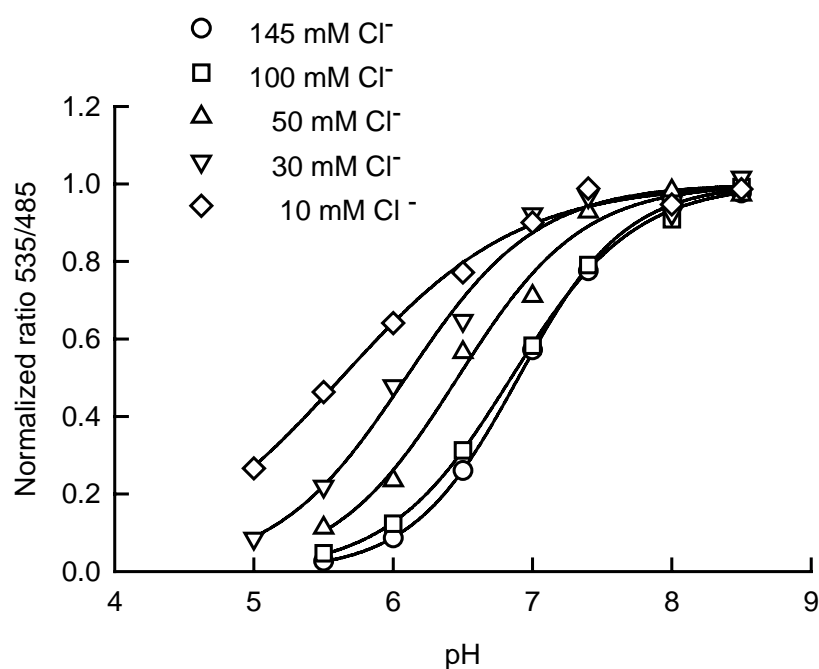
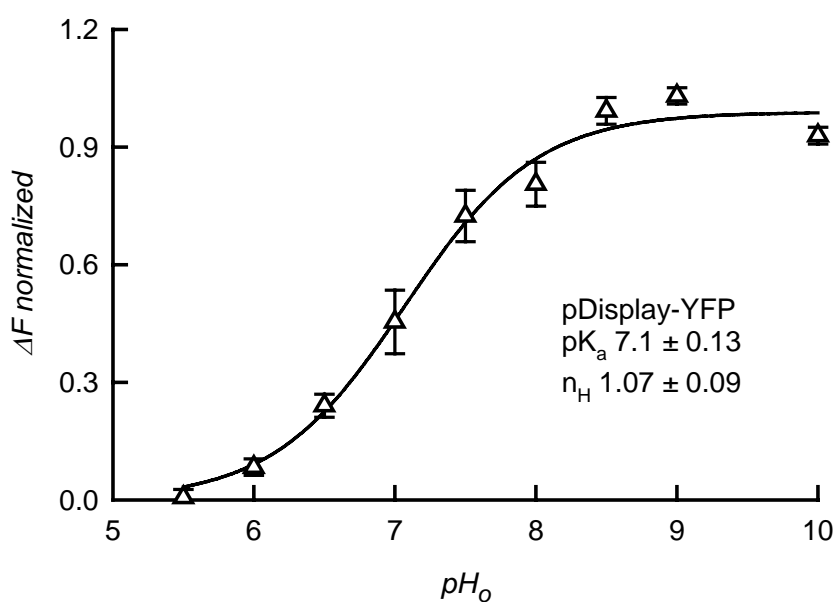


Supplementary material.



Supplementary Fig. 1. Cl<sup>-</sup> dependence of pH titration curves of pHCECSensor01. The sensor was expressed in HEK-293 cells. Ratios for were calculated between fluorescence emissions at 535 nm and 485 nm and then normalized relative to the extrapolated maximum. Notice that the curves at 145 and 100 mM Cl<sup>-</sup> are very similar.



Supplementary Fig 2. Titration curve for a EYFP tethered to the membrane with the pDisplay system. Means  $\pm$  SEM, for 9 ROIs in 3 separate experiments.

## Sequence for pHCECSensor01 plasmid DNA.

Underlined are the amino acid sequences (in 5' - 3' order) for:

Signal peptide, ECFP, EYFP, PDGFR TMD and AQP4 C-terminus.

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