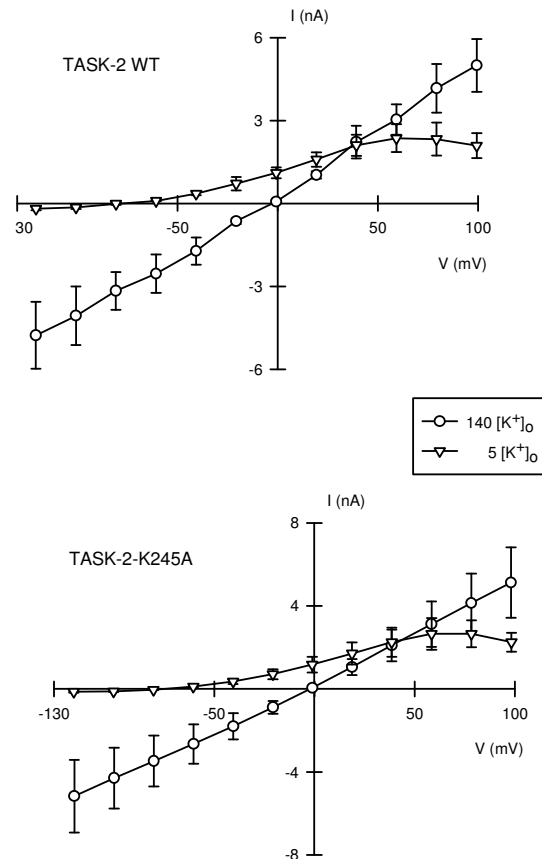
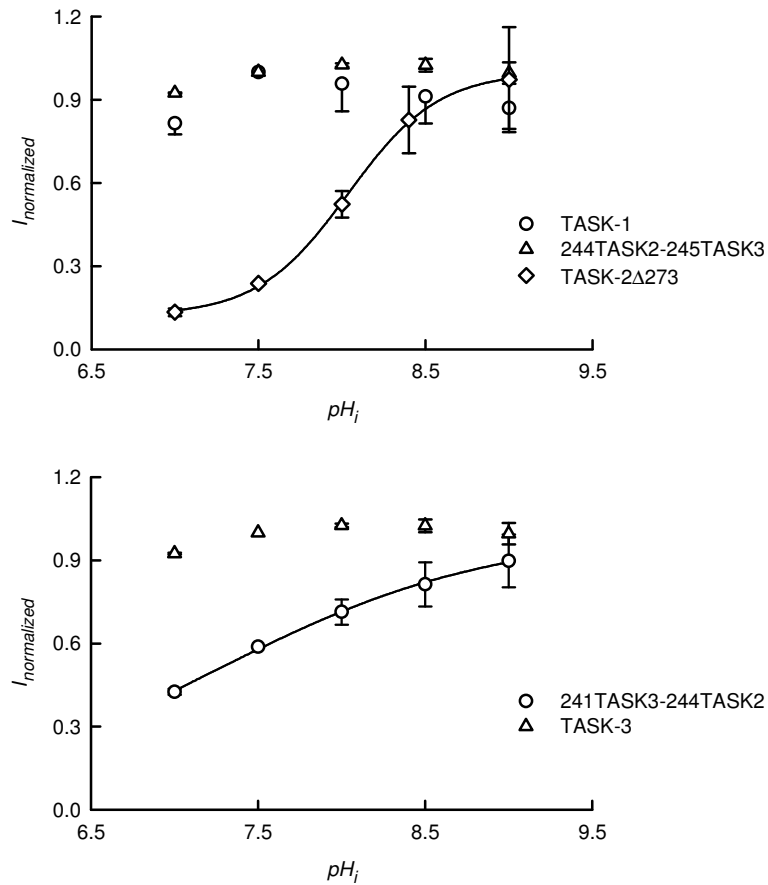


Niemeyer et al. Supplementary Figs.

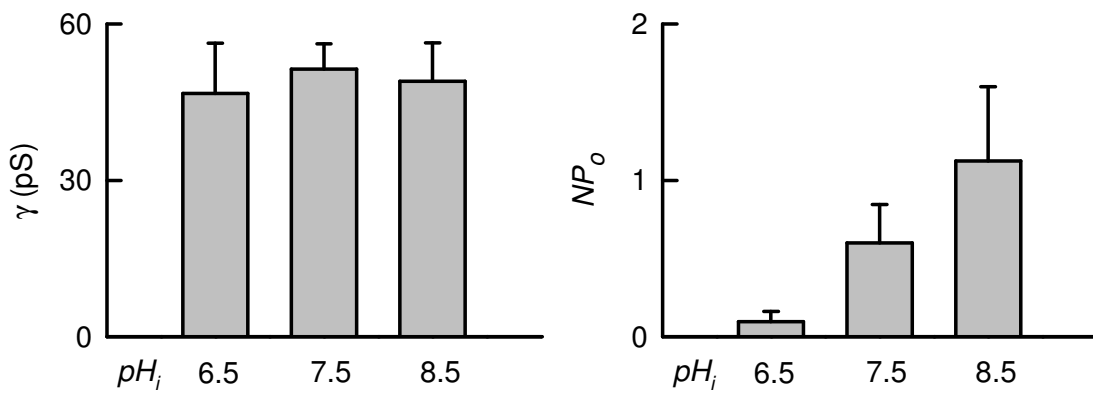


Suppl. Fig. 1. TASK-2 rectification and Na^+/K^+ selectivity under acetate pH_i -clamping conditions. Currents recorded were elicited by transfection of TASK-2 or TASK-2-K245A into HEK-293 cells. Measurements were done in the whole-cell recording mode of the patch-clamp technique. The intracellular solution contained 140 mM K^+ and 50 mM acetate. The extracellular medium had 135 mM Na^+ and 5 mM K^+ (triangles) or 140 mM K^+ and 40 mM acetate in both cases to clamp pH_i at 7.5 (see Methods in the main paper). Current-voltage relations are presented (means \pm SEM, $n=3$ for both graphs). Reversal potentials did not differ from E_{K} in either case and open rectification was also present, as described before for conventional, HEPES-buffered intracellular solutions (see Fig. 2 in ref 1).

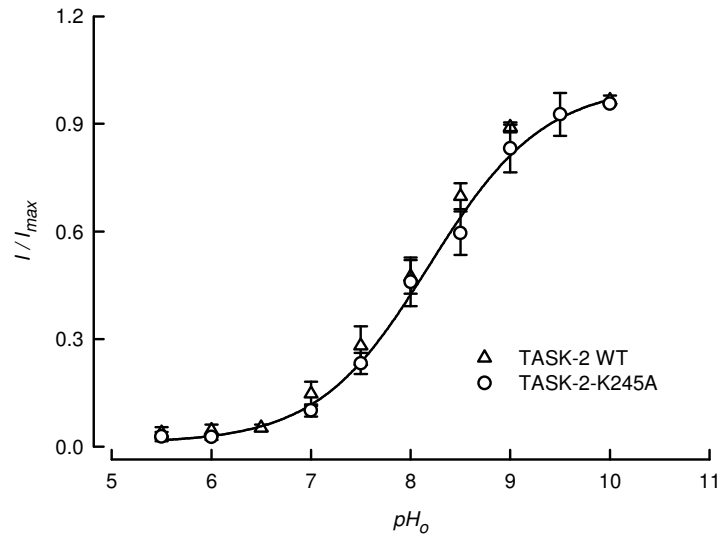


Suppl. Fig. 2. pH_i -dependence of TASK-1, TASK-3 and TASK-2 mutants and chimaeras.

Measurements were taken at 0 mV and are means \pm SEM of 4, 3, 9, 4 and 2 experiments for TASK-1, TASK-3, 244TASK2-245TASK3, TASK-2 Δ 273 and 241TASK3-244TASK2 respectively. Extracellular and intracellular K^+ concentrations were 5 and 140 mM and changes in intracellular pH were effected as described in the legend to Fig. 2A in the main paper.



Suppl. Fig. 3. Effect of intracellular pH on TASK-2 single channel parameters. The data are derived from recordings of inside-out patches obtained from CHO cells transiently transfected with TASK-2 cDNA. Experiments were performed in symmetrical 140 mM K^+ intra- and extracellular solutions (1). The holding potential was -60 mV. Data are means \pm SEM of 3-4 experiments.



Suppl Fig. 4. Comparison of the response to pH_o of TASK-2 and its pH_i -gating-refractory mutant TASK-2-K245A. Measurements were done as described in the Methods section and the line shows a Hill equation fit to TASK-2-K245A data only (means and range, $n=2$). Data for WT TASK-2 are taken from (1).

Reference List

1. Niemeyer, M. I., González-Nilo, F. D., Zúñiga, L., González, W., Cid, L. P., and Sepúlveda, F. V. (2007) *Proc. Natl. Acad. Sci. U. S. A* **104**, 666-671