

Supplementary video legends

Supplementary video S1. Time-dependent changes in intracellular fluorescence in distal tubules in a SFBI-loaded, 300- μm -thick, live kidney slice from of a 3-month-old wild-type mouse treated at time 0 with rFGF23 (100 ng/ml) *in vitro*. After 105 min, 10 μM of the NCC inhibitor chlorothiazide (CTZ) or vehicle (PBS + 1% ethanol) was added. Due to unavoidable delays caused by sample handling, 8 frames (\sim 4 min) are missing after addition of CTZ.

Supplementary video S2. Time-dependent changes in intracellular fluorescence in distal tubules in a SFBI-loaded, 300- μm -thick, live kidney slice from of a 3-month-old wild-type mouse treated at time 0 with vehicle (PBS) *in vitro*. After 105 min, 10 μM of the NCC inhibitor chlorothiazide (CTZ) or vehicle (PBS + 1% ethanol) was added. Due to unavoidable delays caused by sample handling, 8 frames (\sim 4 min) are missing after addition of CTZ.