

**Supplementary Figure S3** Mutation of Slo3 does not affect the K<sup>+</sup> current from heterologously (HET) expressed Slo3 in HEK293 cells. Representative Slo3 currents in response to indicated voltage steps, recorded from HEK293 cells transfected with a WT Slo3 (left panel) or with a mixture of WT and Mutant (W768R) Slo3 (middle panel). All transfection was done in combination with LRRC52. (Right panel) Voltage to current relationship of K<sup>+</sup> current generated. Error bars indicate SEM. Solutions used in this experiment were all symmetrical K<sup>+</sup> with a pH of 7.4 (pipette and bath) and a free internal calcium concentration.