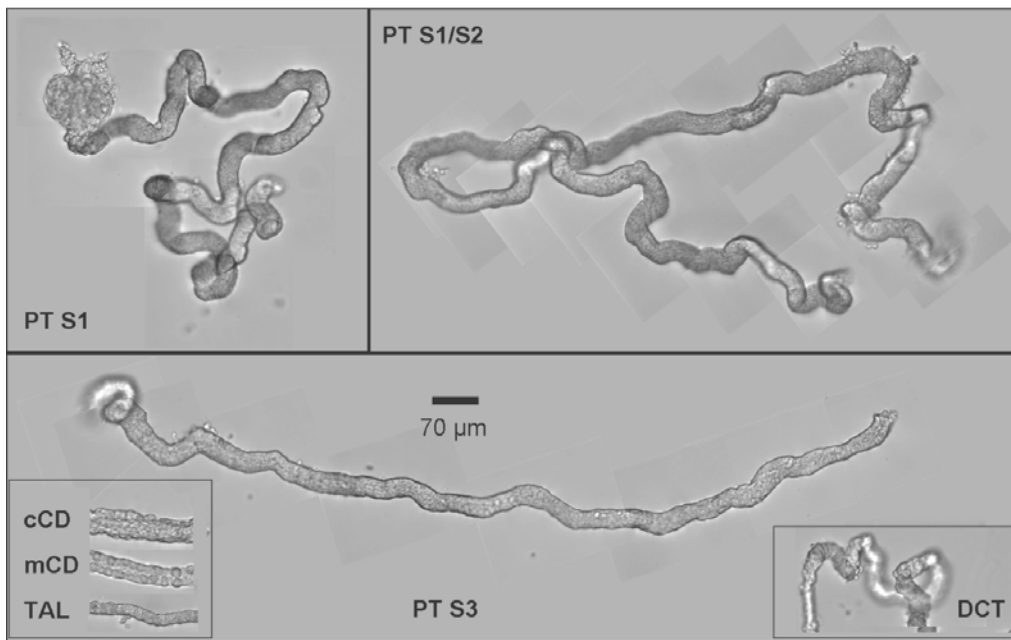


Supplementary Fig. 1. Demonstration of the phenotypes of isolated nephron portions to identify proximal tubule (PT) S1 to S3 segments. PT's were sorted and divided into three batches. PT S1 segments were identified by their attachment to glomeruli and tight convolutions, PT S1/S2 segments by their greater length and wider convolutions, PT S3 segments by their straight course, opaque appearance, slight, corkscrew-like windings, and their transitions to the descending thin limbs. For comparison, cortical thick ascending limbs (TAL) were thin and smooth. Distal convoluted tubules (DCT) were short and attached to TAL or connecting tubules (CNT) and had a distinct structure. Collecting ducts (cCD, mCD) had a cobblestone-like epithelial structure.

Supplementary Fig. 2. Verification of conditional megalin knockout mice and opossum kidney cell line. (A) Cre(+) mice display significantly reduced renal megalin expression compared to Cre(-); western blot. (B) Immunofluorescence staining shows vesicular megalin signal in OK cells; cell junctions are labeled with anti-ZO-1 antibody. (C) Like in mouse kidney BBM fraction, OK cells (OKC) show megalin signal in the 600 kDa range. (D) Cultured OK cells grown on PET filter; transepithelial resistance increases with time, ranging at $180 \Omega \times \text{cm}^2$ after having reached confluence. Bar = 10 μm .

Supplementary Figure 1



Supplementary Figure 2

