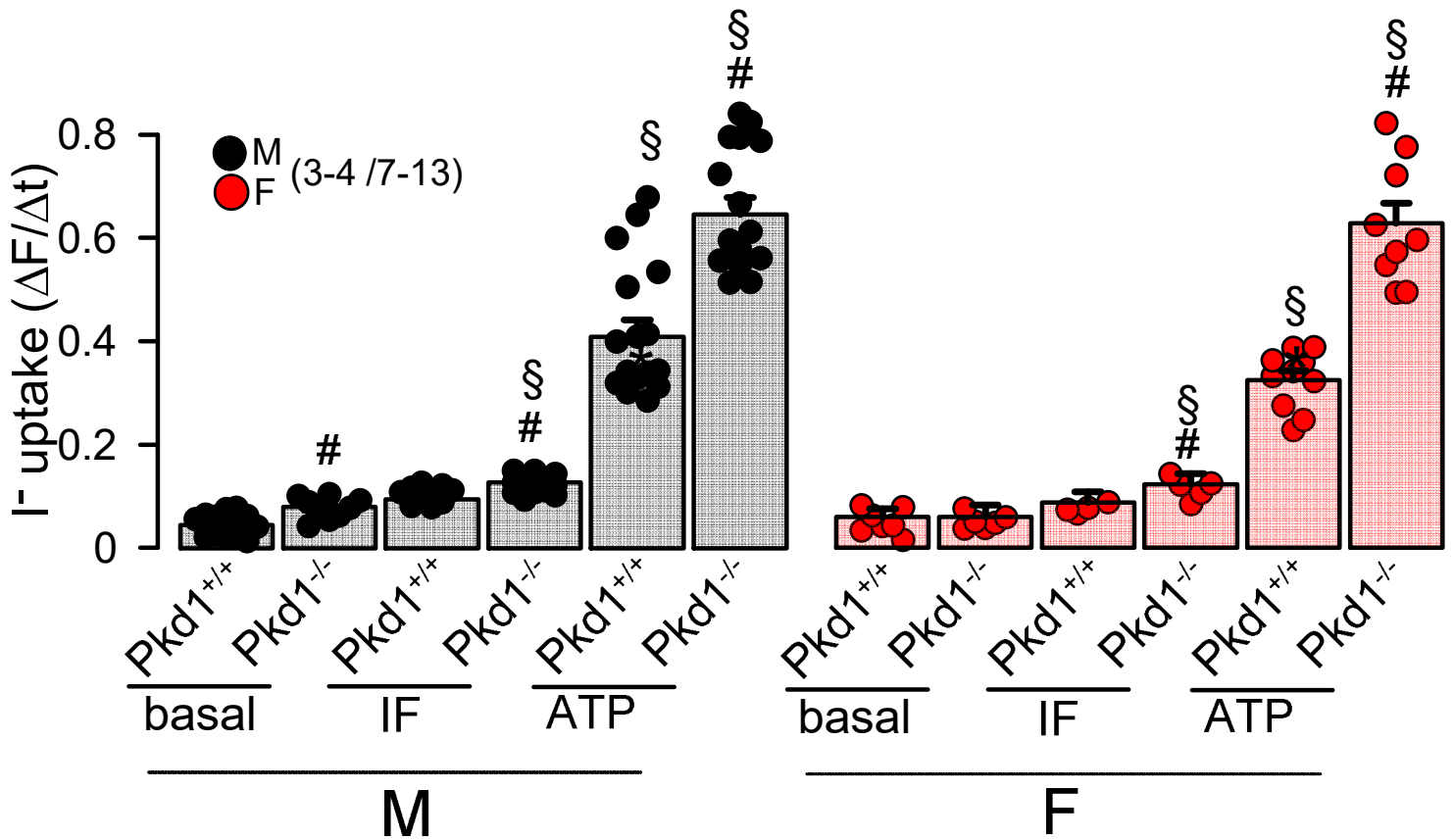
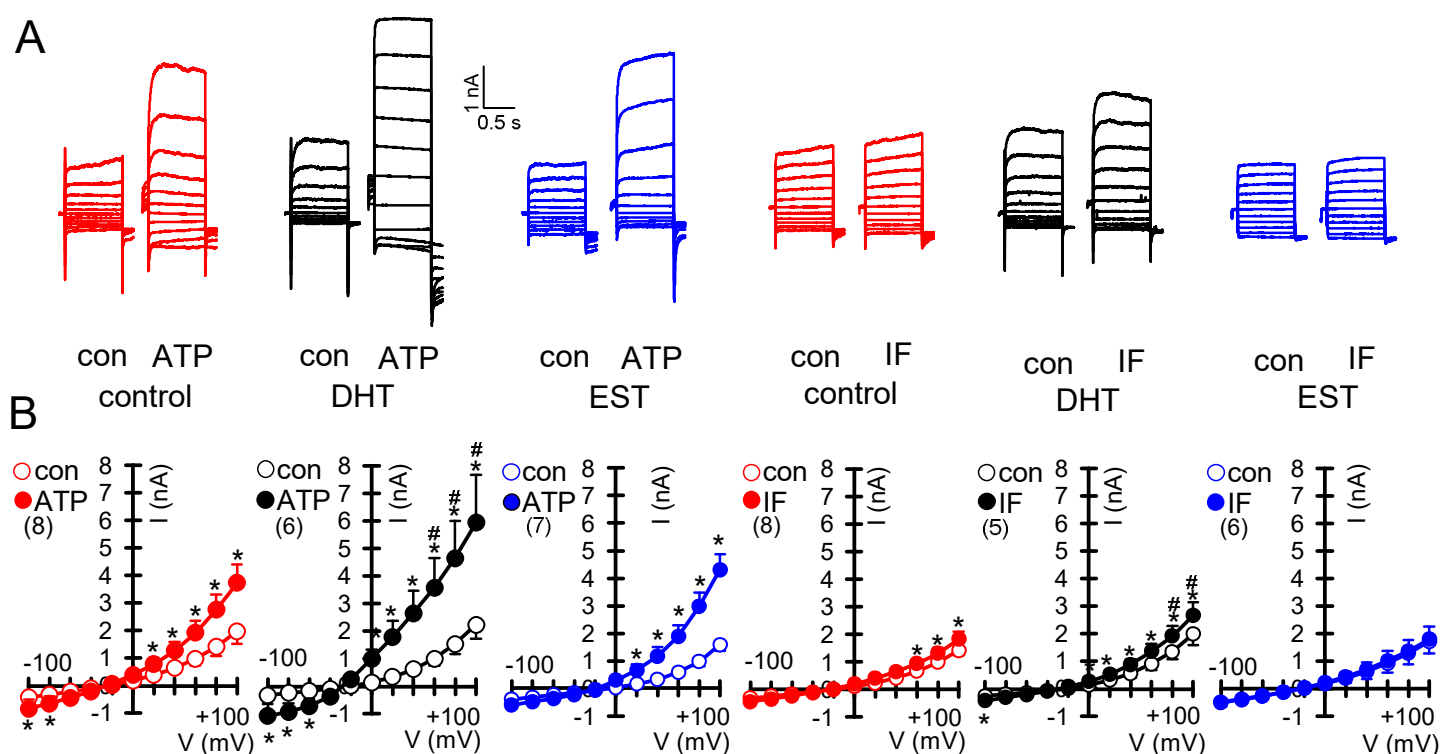


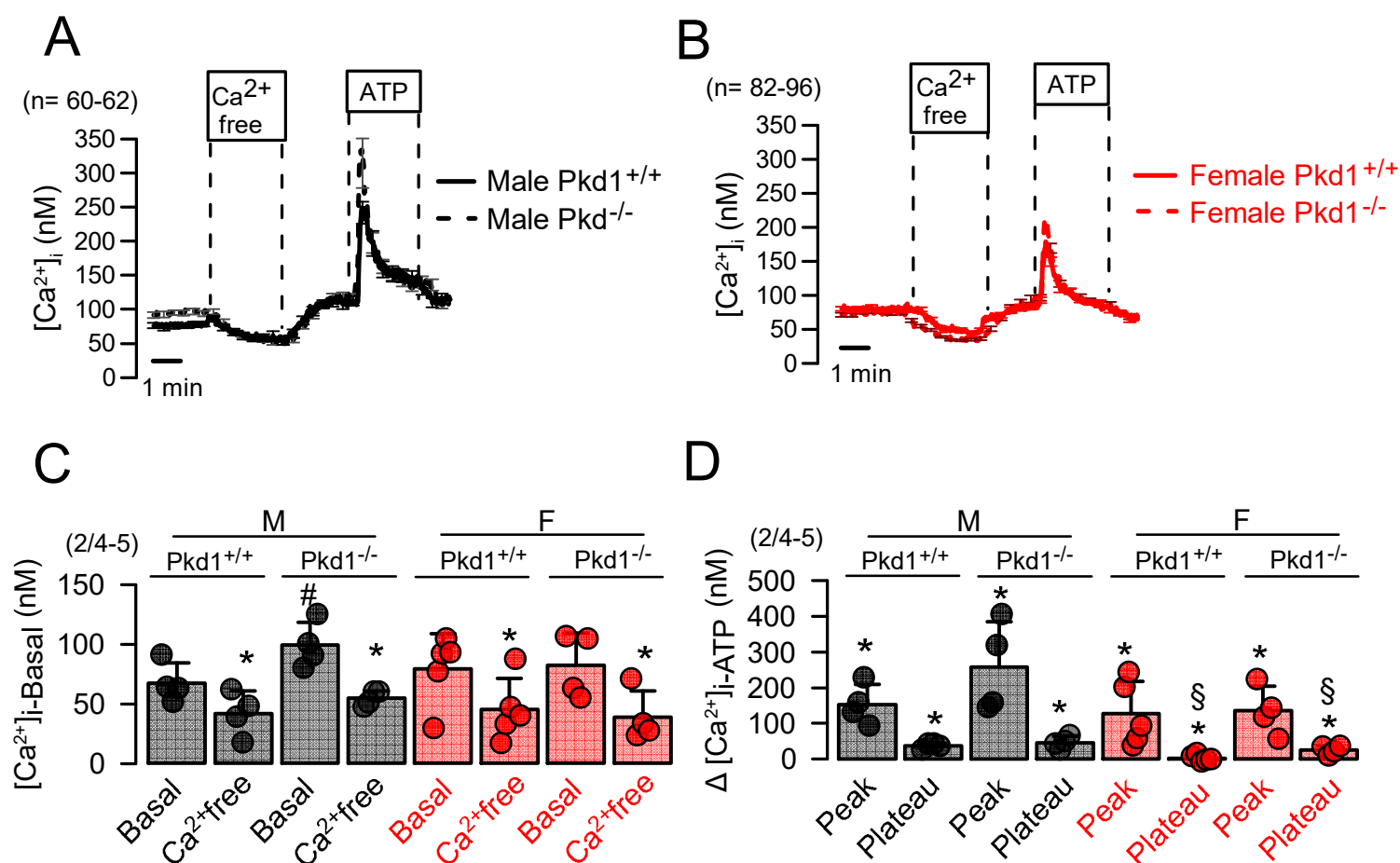
Supplementary Figure S1. *CFTR* mRNA expression in primary renal epithelial cells. Semiquantitative RT-PCR analysis of *CFTR* mRNA expression in primary medullary renal epithelial cells from male (M) and female (F) Pkd1^{+/+} and Pkd1^{-/-} mice. Mean ± SEM (number of animals). # indicates significant knockdown of Pkd1 (p<0.05; unpaired t-test).



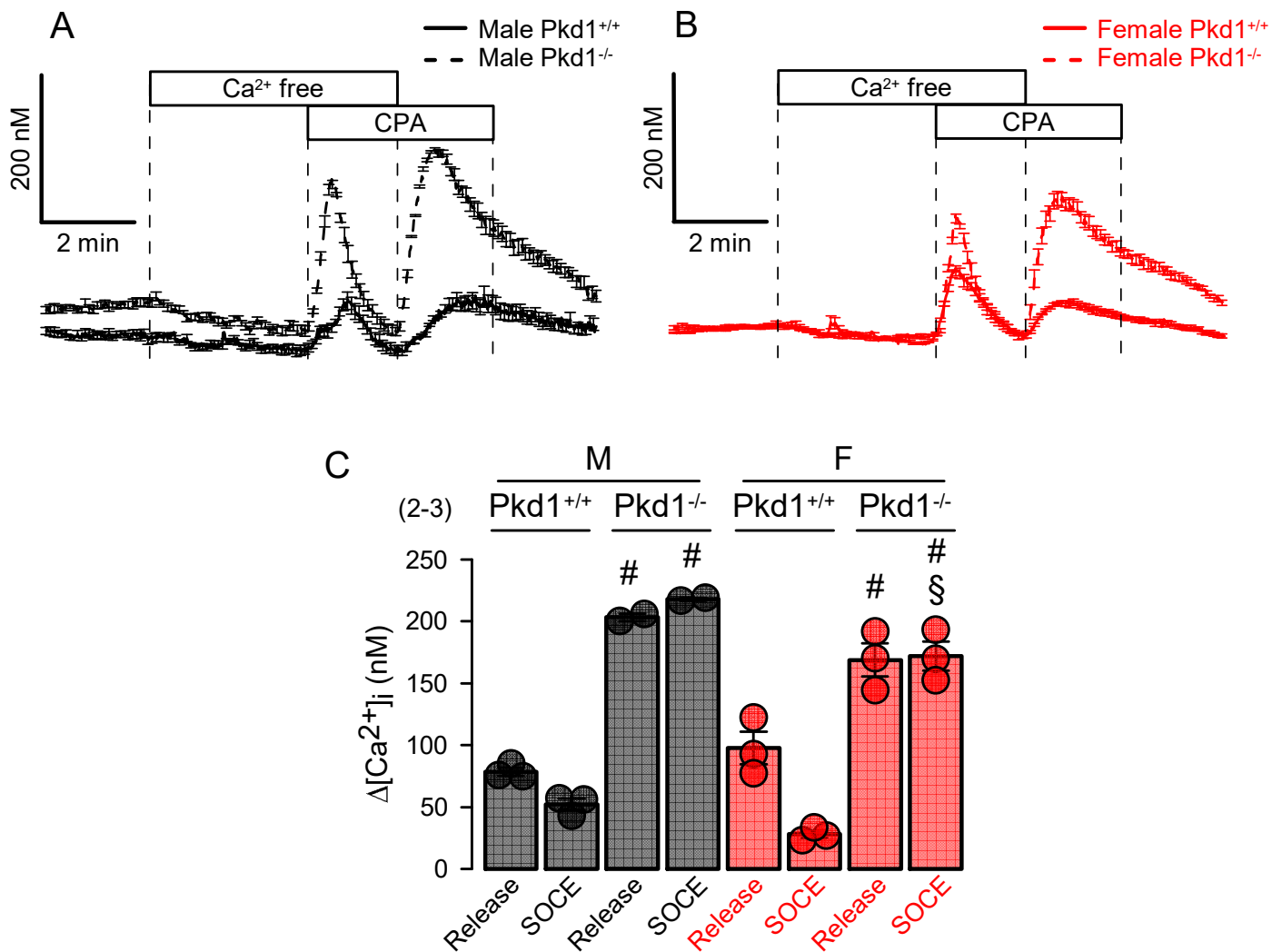
Supplementary Figure S2. *YFP-quenching to assess anion permeability.* Summaries of single cell yellow fluorescence protein (YFP) iodide quenching (I^- uptake) experiments in primary renal epithelial cells from male and female Pkd1^{+/+} and Pkd1^{-/-} mice. I^- uptake was assessed under basal conditions and after stimulation with IF (100 μ M/2 μ M) or ATP (50 μ M). Mean \pm SEM (number of animals/number of experiments in each series). #significant difference compared to Pkd1^{+/+} ($p < 0.05$; unpaired t-test). §significant difference compared to basal ($p < 0.05$; ANOVA and Tukey's post-hoc test).



Supplementary Figure S3. Ion currents in M1 mouse collecting duct cells. A) Overlay currents for ATP (100 μ M) and IBMX/forskolin (IF; 100 μ M/2 μ M) - activated whole cell currents in untreated cells (control) and cells treated with dihydrotestosterone (DHT; 10 μ M, 24 hrs) or estrogen (EST; 10 μ M, 24 hrs). B) Summary current / voltage relationships corresponding to overlay currents shown in A (mean \pm SEM in A; Mean \pm SEM in B). *significant increase by ATP or IF ($p < 0.05$; paired t-test). #significant difference compared to control ($p < 0.05$; ANOVA and Tukey's post-hoc test).



Supplementary Figure S4. Basal and ATP-induced intracellular Ca^{2+} in primary renal epithelial cells. A,B) Summary time course for basal and ATP (100 μ M) -induced intracellular Ca^{2+} concentrations in male (A) and female (B) Pkd1^{+/+} and Pkd1^{-/-} mice. C,D) Summary of basal (C) and ATP-induced (D) intracellular Ca^{2+} concentrations in male and female PKD1^{+/+} and PKD1^{-/-} mice. Mean \pm SEM (number of experiments). *significant effect by extracellular Ca^{2+} free and ATP ($p < 0.05$; paired t-test). #significant difference compared to Pkd1^{+/+} ($p < 0.05$; ANOVA). §significant difference compared to male ($p < 0.05$; ANOVA).



Supplementary Figure S5. CPA-induced store release in male and female primary renal epithelial cells. CPA-induced Ca²⁺ store release in primary renal epithelial cells from male (A) and female (B) Pkd1^{+/+} and Pkd1^{-/-} mice. C) Summary of store release Ca²⁺ and store operated Ca²⁺ entry (SOCE) shown in A and B. Mean \pm SEM (number of experiments). #significant difference when compared to Pkd1^{+/+} (p<0.05; unpaired t-test). §significant difference compared to male (p<0.05; ANOVA and Tukey's post-hoc test).