsorption. Sodium-Chloride-cotransporter (NCC) is specifically expressed in entire DCT, whereas parvalbumin and calbindin are expressed in DCT1 and DCT2, respectively. DCT1 and 2 play a differential role in ion transport. Calbindin is also expressed in CNT. Pendrin is expressed in IC in CNT and CCD, where it is involved in bicarbonate secretion. Aquaporin-2 (AQP2) is expressed in CNT and collecting duct (CD), and both segments are involved in urine concentration and electrolyte transport. *n* = 6-7 mice.

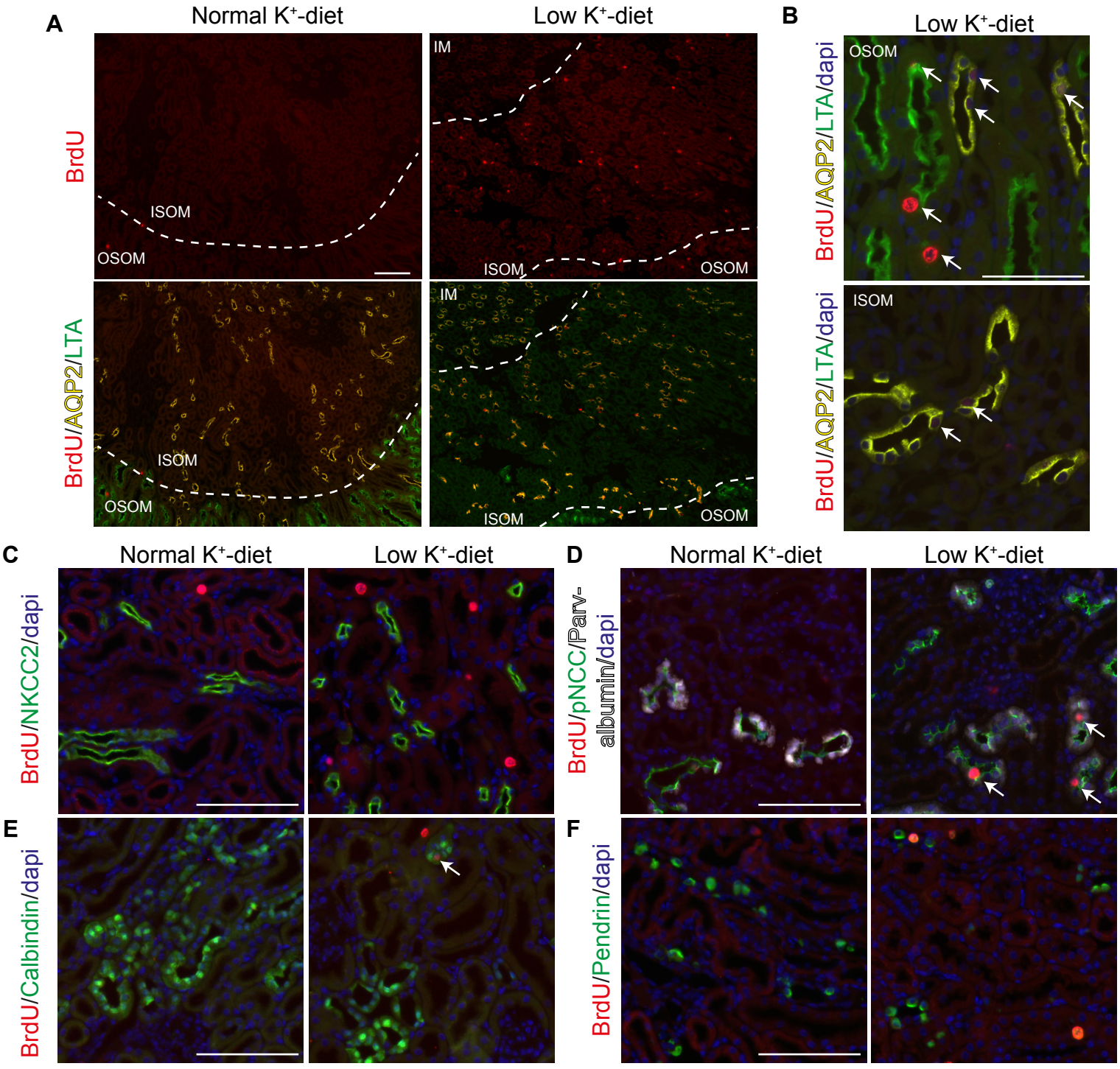

Figure S2. Related to Figure 1. Segment-specific localization of BrdU⁺ cells. A: Immunofluorescence of 4 µm thin sections revealed that low K⁺ diet increased number of BrdU⁺ cells in inner stripe of the outer medulla (ISOM). **B:** Arrows indicate BrdU⁺ cell in proximal tubules (LTL⁺) and medullary collecting duct (AQP2⁺). **C-F:** Low-K⁺ diet induced proliferation in DCT1 (parvalbumin⁺, pNCC⁺) (D), but not in thick ascending limb (NKCC2⁺) (C), DCT2 (calbindin⁺, pNCC⁺) (E), connecting tubules (calbindin⁺) (E) or intercalated cells in the distal nephron (pendrin⁺) (F). **G:** Summary of low K⁺-induced segment-specific proliferation based on BrdU immunolabeling. All scale bars = 100 µm. *n* = 6-7 mice. OSOM, outer stripe of the outer medulla; IM, inner medulla.